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AGRICULTURAL PROBLEMS AND ECONOMIC GROWTH

IN EAST PAKISTAN - NOW BANGLA DESH

by

Asad-ud-dowla Chowdhury

Report No. 1 submitted in partial fulfillment
of the requirements for the degree of

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in

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Approved

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INTRODUCTION

Pakistan came into existence on August 14, 1947, by the partitioning of what was British India. The basis for the division was the desire of the Moslem population of India to form a sovereign state. Since the country was established in the sections of India which were predominantly Moslem, Pakistan emerged in the form of two blocks, East and West Pakistan. They are two provinces separated from each other by over 1000 miles.

East Pakistan was created from territory formerly included in Bengal and Assam Provinces of British India. It is bounded by Burma and India on the east, India on the north and west, and the Bay of Bengal on the south.

The climate of East Pakistan is humid and warm during the summer, but mild and dry during the winter. The temperature ranges between 60°F and 90°F. The rainfall has varied from 60 to 180 inches in different parts of the country, with an average of 76 inches in a year. Most of the rain falls during the months from May through September, and one-third of the cultivated area is regularly flooded over.

The total land area in East Pakistan is 35,281,000 acres and is largely an alluvial plain formed by deposits from rivers and streams

that have their origin in the high mountains north and northeast of the plain.

According to the 1961 Census Report, the total population of East Pakistan was 50,840,000. The density of population was 922 persons per square mile, which is much higher than that of most other countries, as the following examples show:

United Kingdom	572	Indonesia	153
Germany	580	China (Taiwan)	841
Japan	670	USA	51
France	225	Canada	5

Source: Demographic Year Book, UN, 1964. p. 9.

Dacca is the capital of East Pakistan, and the administrative and legislative headquarters. In 1961, the population of Dacca was 557,712. East Pakistan has three other cities with populations of over 100,000; Chittagong, 364,205; Narayanganj, 162,054; and Khulna, 127,970.

The transportation system of East Pakistan is centered on the many rivers and smaller waterways which interlace the province. About 2700 miles of waterways are navigable year-round, and an additional 1300 miles are used during the monsoon. Other transportation facilities are 1700 miles of railroads, 2985 miles of hard-surfaced roads, and 28,500 miles of unsurfaced roads. Carts pulled by bullocks, and row boats, are the most common means of transportation.

Nearly all exports and imports move through East Pakistan's two seaports, Chittagong and Chalna.

Immediately after Independence Pakistan suffered a temporary loss of commercial and industrial leadership. Practically all the industrial establishments developed before Independence were located in areas which remained a part of India. In addition, the East Pakistan area lacked industrial credit facilities, technological institutes, and research laboratories. Since 1947, the country has achieved considerable industrial progress. Most of the industrial growth, however, has been in processing agricultural commodities. The main exports of East Pakistan consist of agricultural products. Until recently, they were almost all raw materials, but a considerable increase has been made in the export of manufactured agricultural products, especially jute goods. Major imports are dominated by machinery, industrial raw materials, fuels, and food materials (4).

The economic and social objectives of Pakistan are necessarily of long range. The nation aspires to a standard of living for all its people as high as can be achieved with the resources available to it. The increase of real income per capita is its central feature. The compelling consideration is that the economy must grow at a more rapid rate than the rate of increase in population. To achieve the economic goals it is essential that all efforts be made toward developing a modernized and self-sustained economy.

The fundamental problem is how to find, under severely limiting conditions, some way to liberate the people from the crushing burden of poverty.

DISCUSSION

Agriculture in the Economic Growth in East Pakistan

Agriculture is the most important sector of the economy of East Pakistan. More than three-fourths of the population depend on agriculture for their livelihood. Over 60 percent of the national income is generated in this sector and well over 90 percent of the annual income from exports is derived from raw and processed agricultural products. A high proportion of the revenues of the province, both at central and provincial levels, is derived from taxes on agricultural lands and their products (1).

At present, developing industries are using agricultural raw materials produced in the country. Agriculture must feed the increasing population and meet the demand for better diets. It must also increase the purchasing power of the rural population so that they may consume industrial products, and must produce enough to form capital for investment in other sectors of the economy.

Agriculture does not at present produce enough food to meet the requirements, even though the diet of the populace is substandard. Crop yield per acre is very low, and production methods lack improved techniques. Substantial progress in that most backward part of the economy is an essential requisite to successful development of the East Pakistan economy as a whole.

The problem faced by East Pakistan's agricultural planners is how to lay the mental and physical foundation for an agricultural revolution which will lead to self-sufficiency in food and to development of the economy.

Land Resources and Utilization

Of the total land area, 20,306,000 acres, or 57.7 percent, was cultivated in 1958 (Table 1). Of the total land cropped, 28 percent produced two crops during the year. Nearly 2,000,000 acres now lie idle that could be placed under cultivation.

Table 1. Land utilization in East Pakistan, 1958-59

Uses	Acres (thousands)	Percentage of total land area
Single cropped area	14,685	41.7
Double cropped area	5,621	16.0
Fallow ^{1/}	1,346	3.8
Forest	5,464	15.5
Cultivable waste ^{2/}	1,936	5.5
Under roads, buildings, etc.	5,598	15.9
Unclassified	631	1.6
Total	35,281	100.0

^{1/} The cultivated area which was not cropped during the census year.

^{2/} The area which can be but is not cultivated.

Source: Statistical book of Pakistan, 1965.

The total cropped area is increasing. During the period of 1948-58 it increased by 2.8 percent. Most of the crop area is sown to food crops. In the 1962-63 crop year 84 percent of the cropped area was in rice, 7 percent in jute, and 9 percent in all other crops (7).

The double-cropped areas are well drained high lands; generally speaking, those lands which do not remain under deep water during the monsoon. The area of this type of land available for cultivation decreased by 2 percent during the decade 1948-58 (1), which was due to construction of homes, roads, and structures of various kinds.

The double-cropped area can be increased by providing adequate drainage and irrigation systems and by the introduction of quick-growing and suitable varieties of crops. Control of floods by construction of levees or dikes and dredging of stream channels will also increase the double-cropped area.

At various times, some land remains fallow, due, in most cases, to circumstances beyond the control of farmers, such as flood, drought, and shortage of working animals and seed. The size of the fallow area varies from year to year according to prevailing circumstances.

During the period from 1948-58, about 55 percent of the total cultivable waste land was brought under cultivation because of the population pressure on the land (1). The expansion of cultivation was made possible by the introduction of a government reclamation and mechanized cultivation scheme under the supervision of foreign

advisers. In this scheme cultivators were supplied with tractors and low-lift water pump services on credit. Introduction of new crops, such as rami, casaba, and sunflower was also of considerable effect in increasing the acreage under cultivation.

The ultimate opportunity for further expansion of the cultivated area is 5.5 percent of the total land area. The area under roads and buildings is increasing. During the 1948-58 decade, it increased 9.6 percent. The area taken out of cultivation will continue to increase with the increase of population and advancement of the economy.

Extension of cultivation to the greatest possible limit and intensive use of land are forced by population pressure in East Pakistan. About 96 percent of the total cultivated land area is cropped every year and on an average one and one-half crops are raised annually (6). The cultivable waste is of poor quality and relatively expensive as farmland. Even if all available land is brought under cultivation, demand of the country for agricultural production cannot be satisfied at the existing level of production (1).

Land tenure

Under the provisions of the Land Acquisition Act of 1951, all rights to ownership in land were vested in the provincial Government. The tenants holding and operating the lands are tenants of the State, to whom rents are payable. The Act fixed a maximum limit of tenant holdings at 33.3 acres per family, plus an additional area not exceeding

3.3 acres for a house and other buildings, or 3.3 acres for each member of the family. The maximum limit may be relaxed in some instances, such as large-scale operations carried on by power-driven mechanical equipment, or in cases of large dairy farms or tea and sugarcane plantations. The Act gave the cultivator full permanent and heritable occupancy rights with the right of transfer to a bonafide cultivator, but forbade subletting.

