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Economic Growth In Bangladesh -
The Case For Broad-Based Agricultural Development

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Section I

The Broad Perspective and Agricultural Model

Economic Growth in Bangladesh -

The Case for Broad-Based Agricultural Development

Preface

The initial purpose of this paper is to provide the United States Agency for International Development with a rationale for its aid to Bangladesh and for the form that this aid is to take. Our perspective is developed from the theoretical to specific policy and project proposals through a line of reasoning we hope the reader will find persuasive. This approach necessitates a paper that is broad and wide-ranging and is therefore best addressed to all aid practitioners interested in Bangladesh.

We undertake this task with a good deal of trepidation because of the severe difficulties now facing the country and for the lack of any collective knowledge that can guide our argument - for this paper is essentially an argument. While a great deal of thought has been given to our assumptions and line of reasoning, we recognize that we enter a highly subjective realm. There are as many views on development as there are contending interests and authorities. Suffice it to say that this paper represents the present state of our views on development possibilities in Bangladesh and is not a final or even firm position. We remain eager to push our thinking beyond the views discussed in this draft.

Our knowledge of the development problems and potentials of Bangladesh has benefited greatly from many wide-ranging discussions with government and donor officials in Dacca. We have also benefited from discussions with the many visiting foreign development missions. We regret that there has not been time to discuss this draft with government officials, with other donors, and with the paper's principal focus - representatives of rural Bangladesh. This shortcoming will not characterize later editions of this draft.

We hope this paper will be of value to the reader as a source of ideas on development, even if we may not agree on the

overall perspective. For AID, this is a useful paper as it, in our view, gives reason and substance to our Agency's new priorities on the improved welfare of the poor and on population control.

Many look upon the future of Bangladesh with pessimism, even alarm. Three years of Independence have forced recognition of the many problems facing this country. An effective strategy for achieving Five Year Plan goals of production, distribution and national self-reliance remains elusive. The difficulties of the moment must not prevent the realization of the country's development potential.

Overview

Let us define the development problem as we see it in Bangladesh: Improved individual welfare is the goal. Better the economic participation of the many than riches for the few. We will make the case that broad participation is consistent with and necessary for increased production. Development strategies must be efficient because of the large and rapidly growing population and the lack of financial resources. Improved welfare is to be achieved by popular access to expanding productive enterprises. Population control is a vital component of this strategy to prevent the dissipation of hard-won improvements in individual welfare.

We start this paper by reviewing the "facts" of Bangladesh as we see them: those conditions relevant to development that define the range of problems that must be faced and limit the options and resources that are available. In Chapter 2, we review the economic situation and outline the Government's development plans. To give perspective to future development possibilities, in Chapter 3 we briefly review some of the principal biases and themes of past development strategies, both domestic and foreign. In the fourth chapter, we present a broad-based agricultural development model. These first four chapters (Section I) present a model - an ideal. We start by positing that the new seeds technology holds promise for stimulating growth linkages of several types that can effect development for the rural population. We qualify this theoretical model in many ways in order to ensure that its theoretical potential can be translated into realistic sector priorities. In Section II, specific sector strategies and programs are delineated for agriculture, population and education to give further realism to our argument. Our agricultural strategy, Chapter 5, emphasizes broad participation in the new seeds technology and is complemented by an expanded Rural Works Program and focus on market town growth. The need for land reform is examined. In Chapter 6, we emphasize a dual population control strategy: to ensure that those who wish to control their family size can do so, and, more broadly, to ensure the wide acceptance of the small family norm. Our education strategy, Chapter 7, proposes support for the Five Year Plan's reoriented formal and non-formal educational objectives so that the fulfillment of individual aspirations will more clearly contribute to national development. For both improved nutrition and health, emphasis is placed on low-cost, widely-available solutions. The body of the paper does not address the severe resource and food problems that are now facing the Government

though these and other aspects of development are touched on in a appendices.

This paper can be described in terms of development themes instead of a sectoral format. Efforts to improve income distribution pervade our discussion on population, employment, land reform, rural participation, information systems and food. In this sense the paper is artificially organized for the theoretical discussions of these themes are not immediately followed by their practical implications. It became abundantly clear in the process of writing this paper that, in our efforts to design projects to improve income distribution, we must look to the Bangladesh Government for policy initiatives and direction.

As our suggested project ideas overlap a great deal with the Government's present strategies, there are innumerable areas for fruitful assistance. While implementation problems are serious, and make it difficult to engage in some projects, we can conclude that these problems do not dissuade us from focusing on improving rural incomes or population control. One can raise a more fundamental question however: Are the dynamics of population growth, pressing on scarce resources, so severe that non-revolutionary development solutions are ruled out? The reader will find that this question, never properly answered, follows him throughout this paper.

Chapter 1

Development Limitations and Opportunities

For 25 years, this region was a portion of another region, and before that, yet another. An independent Bangladesh now stands alone. Images of golden paddy and jute harvests have given way to the reality of a devastating cyclone and millions of hungry people. The massive poverty remains, and the frequency of natural calamities is well-known. After Independence prices skyrocketed as basic commodity supplies fell. Conditions previously disguised by the statistical averaging of a formerly united country now have to be squarely faced. A combination of internal and external factors have brought the country to bankruptcy. The colonial days of Sonar (Golden) Bangla have come to an end, and with the "colonial" has gone the "Sonar" - a point that will be elaborated upon in the next chapter.

Limitations

The declining death rate during the 30's and 40's and the subsequent population explosion have finally caught up with the nation's capacity to handle its problems. The material content of rural life is stagnating at a subsistence - near-famine level that leaves no leeway for further erosion. Unless drastic measures are taken, twice the present population will be existing on a similar resource base in 25 years. No other nation faces this Malthusian reality so immediately, with such a large population, and with so few resources.

The term "population crisis" and similar phrases have become so overworked in recent years that the reader is numbed to their meaning. Let us try to be brief and succinct. What is this population problem, and why is it a problem? Each year 2 1/4 million more people are absorbed in Bangladesh. The birth and death rates, and accompanying age structure, have changed to place absolutely and relatively more people in "dependent", non-productive age groups, and yet because of this structure,

the number of persons entering the labor force is increasing at a rate of 4 to 4 1/2% a year. The experience of now developed countries would indicate that this doubling of the labor force in only 15 years is the road to prosperity. However, the developed countries had tremendous advantages of low initial population densities, and in many cases, rich natural resource bases. Bangladesh - already the most densely populated country in the world - enjoys neither of these advantages, which made rapid labor force growth something to be encouraged rather than checked. Moreover, the flow of foreign resources is proving to be a meager substitute for an expanding frontier and vast natural wealth. The energy crisis is making many developing countries realize how completely vulnerable their development efforts are to any deterioration in their terms of trade and aid flow. Though it is apparent Bangladesh must find answers to its development problems within its own boundaries, prospects are indeed dim that additional natural resources (except for natural gas and perhaps oil), or imported technologies, will be acquired at rates sufficiently rapid to improve per capita income. (Per capita income is used here in its broad popular sense and not as a statistical disguise for highly inequitable distributions.) Nevertheless improving the quality of material life, which takes organization and resources, is an all pervading social and individual desire. Hence the problem. If the country were blessed with limitless resources or dedicated to non-material aspirations, then the resource problem would be lessened; or if zero population growth were a fact, improvements in per capita income could be achieved with relative ease. There is no escaping the basic dilemma - quantity of resources divided by numbers of people is the broad index to the quality of life. No amount of rhetorical footwork can alter the arithmetic. Recasting the nation's development plans in terms of the public cost of increasing per capita income, either by investment in resources and technologies, or in population control, would reveal options that cannot long be ignored.

Opportunities

Bangladesh does have resources which can and must be effectively exploited. The country's existing and future resources remain the ones that gave this region its name - Sonar Bangla - golden harvests of paddy and jute, assured by ample labor, water and a year round growing season. Natural gas and oil, basic ingredients for agricultural modernization may one day overshadow jute's contribution to foreign exchange earnings. Export and

basic consumer goods industries have been established. Despite a double depletion of leadership - at Partition and again at Independence - the former provincial Government is accepting the challenge required of a national Government. The country is socially cohesive and is unified by a sophisticated rural administrative structure - a vital asset if development is to be effected for twice the country's population in 25 years. But the one remaining resource, which remains an unknown, is organization - the capacity to vitalize the skills and will of the people. Resources, whether of domestic or foreign origin, do not automatically translate themselves into production and improved welfare for the people as a whole without concerted and coordinated efforts. In fact, historic experience indicates that ample resources may permit governments to delay the hard decisions. It is our thesis that the development strategy outlined in this paper can resolve the dilemma presented by the population - resource equation within the Government's stated Five Year Plan objectives of increased production, improved income distribution and national self-reliance, provided the development priorities and political will are brought to bear on the task. This point cannot be overemphasized. "One should never underestimate the importance of adopting the right policies for the progress of developing countries. It bears remembering that many countries have had even more outside assistance than Taiwan or Korea without achieving the same improvements in livelihood for the poorer half of their people. The cumulative total of \$150 per capita in economic aid that Taiwan received between 1950 and 1965 is equal to Venezuela's per capita earnings from petroleum exports over a period of only seven months, and equal to Chile's per capita earnings from mineral exports in just eighteen months. Yet Taiwan, like Korea in the early 1960s, Puerto Rico in the 1950s, and parts of India and Pakistan (the two Punjabs) in the mid-1960s - did not begin its spectacular performance until it had made a series of highly important policy changes: changes in its rural areas in the early 1950s, and in its industrial export sector in about 1960." (Hunter et al, "A New Development Strategy? Greater Equity, Faster Growth, and Smaller Families." Overseas Development Council, 1972.)