The law has removed intermediary interests, and places the tenants in direct relationship with the State, and guarantees against unreasonable and frequent enhancement of rents. The Act has, however, established many small, uneconomic farming units and has indirectly interfered with the feasibility of the introduction of modern methods of cultivation. Thus, improvement in agriculture has been greatly impeded.

Farm size

The Land Reform Commission of West Pakistan has determined that the money income of a family of four adult consumption units should be about 1200 rupees per year (approximately \$252 USA). This they regard as a subsistence unit. They also concluded that 12 1/2 acres of land, if properly managed and intensively cultivated, will yield such an income (1).

The average farm family size in East Pakistan is six, of which 3.60 are adult and 2.40 are minors. If two minors are considered

equivalent to one adult, the family size may be considered as a 5-adult consumption unit.

According to the West Pakistan Land Reform Commission observation, the East Pakistan family income must be about 1500 rupees (\$325 USA) per year for their subsistence (1). To get that income at the present level of productivity and market prices each family needs a minimum of five acres of land for their subsistence.

The same commission has visualized an economic holding as four times the size of the subsistence holding. According to the figures, in East Pakistan, an economic holding would be a minimum of approximately 20 acres of land. Only 4 percent of the total number of farmers control an area of more than 20 acres.

According to this concept, 77 percent of all the farms in East Pakistan are less than subsistence holdings and more than 94 percent of the total are less than economic holdings, as shown in Table 2. An even worse situation is revealed when it is noted that 51 percent of the farms are less than 2.5 acres, which is less than half the size of a subsistence holding. The result is that 51 percent of the farmers hold less than 16 percent of the total farm land, and a pathetic picture of under-employment and low level of living can be visualized.

Fragmentation of farms

The problem of small farms is not limited to size only. The farms are also fragmented. Holdings are made up of small plots

Table 2. Number and percent of farms, farm area, and farm area cultivated, classified by size of farm, 1960

Size of farms (acres)	Number of farms	Percentage of total farms	Farm area (acres)	Farm area Percentage of total	Cultivated area (acres)	Cultivated area in percent	Farm area cultivated*	Cropping intensity**
East Pakistan (total)	6,139,480	100	21,725,827	100	19,138,109	100	88	148
Less than 0.5	802,630	13	204,496	1	138,382	1	68	166
0.5 - under 1.0	689,840	11	499,144	2	401,680	2	80	171
1.0 - under 2.5	1,677,410	27	2,826,355	13	2,468,590	13	87	166
2.5 - under 5.0	1,615,020	26	5,734,739	26	5,151,175	27	90	155
5.0 - under 7.5	698,450	12	4,192,948	19	3,780,245	20	90	147
7.5 - under 12.5	442,360	7	4,158,797	19	3,717,034	19	89	140
12.5 - under 25	187,790	3	3,066,199	14	2,688,922	14	88	132
25 - 40	21,370	Less than	632,622	3	538,618	3	62	127
40 and over	4,610	0.5	410,527	2	253,463	1	62	117

* The percentage of individual farm area cultivated and the rest is under homestead, roads, threshing floors

** $\frac{\text{Total cropped area} \times 100}{\text{Net sown area}} = \text{Intensity of cropping}$

The total cropped area represents the aggregate area of the various crops raised in the same farm land.

Net sown area means the cultivated farm area actually cropped regardless of the number of crops raised.

Source: Pakistan Census of Agriculture, 1960, Vol. 1, East Pakistan.

scattered all over a village area and intermixed with plots belonging to other cultivators. Table 3 shows the extent of fragmentation of the small farms.

Table 3. Percentage of farms fragmented and number of fragments per farm for different sized holdings, 1960

Size of farm holdings	Total farms fragmented	Number of fragments			
		2-3	4-5	6-9	10 & over
acres	percent	percent	percent	percent	percent
Under 0.5	53	44	7	2	under 0.5
0.5 - 1.0	88	49	26	11	2
1.0 - 2.5	95	22	28	31	14
2.5 - 5.0	97	10	16	32	39
5.0 - 7.5	97	6	10	23	58
7.5 - 12.5	98	4	8	17	69
12.5 - 25.0	98	3	6	13	76
25.0 - 40.0	97	3	5	8	81
40.0 and over	95	5	5	7	78
East Pakistan	90	21	17	23	29

Source: Pakistan Agricultural Census, 1960, Vol. 1, East Pakistan.

If the whole area cultivated by a farmer were consolidated in one place he would be able to make better use of the land and other resources. Use of farm machinery is uneconomic, wells for irrigation are impracticable, cost of protecting crops is high. Good farm management is unexpected under these conditions. Because of smallness of the plots much land is wasted in paths and embankments around plots, and because of the scattering much time is lost in travel.

Fragmentation is caused mainly by the law of inheritance, which requires division of property among the descendants of the deceased, each claiming a bit of every kind of land. Lack of job opportunities in other sectors of the economy is returning people to the farms, which is increasing the number of small farms. The sale of small plots of land to discharge debts also contributes to fragmentation.

Use of farm area

Table 2 showed that 68 percent to 80 percent of the total farm land is cultivated in farms of 0.5 to 0.99 acres. On the average, the farmer with a farm of 0.5 acre cultivates only 0.34 acre. Farmers with farms of 1.0 to 25.0 acres cultivate 87 percent to 90 percent of the total farm area. On small farms, relatively large areas are occupied by homes and roads. The farms of 25.0 acres and over are nearly all "haor,"¹ dry, and hilly land; therefore, the lesser percentage (62.0 percent) of farm land under cultivation may not be unnatural. Intensity of cropping is higher on small farms than on large farms, as shown in Table 2. Although there are no data showing total production of small farms which can be compared with the data for large farms, in practice small farmers tend to compensate for the lack of land by continuous use of the land. The high intensity of land use without supplementing soil fertility leads to soil exhaustion and heavy erosion.

¹ Haor land (rice land) is the area which remains under deep water for almost 8 months of the year.

Need for Increasing Production

When land resources are limited, the principal means of raising production to keep pace with the increase of population and the demand for better diets is by raising the yield per acre. Production may be increased either by changing its pattern toward more intensive systems of cultivation, by using more labor, fertilizer, double or triple cropping, and by raising high-value crops. In East Pakistan, with a dense and fast-growing population, where food is perennially short, the first need may be to maximize the volume of the total output in terms of bulk and essential nutrients.

Climate and soil have a great influence on crop yields. Regardless of soil and climate, per-acre yields in many countries have been increased greatly in the last few decades. Indications are that crop yield-per-acre can be greatly increased in some of the countries in which yields have remained static. With improved management, greatly increased yields are possible in East Pakistan. Much of the information gained by experimental work in advanced countries can be used by the people of Pakistan to increase per-acre yield.

Increasing productivity is not only a technical problem but also a social and economic problem. The main obstacle is not availability of technical knowledge but transmitting of modern knowledge of production to millions of small farmers and of creating an environment to put the technology into practice.

Crop yield per acre
in East Pakistan

Crop yields per acre in East Pakistan are among the lowest in the world. An increase in agricultural productivity both per man and per acre is the most pressing need.

Average yields of rice in USA and China (Taiwan) during 1909-13 were much the same as in Pakistan, but since then yields in USA and China have been raised by 120 and 80 percent, respectively, and yields in East Pakistan are still the same as they were (2).

Table 4 shows the comparative per acre yields of some crops in East Pakistan with those of other countries.