Chapter 2

Present Economic Indicators

A review of present indicators reveals the extent of the economic difficulties now facing the country. What is known about the economy in conventional macroeconomic terms describes only the urban-industrial sector and so a small minority of the population. Nonetheless this sector, including the central government, has a very great impact on the economy as a whole. All the same there is little way of quantitatively judging the economic condition of the rural majority. (A conventional economic analysis of the economy is not central to the development of our model and therefore we are brief. The reader is referred to recent Bank and I.M.F. reports from which we have drawn much of our data.)

The First Three Years

Even under the best of circumstances the Government of Bangladesh faces trying economic conditions. During the two decades preceding Independence real per capita income of \$60 barely kept pace with population growth. The annual flooding, shifting rivers, and frequent cyclonic storms, exact a heavy toll from human beings, agricultural production and erode infrastructure. The cyclone of November 1970, and the struggle culminating in Independence 13 months later, compounded these problems and left the land in a worse economic state than it has known since Partition. The Independence struggle has a well-known record of human suffering and destruction which need not be summarized here.

In the first 18 months of Independence the fledgling Government was provided with \$1.5 billion in foreign relief assistance to help rebuild the economy. Ports were cleared, bridges repaired and, despite a serious drought, famine was averted. Three years after Independence the Government is still dealing with the more intractable problems of shortages of all kinds, price inflation, a poor law and order situation, and the

recovery of the industrial sector. Industry is still plagued by labor trouble, power shortages, and the lack of spare parts and raw materials. Revenue and foreign exchange shortfalls have become all the more serious for unexpected expenditure and import prices increases. At Independence the currency unit was changed from the rupee to the taka, and devalued 53% to be on a par with the Indian rupee. The official rate, like that of the Indian rupee, remains tied to the pound at taka 18.97 to one, or about Tk 7.9 to the dollar.

It is taking time for the Government to shift from its previous provincial perspective to one of national and developmental purpose. In sum it will take more time than originally thought to return the economy to its pre-Independence economic level and for real per capita income to recover from the 20% drop it suffered during this FY 71-74 period.

Popular dissatisfaction with the threefold price increase since FY 70 and continued consumer goods shortages contrast sharply with the price stability and relative abundance, at least in the cities, during the 1950s and 1960s. Despite genuine Bengali concerns over foreign exchange and private investment flight, not to mention West Pakistani control of major economic sectors, prices were stable and supplies of basic consumer goods adequate during the days of East Pakistan. One can argue that this economic stability in the former East Wing was "purchased" at the price inter alia of large food imports to supplement a relatively stagnant agriculture and a protected import market for West Wing goods. Furthermore, the burdens of the population explosion and urbanisation were yet to be felt. The country's citizens were quiet and its harvests were rich, but these belied the political and economic price being paid during this period.

As a reaction against earlier policies a "socialistic transformation" was promised during and following Independence. Industries abandoned by their West Pakistani owners were nationalized as were all other large enterprises. Ten public industrial sectors were established in March of 1972, which brought 85% of the total fixed assets of the previously private industrial sector under Government control. Nationalisation was also extended to banks, insurance companies, inland water transport and a portion of foreign trade, but did not go so far as to radically alter the pre-existing land tenure system. It is now clear from government budgets that many nationalized firms depend upon loans from nationalized banks and direct government subsidies, and yet they

are not contributing to revenue targets. In essence, they may represent a net drain on the resource-scarce economy of Bangladesh.

In January of 1973 the private investment regulations were announced. The private sector was limited to medium-and small-scale firms in a few clearly defined areas. Private ownership of fixed assets was limited to Tk 25 lakh (\$325 thousand)* with a ceiling of Tk 35 lakh (\$455 thousand) permitted by the reinvestment of profits. Foreign investment in the public sector was limited to 49% of the equity capital; foreign collaboration with private firms was allowed only with respect to licensing and patents. As a consequence of this policy, as well as other factors, the projected level of private domestic investment in the FY 74 Annual Development Plan achieved only one fifth of its target. Subsequent to this record, the investment ceiling was raised to Tk 3 crore (\$4 million) and foreign investment regulations were liberalized in early 1974. The ten year moratorium on further nationalizations was raised to fifteen. Further liberalizations of these regulations may occur. Labor unions were given free reign after Independence but this was later curtailed. (It is useful to keep the scale of the industrial sector in perspective - it represents 10% of a \$5.7 billion GDP (1972/73) and 2/3 of this 10% is agriculturally based.)

With Independence Bangladesh faced the problem of adjusting to a drastically altered set of trade relationships. West Pakistan supplies and markets were cut off and many managers and entrepreneurs fled. Bangladesh is still seeking new markets for half of its exports, which used to go to the West Wing, and sources for its raw materials; the reestablishment of trade relations with India is partially fulfilling these objectives. The import needs of Bangladesh are far in excess of its capacity to finance them. Before Independence imports to Bangladesh were \$600 million per year; the import target for FY 1975 tops \$1.4 billion. The slow reestablishment of private commercial ties, private investment restrictions, commodity inflation, and slow aid disbursement continue to plague the recovery of physical import targets. Export earnings have taken a sharp drop from their FY 70 benchmark level of \$540 million to a FY 73 level of \$460 million and an estimated FY 74 level of \$410 million. Paper, leather and tea exports have recovered but jute continues to face a wide range of problems (see the trade statistics in Table II-1). There is an export bonus of 30% on most exports except jute. The terms of trade have shifted drastically against Bangladesh; for the period of fiscal

* "Lakh" and "crore", one hundred thousand and ten million respectively, are used throughout this paper. One crore taka times a factor of 1.3 equals \$1.3 million at the official exchange rate of Tk 7.9 = \$1.00

Table II-1 Exports and Imports by Commodity

<u>Commodities</u>	Merchandise Imports (in millions of US \$)			
	<u>1973/74</u>		<u>1974/75</u>	
	<u>Estimated Actuals</u>		<u>Government Projections</u>	
	<u>Quantity</u>	<u>Value</u>	<u>Quantity</u>	<u>Value</u>
1. Foodgrains	1.60 m. tons	295.9	2.30 m. tons	506.0
2. Edible oil	0.049 m. tons	34.4	0.10 m. tons	72.4
3. Cotton textiles	59.00 m. yards	18.5	20.00 m. yards	6.3
4. Petroleum products	0.51 m. tons	48.6	0.36 m. tons	57.1
5. Crude petroleum	0.45 m. tons	38.6	1.20 m. tons	102.1
6. Raw cotton	0.26 m. bales	34.5	0.36 m. bales	90.0
7. Cotton yarn	0.06 m. bales	33.1	0.10 m. bales	57.7
8. Fertilizer	0.126 m. tons	23.8	0.221 m. tons	64.1
9. Cement	0.40 m. tons	18.0	0.672 m. tons	40.7
10. Capital goods	-	155.3	-	187.5
11. Misc. raw materials, intermediate goods & consumer goods		217.2	-	321.4
		<hr/>		<hr/>
		917.6		1,505.3

Export Receipts
(in millions of Takas)

	<u>1972/73</u> (actual)	<u>1973/74</u> (actual)	<u>1974/75</u> (projected)
1. Raw jute	127.5	106.3	125.0
2. Jute goods	193.8	158.8	225.0
3. Leather	13.8	10.0	20.6
4. Fish and fish products	5.0	12.6	11.9
5. Tea	-	12.6	15.0
6. Other	17.5	17.5	12.7
	<hr/>	<hr/>	<hr/>
	357.6	317.8	410.2

Sources: World Bank

1973 and 1974 import prices have doubled while export prices have only increased 10-20%. For these and other reasons the balance of payments deficit in FY 75 climbed to \$1.1 billion. This entire deficit is expected to be met by concessional aid. Prior to the end of FY 74 foreign exchange reserves had been drawn down below the minimum requirement to back the currency. As a consequence the Government continues to restrict severely the opening of new letters of credit.

The money supply was increased 110% between Independence and the end of FY 74 in an effort to finance the public sector. The State Bank has now restricted this growth and in June of 1974 the prime rate was raised from 5 to 8%. The domestic revenue effort remains extremely low by international standards. Domestic savings in FY 73 were zero if not negative. The World Bank projects an increase in the savings rate to only 4% by 1977-78. 80% of domestic revenues come from import duties, sales taxes and excises. The previously important land revenue tax has been drastically curtailed and private and cooperative income taxes remain unimportant. The low level of tax revenue is compounded by its lack of elasticity; revenue will not grow faster than, or even in proportion to, increases in economic activity.

The scarcity of locally produced goods and of imports has led to competition among sectors of the economy for available supplies. Government deficits and smuggling contribute to these inflational pressures. Private windfall profits inherent in an artificially low exchange rate and rationing make a bad situation worse. The previous system of production opportunities and private incentives has been disrupted; the new system of incentives is less closely tied to production.

Development Planning

The country's first Annual Development Plan (ADP) was released in mid 1972 to guide the reconstruction effort. In early 1973 the Government embarked on a major planning process to establish longer term goals and strategies to effect the socialistic transformation of the economy; this first Five Year Plan (FYP) was published in late 1973.