Table 4. Average yields per acre of several crops in various countries of the world

Crop	East Pakistan*	Japan	Italy	USSR	USA	China (Taiwan)
	lbs.	lbs.	lbs.	lbs.	lbs.	lbs.
Rice	976	4,427	4,807	3,096	3,653	1,886
Jute	1,312	-----	-----	-----	-----	-----
Sugar cane	32,800	49,011	-----	-----	43,214	-----
Wheat	517	2,274	1,836	714	1,500	-----
Cotton (lint)	144	197	172	-----	262	205
Barley	517	2,309	1,214	854	820	869
Maize	713	1,394	1,451	2,181	3,584	-----

Source: * Akhter, Economics of Pakistan
Agricultural Statistics, 1963, U. S. Department of Agriculture

Comparison of the figures shows that USA gets four times, Japan more than four times, and Italy five times as much rice from an acre of land as does East Pakistan. Similarly, in the case of other crops, the production per acre is much higher in other countries than in East Pakistan.

Agricultural labor force and employment

The land and farm labor distribution, as shown in Table 5, indicate that, although a comparatively high proportion of people who work for others come from the small farms, the concentration of workers on small farms is still high. If it is assumed that the workers who work both on farms and work for others give 50 percent of their time to their own farms, it follows that 28 percent of the total farm workers are engaged on 16 percent of the total cultivated land with 0.62 acre per worker. The workers comprise the farm group who have holdings of less than 0.5 acre to 2.5 acres. On farms of over 2.5 acres, the average cultivated area per worker per acre is 2 acres. A worker, even with only the most primitive of tools, with 0.62 acres to cultivate, is wastefully used.

The number of farm workers per farm increases with the increase of farm size, though the increase is not proportionate to the increase of farm size. Extended families on the larger farms is the reason for the larger number of workers. Because of the large number of farm workers already on larger farms the opportunity for small farm owners

Table 5. Labor force of farm operators and its use by size of farms

Size of farms (acres)	Average number per farm	Of the total workers	Working on own farm full time	Percentage of working members		
				Working on own farm part time and doing out- side work	Doing other work full time	Nature of work not known
Less than 0.5	2.04	9.70	34.24	44.27	21.40	0.09
0.5 - under 1.0	2.18	9.00	47.46	38.26	14.25	0.03
1.0 - under 2.5	2.41	24.20	56.95	31.65	11.35	0.05
2.5 - under 5.0	2.79	26.90	62.31	27.71	9.95	0.03
5.0 - under 7.5	3.29	13.80	62.70	26.75	10.50	0.04
7.5 - under 12.5	3.85	10.22	62.53	25.95	11.53	0.09
12.5 - under 25	4.61	5.12	60.75	25.30	13.50	0.25
25 - 40	5.49	.70	60.25	23.37	15.50	0.18
40 and over	6.52	.17	59.10	22.20	18.70	0.05

Source: Pakistan Census of Agriculture, 1960, Vol. 1, East Pakistan

to work on the larger farms is minimized. From 44 percent to 31 percent of workers from farms of 0.5 acre to 2.49 acres, respectively, work part-time outside their own farms. The demand for farm work is seasonal, and jobs are available only when their own farms need them. The remainder of the time they are unemployed. The highest percentage of workers who do fulltime work away from their own farms are those who have farms of 0.5 acre. Most of them are unskilled. The second highest percentage of workers who do fulltime work away from their farms are those who have the largest farms, because workers from this group have had opportunity for training and education and therefore are engaged in skilled and professional work.

Use of implements

One of the reasons for low output per man and per bullock is the inefficiency of the implements currently used by the peasants. Considerable effort has been made by the provincial agricultural department to develop and introduce suitable implements, such as improved plows, irrigation implements, seed drills, hand hoes, and bullock-driven sugarcane crushers, but with little success (1).

Table 6 gives the current use of implements by size of the farm. It shows that the most primitive implement, the wooden plow is not possessed by every farmer. The smaller the farm size, the less likelihood of possession and use of any implement. Beside the smallness of the farm, the excess labor force, lack of capital, and repair troubles discourage the use of power implements.

Table 6. Ownership and use of farm implements and machinery
by size of farm

Size of farm (acres)	Average number of plows per farm	Farm area per plow	Average number of sugarcane crushers per farm	Average number of irrigation pumps per farm
Under 0.5	0.07	0.03	0.05	0.023
0.5 - under 1.0	0.28	0.7	0.1	0.1
1.0 - under 2.5	0.67	1.7	0.3	0.11
2.5 - under 5.0	1.0	3.2	0.24	0.17
5.0 - under 7.5	1.26	4.5	0.35	0.24
7.5 - under 12.5	1.7	5.3	0.48	0.34
12.5 - under 25	2.4	6.6	0.7	0.7
25 - 40	3.5	8.3	0.9	2.1
40 and over	5.4	12.4	1.1	2.2

Source: Pakistan Census of Agriculture, 1960, Vol. 1, East Pakistan.

One plow is shared by 4 or more farmers with holdings of less than one acre. These farms comprise 24 percent of the total number of farms in East Pakistan. Holdings have become so small that the maintenance of even a wooden plow by every farmer has become uneconomic. Furthermore, a single farmer cannot afford the 75 cents which is the price of a plow.

Working animals

Working animals, bullocks and buffaloes, are the source of power for all agricultural work. East Pakistan has 19,405,500 cattle and buffaloes, of which about 9,800,000 are working animals and about 4,000,000, milch animals. The rest are calves, bulls, and heifers. In addition, there are more than 6,000,000 goats and sheep (5). The average milk production per milch animal per day is about 2.5 pounds.¹ The capacity of the working animals is low because they are poorly maintained.

The large numbers of cattle are a problem as they are always competing with men for food from the same limited area of land. Because farms are very small, the animals cannot be used efficiently. Smallness of farms, lack of capital, type of cultivation, and absence of suitable machinery are causes of the problem. If the 10,000,000 working animals could be replaced by power machinery and the pressure taken from the land, the production of existing milk and meat-producing

¹ United Nations, FAO, Production Year Book, Vol. 18, 1964.

animals could easily be raised.

The distribution of working animals by size of farm and cultivated area per pair of animals and their pressure on the land is shown in Table 7.

Table 7. Distribution of working animals and pressure of livestock and area per pair of animals by size of farms, 1960

Size of farm	Ave. no. of work animals per farm	Cultivated area for pair of work animals	Number of livestock per acre cultivated	Number of livestock per acre of fodder
Less than 0.5	Less than 0.5	2.30	3	151
0.5 - 1.0	Less than 0.5	2.63	2	63
1.0 - 2.5	1	2.62	1	55
2.5 - 5.0	2	3.4	1	46
5.0 - 7.5	3	4.2	1	41
7.5 - 12.5	3	4.9	1	38
12.5 - 25	5	5.7	1	36
25 - 40	7	11.0	Less than 0.5	35
40 and over	10	11.0	Less than 0.5	35
East Pakistan (average)	2	3.9	2	78

Source: Agricultural Census of Pakistan, 1960, Vol. 1, East Pakistan.

If we total all the farms and total the number of working animals shared, we find that many more animals than necessary are being supported, however poorly. Not only does sharing animals among a number of farmers result in poor cultivation, but the existing cattle are inefficiently used.

Use of fertilizer

Only 4 percent of the total number of farms in East Pakistan used chemical fertilizer, and the percentage of farms using fertilizer decreases with the decrease of farm size, as shown in Table 8.

Table 8. Percentages of farms using chemical fertilizer, by size of farms, in East Pakistan, 1960

Size of farm (in acres)	Percentage of farms
Under 0.5	1
0.5 - 1.0	3
1.0 - 2.5	4
2.5 - 5.0	5
5.0 - 7.5	5
7.5 - 12.5	6
12.5 - 25.0	7
25.0 - 40.0	9
40 and over	13
All farms	4

Source: Agricultural Census of Pakistan, 1960, Vol. 1, East Pakistan.

Fertilizers are distributed by the government agencies at a highly subsidized rate and on easy credit terms. Despite the effort on the part of the Government, very little fertilizer is used.

Agricultural extension workers have been working in every village, since Independence, to educate people in the use of fertilizer and other improved methods of increasing production. It is incorrect to say that the use and effect of fertilizer is unknown to farmers.