The Government's budgets are designed to provide a revenue surplus each year to help finance the development program. A combination of internal and external problems have increased domestic and foreign expenditures for establishment (or maintenance) costs and have reduced domestic revenues, with the consequence that projected revenue surpluses have turned negative and

aid assistance finances an ever increasing share of each Annual Plan (see Table II-2). In addition, Annual Plan targets, and more importantly those of the FYP itself, have been rendered unrealistic and unobtainable. The FY 75 ADP reflects these serious difficulties, and de facto represents a return to an annual planning horizon forced by circumstance. Nonetheless these Plans are worthy of review.

The country's first (FY 73) Annual Development Plan concentrated upon the remaining reconstruction task and set rice self-sufficiency as the central development goal. This Tk 501 crore (\$650 million) plan level was curtailed to Tk 463 crore and may have actually been lower. Aid disbursements during this fiscal year, projected to be Tk 375 crore (\$488 million), were actually Tk 195 crore (\$254 million). The FY 74 ADP, announced in June of the following year, recognized the necessity of continued reconstruction work and spelled out the sectoral development programs. Again a Plan target of Tk 525 crore (\$683 million), with an aid component of Tk 352 crore (\$458 million), was curtailed to a similar official level as that of the previous Plan. Project implementation has been slowed by all the economic difficulties previously mentioned, and the inability to design new projects to absorb available funds.

On November 27, 1973 the nation's first Five Year Plan for the years FY 1974 through FY 1978 was announced. A real per capita income growth rate of 2.5% was to be achieved by a public sector outlay of Tk 3,952 crore (\$5.1 billion), Tk 1,750 crore (\$2.3 billion or 45%) of which was to be foreign financed. This first longer range plan stressed the broad goals of increased production, improved income distribution and national self-reliance to be achieved by the adoption of the socialistic means as previously mentioned. Foodgrain self-sufficiency received primary emphasis followed by price stability, employment creation for the 800,000 new entrants to the labor force each year, and an industrial policy of import substitution and export promotion. Despite the FYP rhetoric emphasizing agriculture and employment creation, the annual development resource allocations emphasize industry (broadly defined) and what could be called publicly supplied consumer goods and services, during the period FY 72-74 (see Table II-3). The economy's overwhelming reliance upon agriculture is made clear however by the Plan's admission that even at the end of the FYP period, eighty percent of foreign exchange earnings will still come from jute. The revised ex post FY 75 ADP will in all likelihood show a marked shift towards rural investments because of the very tight foreign exchange situation and the expansion of

Table II-2 The Annual Budgets - FY 73 - FY 75, in taka millions

	1972/73				1973/74				1974/75	
	Budget	%	Revised	%	Budget	%	Revised	%	Budget	%
Revenue	<u>2,916</u>	<u>100.0</u>	<u>2,235</u>	<u>100.0</u>	<u>4,113^{a/}</u>	<u>100.0</u>	<u>3,794</u>	<u>100.0</u>	<u>5,594^{a/}</u>	<u>100.0</u>
Tax Revenue	<u>2,684</u>	<u>92.0</u>	<u>1,865</u>	<u>83.4</u>	<u>3,520</u>	<u>85.6</u>	<u>2,931</u>	<u>77.3</u>	<u>4,558</u>	<u>81.5</u>
Customs	1,280	43.8	697	31.2	1,540	37.4	1,262	33.3	1,975 ^{b/}	35.3
Excise	652	22.4	550	24.6	1,165	28.3	834	22.0	1,492	26.7
Sales	406	13.9	214	9.6	463	11.3	428	11.3	460	8.2
Income, Corporation & Agric Income	117	4.0	140	6.3	164	4.0	188	4.9	244	4.4
Others	230	7.9	264	11.7	188	4.6	219	5.8	387	6.9
Non-Tax Revenue	<u>231</u>	<u>8.0</u>	<u>370</u>	<u>16.6</u>	<u>593</u>	<u>14.4</u>	<u>863^{c/}</u>	<u>22.7</u>	<u>1,036^{c/}</u>	<u>18.5</u>
Nationalized Sector	150	5.1	191	8.5	280	6.8	170	4.5	167	3.0
Interest Receipts	3	0.1	7	0.3	233	5.7	241	6.3	350	6.2
Others	78	2.8	172	7.8	81	1.9	148	3.9	163	2.9
Railways	--	--	--	--	--	--	304	8.0	356	6.4
Current Expenditures	<u>2,184</u>	<u>100.0</u>	<u>2,035</u>	<u>100.0</u>	<u>2,953</u>	<u>100.0</u>	<u>4,605^{c/}</u>	<u>100.0</u>	<u>4,908^{c/}</u>	<u>100.0</u>
Revenue Collection	140	6.4	134	4.4	148	5.0	151	3.3	167	3.4
Defense	400	18.3	250	8.2	470	15.9	600	13.0	710	14.5
Civil Administration	690	31.6	879	29.0	1,042	35.3	1,189	25.8	1,143	23.3
Interest Payments	49	2.2	81	2.7	97	3.3	132	2.9	240	4.9
Social Sectors	557	25.5	571	18.8	726	24.5	777	16.9	1,007	20.5
Others (Inc. Contingencies)	349	16.0	337	11.1	470	15.9	457	9.9	680	13.8
Food Subsidy	0	0.0	783	25.8	0	0.0	963	20.9	600	12.2
Railways	--	--	--	--	--	--	336	7.3	361	7.4
Current Surplus (+) or Deficit (-)	<u>732</u>		<u>-800</u>		<u>1,160</u>		<u>-811</u>		<u>686</u>	
Development Expenditures^{d/}	<u>5,010</u>	<u>100.0</u>	<u>3,978</u>	<u>100.0</u>	<u>5,253</u>	<u>100.0</u>	<u>4,000^{e/}</u>	<u>100.0</u>	<u>5,250</u>	<u>100.0</u>
Agriculture, Rural Dev. & Water	1,792	35.8	1,350	33.9	1,600	30.5	2,362	34.0	1,715	32.7
Industries	366	7.3	294	7.4	790	15.0	453	11.3	710	13.5
Transport Communication & Power	1,431	28.5	1,157	29.1	1,678	31.9	1,408	35.2	1,685	32.1
Physical Planning & Housing ^{f/}	299	6.0	307	7.7	410	7.8	270	6.8	480	9.1
Social Sectors ^{g/}	1,122	22.4	870	21.9	775	14.8	507	12.7	660	12.6
Overall Deficit (-)	<u>-4,278</u>	<u>100.0</u>	<u>-4,778</u>	<u>100.0</u>	<u>-4,093</u>	<u>100.0</u>	<u>-4,811</u>	<u>100.0</u>	<u>-4,564</u>	<u>100.0</u>
Financed by:										
Capital Receipts (net)	-82	-1.9	-16	--	387	9.5	60	1.3	306 ^{h/}	6.7
Deficit Financing	610	14.3	1,611	31.0	186	4.5	1,771	36.8	318	7.0
Foreign Grants & Loans	3,750	87.6	3,183	69.0	3,520	86.0	2,980	61.9	3,940	86.3
of which:										
Food Aid	1,050	24.5	n.a.	--	630	15.4	750	15.6	1,040	22.8
Project Aid			n.a.	--	1,200	29.3	910	18.9	1,270	27.8
Non-Project Aid	2,700	63.1	n.a.	--	1,690	41.3	1,320	27.4	1,630	35.7