Farmers have seen demonstrations of the performance of improved seeds, and the yield-increasing effects of fertilizers are known throughout the country. Oftentimes it is said that farmers lack the "know-how" and materials to increase production. This statement may be partly true, but it is hard to believe that cultivators in East Pakistan are completely unaware of the effect and use of fertilizer, better seeds, plant protection, and improved implements.

Since Independence, the government Agricultural Extension Service has been working in all possible ways to educate people in know-how. Along with the educational approach, supplies of fertilizers, seeds, chemicals, and implements have been made available at a highly subsidized rate on the easiest of credit terms, promise to pay in the future. Plant protection materials are being supplied free of cost. All are made available in the government stores and at village dealers located at the most convenient places for farmers to obtain them. Every union of 10,000 to 13,000 people is provided with one trained, fulltime agricultural agent for giving guidance and demonstrations to the farmers.

Irrigation, drainage, and flood control

The average rainfall in East Pakistan is 76 inches per year, but the uneven distribution during the year, both geographically and seasonally, creates a need for irrigation. The highest rainfall is in Sylhet district (226 inches), and the lowest in the Rajshai district

(53 inches). Eighty-five percent of the total rain falls from June through September. The rest of the year is more or less dry and irrigation is needed for crops. During the dry winter period a small area is cropped with legumes, wheat, barley, and summer rice. Irregularities of monsoon occasionally result in crop failure and poor yield over a vast area. Irrigation can insure against drought and make double, and even triple, cropping possible (6).

With protective embankment and irrigation, the coastal areas, which are subject to intrusion of saline water, owing to tidal waves, and are at present raising only one crop of rice, can support intensified and diversified cropping (6).

At present, 21,600,000 acres are cultivated, of which 1,300,000 acres (7 percent of the total) are irrigated. The remainder of the land depends on rain.

Adequate information is not available to determine the ultimate irrigation target, but it is estimated that in the long run the cultivated land could be increased to 26 million acres, with nearly 24 million acres sown in an average year. About 13 million acres could be irrigated by extensive construction of diversion works and canals and pumping of surface and subsurface water, mostly to supplement rainfall during the dry winter season. (6, p. 194)

The annual flow of the rivers is estimated at 925,000,000 acre-feet, most of which is wasted. By storing the water in reservoirs, plenty of water can be made available for irrigation.

Irrigation is at present used for tea, some vegetables, and summer rice. The type of irrigation commonly practiced is flood irrigation from surface water sources, lifted by low-lift pumps or manual labor.

Floods occur frequently and with great severity, causing enormous loss of life and crops, and misery to the entire population.

The Second Five Year Plan estimated that in each of the three successive years, 1954, 1955, and 1956, over 8,000,000 acres of the rice crop alone were damaged. Moreover, many of the crop lands remain under deep water till the monsoon ceases; therefore, only one instead of two crops can be grown. If, however, as frequently happens, the flooding is excessive, occurs at an unusual time, or does not recede sufficiently at the time for transplanting, no crop is grown.

Table 9 shows that an average of 7 percent of the total cultivated land is irrigated. About 75 percent of the total cultivated area is not irrigated. Irrigation could increase production by making possible the raising of double and triple crops each year, and by increasing yield per acre of crops grown. In addition to some new land which can be brought under cultivation through drainage, about 18 percent of the total cultivated area which is flooded by monsoons can be developed for double cropping by drainage and flood control.

The irrigation and drainage program involves the question of a large amount of capital. In addition to that the present small size of farms and scattered holdings will greatly reduce the success of

irrigation projects.

Table 9. Percentage of cultivated area irrigated and flooded in East Pakistan, by size of farms

Size of farms	Percentage of cultivated area irrigated	Percentage of cultivated area flooded by monsoon	Percentage of cultivated area not irrigated
Under 0.5	6	14	79
0.5 - under 1.0	6	18	76
1.0 - under 2.5	6	19	75
2.5 - under 5.0	6	19	75
5.0 - under 7.5	6	18	75
7.5 - under 12.5	7	18	75
12.5 - under 25	8	19	73
25 - 40	9	19	72
40 and over	13	14	73

Source: Agricultural Census of East Pakistan, 1960.

SUMMARY AND CONCLUSIONS

The economy of East Pakistan is almost completely dependent on agriculture, and at the present time her agriculture is relatively backward. More than 61 percent of the total land is under cultivation, and an additional 5.51 percent can be brought under cultivation. With the increase of population, cultivable waste lands are decreasing rapidly. On the other hand, more land is being taken up by structures. The increase of population leads to a decrease in land per capita, which is at present 0.51 acre.

The maximum ceiling for land holdings given in the Land Reform Act has led to small-sized farms throughout the country. Farm size ranges from 0.5 acre to 40 acres. Fifty-one percent of the farms have less than 2.5 acres. The amount of farm land cultivated decreases on farms with areas above or below that range. On the smaller farms a relatively high proportion of the area is used for structures, lanes, and threshing floors.

Farms are fragmented into small plots scattered throughout the villages, being intermixed with plots belonging to other farmers. Statistics show that the larger the farm the greater the number of fragmentations.

Crop yields per acre in East Pakistan are among the lowest in the world (6), and the type of cultivation is almost primitive.

The number of laborers per farm is high. The large number of family workers on the larger farms makes unnecessary the employment of laborers from small farms. Therefore, small farmers are employed only in peak cultivation periods and are unemployed for the major part of the year.

Very few implements are used, as most of the smaller farmers do not possess a plow. Ownership of implements decreases with the decrease of farm size.

Even though most of the smaller farmers do not possess working animals, the total number of working animals is excessive; consequently, they are inefficiently used.

Only 4 percent of the total number of farms are presently using chemical fertilizer. The percentage of farmers using fertilizer decreases with the decrease of farm size.

Fertilizer, manures (oil cake, bonemeal), seed, implements, even the credit facilities are provided by the Government for use by farmers on easy terms. Government representatives have also given demonstrations of different yield-increasing practices for the past several years. Farmers are not completely unaware of yield-increasing methods.

At present, only 7 percent of the total crop lands are irrigated, and vast areas are damaged by floods almost every year. Irrigation and flood control have great possibilities for increasing crop yields in the country.

The conclusion can be drawn that there is great scope for increase of total agricultural production both by increasing yield per acre and by bringing new land under cultivation. Yield per acre can be increased by using modern yield-increasing means and methods, which at present are rarely used.

To attain the adoption of yield-increasing techniques, better approaches by the Agricultural Extension Service are essential. A study of the social and economic attitudes of the rural society is necessary. Economic incentives to work hard for increased yields may help to a great extent. Irrigation and flood control will not only help in increasing production but will give security in farming. Not only the proportion of the total but also the absolute numbers of those dependent on agriculture must be lowered. The most natural way of bringing this about is to provide non-agricultural productive employment as near to the villages as possible.

To increase the production of milch and meat animals, the working animals should be replaced by suitable power machines.

Legislation to consolidate holdings and to stop fragmentation is immediately necessary. Arrangements to increase the farm size to above subsistence levels must be made.

All factors, other than agricultural, associated with economic growth in the country, especially limitation of the population, should also be given consideration.

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POPULATION PROBLEMS IN EAST PAKISTAN

IN RELATION TO ECONOMIC GROWTH

by

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INTRODUCTION

Rapid population growth is a major problem in Pakistan. The problem is acute because population growth has occurred without proportionate economic and social improvement. Consequently, the number of ill-fed and poorly housed people has increased. The objective of a forward-looking government is to achieve economic growth. Economic growth generally depends upon the size and quality of the labor force, the rate of accumulation of capital, the natural resources available, and upon technology. In Pakistan, a country in which the population is already high, the further increase acts only as a drag on economic development, preventing any rise in per capita income and thus aggravating the difficulty of saving and investing for development of human and material resources.