a/ Including net effect of new tax proposals of Tk. 239.9 m. in 1973/74 and Tk. 891.4 m. in 1974/75 (of which Tk. 510 m. is to be collected as a result of the recent imposition of the import license tax).

b/ The Railway budget has been moved to the Central Government Budget from 1974/75.

c/ The revised estimates for 1973/74 include the Railway receipts and payments, as in 1974/75 budget.

d/ Including Reconstruction and Rehabilitation expenditures for 1972/73 and 1973/74.

e/ Includes expenditures on Cyclone Reconstruction.

f/ Includes Health and Education.

g/ Calculated on the basis of an across the board shortfall of 14 percent.

h/ Food subsidy is to be paid for by Tk. 206 m. from domestic capital receipts and Tk. 394 m. from current revenue.

Source: Planning Commission, Ministry of Finance and National Board of Revenue.

Source: The World Bank

Table II-3 Annual Development Plans - Development and Reconstruction Expenditures, in crore rupees/takas

	FY 69 Revised	FY 70 Budget	FY 72 Revised	FY 73 Budget	FY 73 Revised	FY 74 Budget	FY 74 Revised	FY 75 Budget
Agriculture								
Agriculture	33.84	42.82	15.00	77.20	94.37	88.60	57.58	63.00
Rural Institutions	19.61	15.60	14.44	35.30	31.15	38.00	30.63	28.50
Water & Flood Control	30.09	29.00	7.95	62.90	31.48	33.40	69.65	80.00
Sub-Total	83.54	87.42	37.39	175.40	157.00	160.00	157.85	171.50
Industry								
Industry	39.14	37.62	5.31	36.60	34.21	79.04	52.15	71.00
Transportation & Communications	23.83	29.62	7.51	98.20	29.02	104.21	109.67	97.00
Power, Nat. Resource, Sci. Res.	51.80	49.50	4.27	44.90	105.44	63.61	53.67	71.50
Sub-Total			17.09	179.70	168.67	246.86	215.31	239.50
Public Consumer Goods and Services								
Phy. Plan. & Public Housing	13.38	16.16	2.60	19.90	25.81	27.04	23.35	34.00
Health, Family Planning	10.24	10.40	3.53	16.90	16.38	35.00	25.70	29.50
Soc. Welfare, Manpower	1.01	1.26	.63	4.20	1.91	4.63	2.35	3.50
Education & Training	16.12	17.42	7.40	25.10	22.34	37.82	30.70	33.00
Sub-Total			14.16	66.10	66.44	104.49	81.19	100.00
Cyclone Reconstruction Relief & Rehabilitation				10.00	10.00		8.00	11.00
				66.00	60.55			
Total	239.06	250.00	72.77	501.00	462.66	511.35	463.82	525.00
Population (January)	64.9	66.9	71.0	73.1	73.1	75.3	75.3	77.6
Per Capita ADP		37.4	10.3	68.5	63.3	67.9	61.6	67.7
Dacca-Middle Class Price Index (January)	100	100	145 (est.)	182	182	247	247	284 (May '74)
Real Per Capita ADP using above index		37.4	5.7	37.6	34.8	27.5	24.9	23.8
Construction price index (July)	100	100	135	135	135	224	224	330
Import price index			100	160	160	290	890	960