In the past, very few Pakistani realized that population growth would be a major problem in planning economic and social improvement. The accepted belief was that education, agricultural extension services, and public health measures would be enough to raise the level of living. At the present time, people in Pakistan who saw no major problems in population growth now see it as one of the most important problems facing the country.

A discouraging aspect of the situation is the seeming immutability of the food problem. Ignorance, low earning power, high birth rate,

starvation, and malnutrition, with the attendant apathy, illness, and disease are serious problems.

The Government of Pakistan realizes that major problems exist in achieving economic development unless the present population growth rate is lowered, in addition to other factors responsible for economic development. A program for the dissemination of information on birth control has been initiated and is developing with some success throughout the country.

DISCUSSION

Population Growth in East Pakistan

East Pakistan is a heavily populated agricultural country. Urbanization is meager, reflecting the predominantly rural character and agrarian peasant economy of the country.

The agrarian society typically has a high average death rate (4). High birth rates result from the social beliefs and customs that generally develop if a high death rate community is to continue in existence. These beliefs and customs are also associated with the economic advantages, in the short run, of a large number of births to a peasant society (4).

The cost of education through the fifth grade is government supported. Most parents, however, are not interested in educating their children, and their services are used for farm and household chores from early childhood. Children are the traditional source of security for the old age of the parents. The high death rates, especially during childhood, imply that the confirmation of security can be attained only when many children are born (4).

In recent years the application of some of the discoveries in chemical, medical, and public health fields has led to a spectacular reduction in the mortality rate (9). Public health measures are administered at modest expense and on a vast scale, usually by

or with the assistance of, technical experts from the United Nations, the United States of America, and other advanced countries. The result has been a drastic decline in death rates, especially of children. In addition, improvement in transportation, which has helped in the rapid shipment of food and medical supplies to combat food shortages, famines, and epidemics, and a slight raise in per capita income (10), together with importation of food from the advanced countries, have jointly helped in decreasing the death rate and increasing life expectancy.

The death rate has been lowered, the birth rate continues high, and the result is a population explosion. The population of the country will be much greater than it has been as death control means become common and effective (1).

Table 1 gives population figures for East Pakistan as recorded in census reports from 1901-61. The comparatively small increase in population during the period 1901-31 was due partly to under-enumeration because of noncooperation, but mostly to loss of lives from famines and epidemics. By 1931 the populace had become aware of the importance of the census and were willing to cooperate. The negligible increase from 1941-51 was probably due to a severe famine in 1943 and also to migration. The rate of growth, which was 2 percent per year during 1951-61 is now estimated to be 2.2 percent or over (1). The time required to double a population depends upon its rate of growth.

Seemingly small percentage increases in the annual rate of population growth result in very rapid total increases in population (7).

If the population increases each year at (percent)	The total population will double in (years)
1	69.3
1 1/2	46.2
2	34.6
2 1/2	27.6
3	23.1
4	17.3

Table 1. Population growth in East Pakistan

Year	Population (in millions)	Increase over previous census (in millions)	Percentage increase (in 10 years)
1901	28.9		
1911	31.6	2.7	9.3
1921	33.3	1.7	5.3
1931	35.6	2.3	6.9
1941	42.0	6.4	17.9
1951	42.1	0.1	0.2
1961	50.8	8.7	20.6

Source: Akhter, Economics of Pakistan, p. 15.

According to the preceding figures, at the present rate of growth, the population of East Pakistan will be approximately doubled within the next 30 years.

Food Production and Consumption

The current per capita food supply falls short of requirements. Furthermore, the types of foods available are nutritionally inadequate. Cereals account for 73 percent of the food supply, whereas protective foods comprise only about 15 percent of the total supply (15, p. 11). Retarded growth of children, poor health of adults, and low working capacity are indications of widespread malnutrition in the country. It may be said that about one-half of the population suffer from hunger or malnutrition, or both.

Table 2 shows that the per capita total consumption of calories in East Pakistan is below the requirements and is almost static, although the total food production is increasing.

In 1963-64, however, both area under food crops and production increased, the latter due mainly to favourable weather conditions. This increase is negligible when a period of sixteen years is taken in view. This becomes all the more glaring when increase in population is taken into account. (6, p. 23)

The implication is that increased food production cannot surpass population growth.

The level of diet in underdeveloped countries of the world would have to be raised by a third if minimum dietary targets are to be achieved. (14, p. 6)

This statement applies only to existing population levels and does not take into account the additional food which will be needed

Table 2. Estimated per capita per day calorie consumption of food supplies, by countries

Country	C a l o r i e s				Consumption needs*
	1948-49 1950-51	1957-58 1959-60	1960-61 1962-63	1962-63	
United States	3,190	3,100	3,100	3,090	2,600
Canada	3,110	3,110	3,070	3,050	2,600
United Kingdom	3,130	3,280	3,270	3,270	2,600
Ceylon	1,990	2,030	2,080	1,990	2,300
China - Taiwan	1,980	2,330	2,350	2,290	2,300
India	1,700	1,900	2,020	2,000	2,300
Japan	1,900	2,220	2,270	2,290	2,300
Philippines		1,760	1,810	1,800	2,300
Pakistan	2,010	1,980	1,970	1,980	2,300

* Food-one Tool in International Economic Development. Iowa State University. Table 2.1.

Source: Production Yearbook, 1963, Vol. 17, FAO, UN, Table 97.

for increased population. In order to feed the expected increased population at the existing inadequate level, food production in East Pakistan would have to be doubled within the next 30 years.

Agricultural output is increased only with difficulty. With a rapidly growing population, demand is rising rapidly. Lack of foreign exchange precludes purchases of food products produced by the advanced countries for the following reasons:

(1) The Government does not have enough funds to purchase food from countries that have it in abundance;

(2) If the food is imported, the people cannot purchase it from the markets because of their poverty.

The physical limitation of land surface restricts crop production within the country. The crop area can at best be expanded by only 5.5 percent. With the increase in population the per capita cropped area decreases at the same rate as the population increases and has been reduced from 0.61 acre in 1951 to 0.51 acre in 1961 (1).

In the countries that have made economic advances, shifts in occupation of the inhabitants, such as mining, manufacturing, and processing, have taken place, which means that, despite the growth of population, no further pressure has been placed on farming land (10). In East Pakistan, however, no significant shift in the occupational structure has taken place. At present, in the absence of job opportunities in other sectors, with the growth of population an increasing number of people have sought to earn a living in farming. The trend is, therefore, to smaller units of land for each cultivator.

The increasing agricultural population on farm land could be compensated for if production per acre of land were increased proportionately. The low productivity of land is not due to a deficiency of land itself but to the way the land is handled. When the rural population increases and the supply and production of agricultural land remain constant, rural unemployment and under-employment become more prevalent. Most rural areas have passed the point of diminishing

total returns insofar as the application of labor to land is concerned. The elimination of surplus agricultural population would greatly increase the production of the remaining farm population and would not reduce the total agricultural production. Due to the heavy concentration of people on farms, development works, such as roads, and levees, even factories, hospitals, schools, and other buildings are often opposed by the people in many cases because they fear that they may lose their small holdings, which are their only sources of livelihood.

There are too many men and there is too little land! Even if a machine does the work of a hundred men it is of little help unless it produces more food than the hundred men could produce. Industrialization will be of some help, but it requires a great amount of capital outlay-- so much that it is almost beyond the power of the country to produce it at the present time.

Demographic Characteristics of East Pakistan

East Pakistan is one of the most densely populated countries in the world. It has a population density of 922 persons per square mile. In addition a large area of the country is under water. If the water-covered area is excluded, the density rises to 979 people per square mile.

Table 3 gives a comparison of populations of several countries, together with the per capita income.

Table 3. Density of population per square mile and per capita income

Country	Density	Annual income per capita in USA \$
East Pakistan	922	under 100
Japan	652	200-299
Indonesia	160	under 100
United States of America	51	2000 or above
Burma	78	under 100
Egypt	67	100-199

Source: Population Bulletin of the UN, No. 7, 1963.

A comparison of the population density and the per capita income shows that the prosperity of a country may have little relation to the population-area ratio. The richness or poverty of a country depends upon the resources available and the effectiveness with which they have been developed and used. When a country is burdened with a dense population, lacks mineral resources, has little industrial development, and must depend almost completely upon agriculture, mass poverty can easily result (1).

The significant figure for East Pakistan is, therefore, the ratio of population to cultivated area as a measure of population pressure. The present cropped area per capita is less than 0.51 acre.

The minimum area required for a reasonable subsistence, in our conditions of agricultural techniques, has been estimated at one acre per head of the population. (1, p. 14)

In other words, East Pakistan should have almost double its acreage to support its present population at existing technique and production.

Birth and death rates

The census report of 1941 gives a crude birth rate of 34.3 per 1000 people and 24.9 as crude death rate for the India-Pakistan subcontinent. A recent sample survey in West Pakistan shows the crude birth rate to be 48.2 per 1000 people and the crude death rate to be 21.2 per 1000 people for 1955-56, which is an increase in birth rate and a decrease in death rate (1).

In the report of a two-year population control research program in a rural area in Comilla, East Pakistan, in 1964, the observation was made that

The various estimates of birth rates in Pakistan, including the present one with its several reservations, indicate some uncertainty in the rates for the two sections of the country, with the estimates for East Pakistan varying from the mid to the high 50's or low 60's. Given the quality of the currently available data, it might not be unreasonable to suggest that this is as close as demographers can come, at the present time, to estimate the true birth rate. . . . the death rate for East Pakistan would be somewhere around 35. (11, p. 80)

Urbanization

Generally speaking, the percentage of the population of a country living in urban areas reflects the degree of industrialization achieved by it. In East Pakistan, urbanization is still very meager. The total urban population in 1961 was 5.2 percent of the total population in

comparison with 4.4 percent in 1951 (5), which shows that the country is still of rural society and economy.

Sex ratio

The customs and social values of the Pakistani people give preference to male children. As children, males receive more and better food, care, and education. As a result the females suffer from certain economic and social disadvantages, both as children and adults, and are subject to higher mortality rates than males. The number of females in the total population is smaller than that of males. In 1961, for every 1000 males there were 930 females (5).

Literacy and education

According to the latest census report of the country, literacy has been defined as "the ability to read with understanding a short statement on everyday life in any language. The inability to write the statement, however, does not exclude one from being a literate." (1)

Table 4 gives the percentage of literacy in 1961 for the total population, population over five years of age, and population by sex.

A vast majority of the people of East Pakistan are illiterate. The literacy percentage among the males is over three times that among the females. A higher percentage of the urban population are literate than of the rural. About one-ninth of the total literates live in urban areas.

Table 4. Percentage of literacy by sex and age in East Pakistan, 1961 census

Percentage of total population			Percentage of population 5 years and over		
Both sexes	Males	Females	Both sexes	Males	Females
17.6	26.0	8.6	21.5	31.5	10.7

Source: Akhter, Economics of Pakistan, p. 39.

Table 5 gives the percentage of literacy, by sex, of urban and rural populations.

Table 5. Percentage of literacy, by sex, of urban and rural populations, 1961.

Urban			Rural		
Both sexes	Males	Females	Both sexes	Males	Females
45.7	54.8	31.9	20.2	29.9	9.7

Source: Akhter, Economics of Pakistan, p. 42.

Of the total urban population, 54.8 percent of the male and 31.9 percent of the female are literate. In the rural areas 29.9 percent of the male population and 9.7 percent of the female population are literate. The disparity of literacy is much higher among females than among males.

These figures show that urban people have more interest in education, as facilities for education through the fifth grade are almost equally available in rural and in urban areas. Separate schools are maintained for males and females in both the rural and urban areas. Educational costs in rural areas, however, are much less than those in urban areas. The per capita income is higher and the opportunities for obtaining positions for skilled workers are greater in urban areas. Higher education, therefore, is encouraged.

Since rural people tend to move to urban areas when they become educated (1), and since the increase in urbanization of rural populations was only 0.8 percent in the period from 1951 through 1961, the indication is that education is progressing very slowly in rural areas.

Table 6 classifies literates according to educational levels.

Table 6. Distribution of literates according to educational levels, 1961

Type of education	Percentage of total literate population	Female literates as percentage of male literates
Without formal education*	16.2	33.7
Primary school (Grades 1-5)	63.5	38.2
Secondary school	16.5	11.8
High school graduates	2.8	5.5
Junior college	0.6	6.0
College graduates	0.3	4.4
Advanced degrees	0.1	4.9
Parochial (oriented)	0.2	1.4

* Formal education is education received through attendance at an accredited school.

Source: Akhter, Economics of Pakistan, p. 47.

The table shows that over 16.2 percent of the total literates have had no formal education. Of the total population classed as literate, 63.5 percent, or almost 2 out of every 3 have only a primary school, or fifth grade, education. Education to this level is free. Beyond that, owing to the expense of further education, the number attending school is small. The proportion of females who continue in school is much smaller than that of males. The reasons for this difference are the inferior role of females in the society, social customs which do not approve of women working outside the home, and the lack of employment opportunities.

Age distribution

Table 7 gives the age distribution of the population of East Pakistan in the form of percentages.

Table 7. Age distribution of male and female population, by age, in East Pakistan

Age	Males		Females		Total of both	
	1951	1961	1951	1961	1951	1961
	percentage		percentage		percentage	
0 - 9	38.35	35.86	30.69	38.16	29.47	35.97
10 - 14	13.47	9.91	11.70	8.32	12.63	9.14
15 - 19	9.40	7.29	10.58	8.10	9.96	7.68
20 - 24	7.81	6.92	8.81	8.12	8.29	7.50
25 - 44	25.86	24.70	25.35	24.13	25.62	24.42
45 - 59	10.44	9.77	8.70	8.32	9.61	9.07
60 & over	4.60	5.55	4.17	4.86	4.43	5.22

Source: Pakistan census, 1961, Bulletin 3.

The number of children of both sexes to the age of 9 years showed an increase of 7.7 percent in the period between 1951 and 1961. This percentage is markedly higher than those of several other countries.

Table 8 shows the percentage of the total population under 10 years of age in East Pakistan and several other countries in 1961.

Table 8. Percentage of total population under 10 years of age in East Pakistan and several other countries

Country	Percentage of total population
East Pakistan	36.97
Malaya	33.78
Iran	33.00
West Pakistan	32.78
Turkey	29.00
Thailand	29.00
United States of America	22.00
England and Wales	15.00

Source: Pakistan census, 1961, Bulletin 3.

The working age group, 10-59 years of age, constituted 57.8 percent of the total population in 1961, as compared with 66.1 percent in 1951, but the absolute number increased by about one-tenth. In 1961 the percentage and total number of people over 60 increased over that of 1951. When the old and children are considered together

as dependents of the working age group, the degree of dependency¹ is increased from 34.9 to 42.2 percent of the total for the decade.

The labor force

Table 9 shows that the civilian labor force forms a comparatively small (30.7 percent) proportion of the total population. It can be seen that 54 percent of the male total and 5 percent of the female total populations are in the civilian labor force (5). The overwhelming majority of the labor force is in agriculture. The high percentage of dependency would be alleviated if the social attitude which prevents females from working outside the home could be changed, and if more educated women would make use of their skills and knowledge for the general welfare.

The low level of education and the high percentage of unemployed indicate the prevalence of unskilled labor. With regard to the qualitative aspects of the labor force, statistics are not available. On the whole, availability of technical skill in the country is extremely meager (1).

Apart from the lack of technical skills, other factors are responsible for the low capacity of workers. The diet of the typical worker is inadequate in quantity and quality, which leads to under-nourishment and low vitality. Poor housing, unsanitary living

¹ In East Pakistan, most persons of 60 years or more are completely dependent, owing to both physical and institutional factors. Dependents can be defined as persons who are not supporting themselves by their own labor.