fertilizer imports and the start of a fertilizer plant. The Plan highlights the task of creating jobs for the nearly 800,000 entrants to the labor force each year but falls short of proposing realistic programs. (The magnitude of this task is addressed in Chapter 4.)

Foreign aid commitments have grown since Independence and have increased the non-food aid pipeline to \$700 million at the end of FY 74 (see Table II-4). Disbursements from this pipeline in FY 75 are estimated by the Bank to total \$369 million divided as follows: food, \$50 million; projects, \$159 million; and commodity aid, \$160 million. New aid from traditional donors, the Arabs, 2nd and 3rd Stand-by tranches from the IMF, and others will fill the remaining deficit of approximately \$600-700 million.

Since the FYP's publication as mentioned earlier, several factors have conspired to render its projected targets as unrealistic as earlier ADP targets have become. The FY 74 Annual Plan allocated Tk 511 crore to development but with the combination of project design and disbursement problems, commodity shortages, and revenue shortfalls, the Plan was reduced to Tk 400 crore. In terms of new development progress achieved, the Plan's achievements may even be less; because of revenue shortfalls we understand that development allocations have been used to finance maintenance costs. The FY 75 ADP all but admits as much (p. 184). During FY 74 the Government decided to spend upwards of \$100 million of its own foreign exchange for foodgrain purchase which had the added domestic subsidy burden equivalent of \$130 million. As a consequence foreign exchange holdings were below the Tk 60 crore minimum required to back the currency at the end of FY 74. In addition POL import prices have increased to add an additional \$100 million to the import bill, if annual energy use targets are to be met. Because imports are down and because of difficulties with the nationalized industries, two major sources of domestic revenues have been curtailed. Furthermore Government expenditures have risen unexpectedly because of the subsidy burden imposed by the difference between import and domestic prices for grains, fertilizers and other agricultural inputs, repatriation, military expenditures and the Wage Commission recommendations. As a consequence of all of these factors, the revenue surplus available from the administrative budget for the FY 74 ADP turned negative (as it did in FY 73). For these reasons the foreign aid contribution to the FY 74 ADP increased further (see Table II-2 and 3). All of these factors, some perfectly predictable, have brought the economy to the point of bankruptcy and have conspired to curtail development drastically. The impact on the availability of per capita developmental resources is readily apparent in Table II-3.

Table II-4 Foreign Assistance to Bangladesh, in million US\$ ^{a/}

Aid Commitments 1971-72	471
Disbursements 1971-72	120
Balance June 30, 1972	351
Aid Commitments 1972-73	480
Disbursements 1972-73	185
Balance June 30, 1973	646
Estimated Commitment 1973-74 ^{b/}	427
Suppliers' Credit ^{b/}	32
Total Commitments 1973/74 ^{b/}	459
Estimated Disbursements 1973-74 ^{b/}	405
Estimated Balance June 30, 1974 ^{b/}	700

a/ Excluding food, UNRCC/B Cash and Voluntary Agencies.

b/ IERD estimates.

Source: World Bank

The FY 75 ADP includes an extensive review of the previous year's record. Agriculture and manufacturing show improvement though production overall remains below the FY 70 benchmark level. Foodgrain production was 6% below the target; fertilizer distribution, 18% below target; and less than half of the targeted agricultural credit was distributed. The price of imported goods increased 65% and contributed to the national inflation rate of 40% in FY 74. Domestic revenues grew with improved import and production levels, but public expenditures outdistanced these gains. The FY 74 balance of payments deficits of \$455 million was met with aid totalling \$307 million and short-term borrowings of \$148 million.

The shortfalls in FY 74 have caused a serious loss of development momentum which the FY 75 readily acknowledges. The FY 75 ADP not only states that this loss can not be recovered, but it does not restate Five Year Plan goals and objectives. The Annual Plan projects a GDP growth rate of 5-6% based on a projected agricultural growth rate of 6% and an industrial growth rate of 10%. The resource shortfalls have forced changes in the character of development projects. The new Annual Plan spells out a strategy which emphasizes the completion of on-going, quick-yielding projects. Priority is to be given to foodgrain production; to the supply of agricultural inputs and to small irrigation schemes. The power sector is to concentrate on distribution; and the transportation sector, upon reconstruction and repair. New projects will not be undertaken unless they are shown to be of the utmost importance.