Table 9. Distribution of total population by economic activities in 1951

Nature of activity	Number (millions)	Percentage
Agricultural	10.7	25.6
Non-agricultural	2.2	5.1
Total civilian labor force	12.9	30.7
Self-supporting but not in civilian labor force (military)	0.1	0.3
Dependents*	28.9	69.0

* Dependents include children, women, unemployed, and aged above 59 years old, who do not earn their own living.

Source: Government of Pakistan, Statistical book of Pakistan, 1965, p. 44.

conditions, high incidence of disease, and lack of medical care all directly affect the working capacity. In addition, the general social environment does not encourage independence and initiative, nor does it promote cooperative effort. Illiteracy leaves the mind uncultivated and unreceptive to new ideas.

Population and Economic Development

Population growth would not be a major problem if it occurred along with rapid economic and social development, but when the major objective is the achievement of economic growth, population growth

can be a great obstacle.

In order to bring about economic improvement in the country, enough investment should be made in agriculture, for irrigation, flood control, implements, and storage and transportation facilities, and in industry to increase the employment and total production.

High birth rates create children who contribute little to production yet consume food and other commodities. In low income families with large numbers of children it is impossible to save in order to make capital for any productive function.

High fertility can depress private savings in two ways: 1) by reducing the volume of savings by individual families when such savings are an important component of the national total, 2) by increasing the proportion of national income that must accrue to non-savers if standards of consumption play any part in determining the earnings of low income families. (10, p. 130)

A high increase in population reduces opportunity for a government to raise funds and increases the need for expenditure of available funds for education, housing, and various social services (14).

In a country with a constant population, it is necessary only to replace the equipment which is worn out in order to see that each generation is as well provided with tools of production as the preceding one. Where the population is growing, an additional investment is required to maintain the same average amount of equipment per worker. The faster the population grows the faster the investment must increase to keep up a given level of per capita production.

It has been estimated that an underdeveloped country with its population increasing at one percent per year must invest from 2 to 5 percent of its national income in order to keep a constant average amount of working equipment per worker. If the population increases at 2 1/2 percent per year, from 5 to 12 1/2 percent of the national income will be absorbed in such investments. It is not easy for any poor country to save such a large proportion of its income; but those where population is now growing most rapidly must save and invest still more if they are to reach a higher living standard. The difficulty is not confined to densely populated, resource-poor countries. It exists also where there is an abundance of land and other natural resources not being used for lack of the necessary capital or working equipment.(14, p. 6)

The country with about a 2.5 percent rate of annual population growth should save and invest about 8 percent of the national income to maintain its economy from declining. At present, nearly 50 percent of the capital for Pakistan's Five Year Development Plan is received from other countries in one form or another. In the absence of funds from foreign countries any development plan would be difficult. During the last Five Year Plan period, from mid-1960 to mid-1965, the increase in per capita income was about 12 percent, and the increase in population during the same period was approximately 11 percent (3). Even though goals of the development plan were attained, the standard of living remained the same.

If East Pakistan is compelled to continue to employ 78 percent of her labor force in agriculture, the increasing numbers employed will mean smaller average holdings for each family and person. The

average holding today is 3.5 acres of farm land per farm family. The average farm family consists of six members.

Any country in its early stages of development uses some of its increasing labor force for employment in extractive industries. If the agricultural land is already densely settled, as in East Pakistan, a greater hardship or barrier to increasing incomes is created than is the case in a less densely settled country. Additional capital for the larger labor force is essential, but population growth retards the increase in capital (12).

The rapid growth of the labor force adds greatly to the difficulty of achieving satisfactory employment goals. The barrier to more adequate employment opportunity is not primarily the lack of sufficient want, but of insufficient productive equipment and resources for labor to work with, compounded by the lack of education and training on the part of the labor force itself.

A reduction in the birth rate would have the immediate effect of minimizing the burden of child dependency without any major effect on the labor force. After about two decades the lower birth rate would begin to effect a reduction in the rate of growth of the labor force. After about forty years and onward, lower birth rates would result in a decline in the total population.

The age distribution effect of reduced fertility operates to produce during the past generation a larger total national product than would result if fertility had not been reduced. The greater rise in total output results from the fact that the same numbers of producers... is accompanied by a smaller number of consumers. The smaller number of consumers decreases the fraction of national output that must be allocated to current consumption, and thus promotes the mobilization of resources for economic growth. (10, p. 135)

If the rate of population increase in East Pakistan is reduced by 50 percent, the annual rate of growth will be over 1 percent. The 1 percent rate of growth will be high for East Pakistan in her present situation. Even at 1 percent increase, her 51,000,000 population will double in 69 years. For a 1 percent increase in population the necessary investment will be at least 3 percent of the national income to stop the decline of the standard of living. In the present situation it is difficult to invest more than 4 percent of the national income. For this reason more than 50 percent reduction of the population growth is necessary to begin suitable economic growth.

Population reduction would mean the improvement of the level of education at the existing expense, less expenditure for housing and other social services, and would thus increase savings and taxes for investment in immediately productive functions. In addition, as a result of higher per capita income and consumption, output per unit of labor is expected to be increased.

The population density that would result from a 50 percent reduction in fertility in the next 25 years would in almost every underdeveloped area be at least adequate for the efficient exploitation of the resources available. (10, p. 136)

The present high population density in East Pakistan has aggravated the economic situation. Even with a 50 percent reduction in birth rates, the population will grow to an excessive number during the next two or three generations.

Industrialization and enlargement of the commercial sectors of the economy are essential for successful economic development, especially when land for extension of cultivation is limited (14).

By producing manufactured goods and trading them abroad for food, poverty can be overcome. When this aspect of the economy has been dealt with, a part of the labor force can be employed in the manufacture and processing of available and imported raw materials for growth of the economy. In order to sell manufactured goods abroad, East Pakistan must find means of producing high quality goods efficiently and cheaply. The goods must compete with those of other nations that already possess highly developed industrial plants, efficient labor forces, and established markets. By developing new uses for products which are being exported raw and those that have limited uses a great opportunity for industry and employment can be exploited. Processing industries, such as canning and preserving of foodstuffs can open good markets for employment and help in food shortages. The

absence of proper storage and preservation of foods causes great domestic waste.

Craftsmanship and cottage industries have immense promise. At present the hand loom for textile weaving has proved its potentiality in competing in the open market.

Skilled and able workers are scarce, and the low level of education is a hindrance to rapid training and adjustment of workers.

Saving and investment may be increased by adopting appropriate financial policies. Fostering cooperative attitudes among people can contribute greatly to the formation of capital and the development of industry. Cooperative societies can be organized for a vast majority of purposes and can play a significant and effective role. Some equipment can be purchased with the help of foreign aid and loans. In the process of development new industries can attract foreign investment.

Population policy of the Government of Pakistan

During the mid-1950's, economists within the Planning Commission of Pakistan were interested in and concerned with the impact of population growth on the economic development of Pakistan. In February, 1958, a special meeting of various interested government and social groups was held to discuss the subject of family planning. Subsequently, the Government took a more vigorous stand on the population problem.

In 1960, the population policy of the Government was stated by the Director of Health as follows:

The Government of Pakistan has recognized the challenge of increasing population pressure in the country and the evil effects of uncontrolled childbirth on maternal and child health, domestic prosperity and national economic development. The Government has, therefore, taken a bold and clear decision in favor of family planning and has accordingly provided a substantial sum of rupees, 30.5 millions (equivalent of little more than 6 million U. S. dollars), for expenditure towards this purpose during the Second Five Year Plan period, 1960-65. A family planning scheme to be operated throughout the entire country during this period and beyond has now been prepared. The aim is to encourage parents to exercise birth control entirely on a voluntary basis with a view to:

- 1) Spacing of children at suitable intervals to ensure maternal and child health;
- 2) Helping parents to limit the number of children so as to ensure good and healthy upbringing within the family means and thus ensure domestic prosperity;
- 3) Controlling population growth in relation to available and potential resources of Pakistan. . . .

. . . A family planning scheme to be operated throughout the entire country has now been prepared with the following objectives:

- 1) To improve the health of mother, children and family.
- 2) To check the rate of population growth through voluntary participation of the people.
- 3) To improve the socio-economic condition of the people and thereby of the nation.
- 4) To provide wholesome information to the people on the necessity and feasibility of family planning.
- 5) To reduce the number of marital pregnancies terminating in abortions.
- 6) To make people family-minded and to help them understand the real value of family life, its responsibilities and obligations.
- 7) To provide training in techniques and information on the purpose and philosophy of family planning to the medical and nursing personnel of the country, to enable them to render service to the people in their respective areas.

8) To orientate and educate the Social Welfare, Village Aid, and Basic Democracies' workers about the ideology of family planning so that they might in turn create a wholesome awareness amongst the masses they serve and whenever possible render service in this connection (11, p. 62).

The Second Five Year Plan allocates 30.5 million rupees to family planning. The total budget for Pakistan during the Plan period is 19,000 million rupees, of which 400 million are for health. Out of this 400 million rupees 30.5 million are for family planning (7). Thus, the family planning budget is 305 million rupees, or 7.6 percent of the health budget. By way of comparison, the malaria eradication program has been given a budget of 55.98 million rupees during the same period and tuberculosis control has been given a budget of 19.82 million rupees.

Because of the importance of the program a much greater amount of money should have been allocated to family planning.

Attitude of population toward family planning

In the past, resistance of the people to family planning has been exaggerated. People are not so hostile to family planning as they are ignorant of effective techniques.

In a recent sample survey conducted by the Family Planning Association, in 20 separate localities of low income groups in West Pakistan, it was found that 63.2 percent of the women were in favor of birth control, 10.2 percent were against birth control, and 26.6 percent

did not require contraception for various reasons.

In the report of a two-year population control research program in a rural area in Comilla, East Pakistan, in 1964, the observation is made that

Among the women of 30 years marital experience the average number of pregnancies is 6 and the number of living children 3.3, implying an almost 50 percent conception wastage for all periods. It was found that 65 percent of the couples of all ages do not wish to have more children than they have, of which 82 percent cited "difficult to maintain" as the reason for not wanting more children. On the question of religious beliefs it was observed that nearly 66 percent of the men and 92 percent of the women reportedly would practice measures of birth control. (11, p. 80)

The conclusion may be drawn that

We feel that in spite of all that may have been said against the acceptability of the family planning procedures a vast majority of the population is willing to take to conception control provided the availability could be suitably adjusted to their circumstances.¹

The question is, How can the problem best be approached?

At present, devices must be given free to everyone, even those in the remotest parts of the country. Because the number of clinics is limited and because they are so located that they are not

¹ Family Planning Association of Pakistan, Karachi. A preliminary survey report on family planning attitudes. 1964. p. 7.

accessible to a large part of the population, the program of family limitation has not advanced as well as hoped for. Attendance, however, has been good. During the year 1961, the total number of visits in East Pakistan was 107,000 (7).

The number of clinics is extremely small, 575 in East Pakistan at the beginning of 1963, in relation to the total population, and the importance of the program. Much greater effort must be expended by the Government to attain success.

SUMMARY AND CONCLUSIONS

The population density in East Pakistan is 922 per square mile, with a rate of increase of 2.2 percent per year. The economy is almost completely dependent on agriculture. Current food production is inadequate in both quantity and quality. Starvation and malnutrition are prevalent throughout the country.

Crop area per capita is 0.51 acre, and opportunity for further extension is limited. Development of other sectors of the economy is limited, therefore the population pressure is almost entirely on agriculture.

Social attitudes and customs establish the status of women as inferior. As a result the number of females is lower than that of males in the total population.

General literacy is very low, and the number of people educated beyond the fifth grade is small. Comparatively, the urban population is more literate than the rural, and the number of males who are literate is three times that of the females.

Of the total population, 69 percent are dependent for their livelihood on the other 31 percent. The quality and skill of labor are poor. The country seriously lacks technically skilled and trained workers.

The rapid growth of the population at the existing subsistence level of living has created a great obstacle for any economic development.

The present level of production can hardly support the present level of population; any increase in the population will surely intensify the problem of getting food and other requirements. Due to the acute shortage of capital, industrial development is very slow.

The Government of Pakistan has developed a good plan of population control. Its practical application is not adequate in relation to the problem. The general attitude of the people is favorable to birth control and family planning. Under the circumstances, an adequate program should be vigorously undertaken. The target of birth control should be fixed at more than 50 percent of the present rate.

RECOMMENDATIONS

If a proper approach to limitation of births to coincide with the economy of the country is not adopted, nature will take its own course, and, like any other animal group, the population will be subjected to the ecological laws which maintain a balance between population and other resources. This course will definitely lead to untold suffering and misery.

Increase in mortality rate is obviously unhumanitarian. Apart from being inhuman, it is self-contradictory. Relatively high death rates, particularly among children, will act as serious inhibiting factors for planned parenthood. In addition, high mortality will detract from the economy. The emotional factor involved is that people become fatalistic and thereby lose all incentive to work toward the future.

Migration would be, if there were opportunity for it, only a temporary solution. Desirable land for settlement has been almost completely populated. Migration to West Pakistan failed for social and climatic reasons. To migrate to other countries, people must be literate, educated, and skilled, and most people who wish to migrate lack those qualities.

Industrialization will eventually reduce the rate of growth of the population. In its initial stages, however, the rate of growth may

not decrease for a time because of the improved income and attendant rise in standard of living.

Birth control, family planning, planned parenthood, and family limitation have become subjects for discussion. The essential requisite to their practice is education.

Widespread dissemination of family planning information can be accomplished by increasing literacy. An increased percentage of literacy will significantly increase the awareness of the populace of the problem and produce greater success in reducing the birth rate.

Since East Pakistan has no social security system, and since children are the only source of economic security for people in their old age, to discourage parents from having many children would necessitate a guarantee to some form of old age support. In a rural society children take their place early as producers of labor, a practice which creates a desire among farmers to have many children. Compulsory formal education could keep the children in school, making it impossible for them to remain at home and help their parents with the farm work, thereby reducing the desire for many children.

Child mortality rates have only recently been reduced. Most common people still have the attitude that only a few out of many will grow to adulthood. By a vigorous campaign they must be informed that infant mortality has decreased.

Economic incentives and social recognition for families practicing birth control would be a source of encouragement for other families to

practice it.

A tax could be levied on parents for each child over a specific number, say 2, to discourage the practice of bringing more children into the world than can be provided for by themselves or the society in which they live.

Encouragement of attendance at birth control meetings of all parents who have 2 or more children and voluntary sterilization for the parents of 4 children should be instituted.

Sterilization of beggars, incapables, undesirables and inheritable disease should be adopted.

Education toward a radical change in existing social behavior and customs to give women a better role socially and economically should be adopted.

Highest priority should be given to the development and distribution of cheap, safe, simple, acceptable, and effective contraceptives that can be used by all people.

A family planning program should be taught and publicized by all organizations and institutions in the country. A slogan should be created which can be used for publicity and propaganda purposes. A vigorous educational program must be launched, informing the people that the problem exists, that it can be solved, and giving them information on how it can be solved.

Although limiting the size of families would alleviate a part of the economic problem in East Pakistan, other steps must also be taken.

Progress must be made in diversification of endeavor of the existing population. Laborers must have better tools, methods must be improved, and cooperative effort must become more widespread.

Since the problem must be met by the young people of Pakistan, a Peace Corps type of endeavor by young people educated in advanced countries, to give all of the people some benefit from the education they have received would do much toward uplifting the people that are living at a subsistence level.

Public health programs to control communicable diseases would be helpful to the general well-being.

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