While the FY 75 ADP recognizes the seriousness of the economic situation, in our view, it does not represent a new development strategy or an alteration in basic administrative and market systems of allocation. The FYP perspective still prevails: industry and not agriculture is looked to as the principal source of foreign exchange earnings and savings; the public sector remains the provider of a wide range of heavily subsidized goods, and capital continues to be heavily subsidized with all the inherent implications this has for technological choice and development priorities. In Chapter 3, we will discuss possible origins of this urban-industrial perspective, and in following chapters we discuss theoretical and practical alternatives.

The Conditions of the Average Person

The foregoing discussion sheds little light on how the common man has weathered the last three years. Whether urban or rural, the condition of the population as a whole is probably not as

serious as the (extreme) inflation rate and scarcity of goods would indicate, as wages have risen for most economic groups. Their condition is nonetheless difficult; for the very poor, extremely difficult to the point of starvation. Those who are "in the economy" have been able to demand high wages, whether union members, rickshaw wallahs, day laborers or those in the innumerable services. Farmers and commercial people are partially protected by the increased value of their crops and goods. Those on fixed incomes, particularly salaried persons in the public and private sectors, have been hit hard. For poor urban slum dwellers and the rural landless or near landless the situation is extreme for these reasons and others. The urban poor have neither ration cards nor regular employment but must fend for themselves in the inflated market. The rural landless and small farmers carry the greatest burden because, to compound matters, Rural Works and Test Relief expenditures have been sharply curtailed; there is even evidence showing that the smaller farmers are being bought out. It is our impression that the poorer half of the population - wage laborers and those without full time employment - have suffered an absolute deterioration in their incomes, while those at the very top have improved both their relative and absolute positions since Independence. Contrary to Plan goals, the actual economic forces presently at work in the economy - urban as well as rural - are causing a further deterioration in the distribution of income. The present system works to make the rich richer and the poor poorer.

This discussion and the official data in Table II-3 make it clear that the maintenance of the present population consumed almost all available public resources. Present levels of foreign assistance, thought to contribute to improvements in per capita welfare by their very nature, are only helping to maintain the present standard of living. (Worse yet, donors may be unwitting sources of funding for an economy which exacerbates wealth distribution.) Recurring natural disasters make it extremely difficult for both the Government and donors to move from a relief to a developmental prospective. Continued appeals for ever more resources do not address the basic development problem. Population growth continues unabated, and three years of planning do not seem to have affected the situation. In a world of very tight resources, it appears necessary that alternative development strategies need to be considered which can more efficiently tackle the Plan's objectives of increased production, improved income distribution, and national self-reliance.

Chapter 3

Commentary on Agricultural Development Strategies

The Development Challenge

The combination of factors mentioned in the previous chapter are conspiring to prevent the Government from implementing its development programs. Each year the resource gap widens, development plans are curtailed, and yet a reorientation of the country's development strategy does not occur. The pressures to stay on the present development course are strong and may have their origins in two complementary Western traditions. First, developing countries are obviously interested in pursuing growth models (albeit ones that were developed ex post facto) that have led to such generous standards of living in several parts of the world. Donors and recipients alike continue to equate development with rapid industrialization. Many developing-country politicians and planners aspire to remake these industrial successes in their own socialistic image, and attempt to do so without recognizing either the resource conditions in their own countries or the preconditions in the developed countries that made their growth possible. Secondly, donors have been too quick to offer advice and assistance to finance the manifestations of this industrial-~~consumer~~ wealth rather than lay necessary groundwork. This may be in part because we donors, theoreticians and practitioners alike, have not fully appreciated the preconditions of our own "take-offs". Nonetheless Russia, China and India founded their industrial-oriented plans on weak agrarian bases; and have since had to make major investments in agriculture. The advantage of hindsight does not lessen the burdens of these costly reorientations. Bangladesh has the opportunity to learn from these mistakes; her man-resource base gives her few options.

We argue in this paper that all three of the Five Year Plan's socialistic objectives of increased production, improved income distribution and nation's self-reliance can be achieved - but only by treating agriculture as the primary developmental sector:

- Increased Production - The food and industrial crops needed to fuel the urban-industrial sector can only come from the seven million or so relatively small farms of Bangladesh. Rice and jute yields are higher on the more numerous smaller of these small farms as are cropping intensities (Master Survey of Agriculture - 1967/68). There are no farm estates and very few large farms by international standards. This present production potential has the added advantage of being in place and underutilized. Drawing on admittedly aggregated employment and development allocation figures in the FYP, it appears that a given investment in agriculture will generate four times as much output and six times as much employment as an equivalent investment in industry.

- Improved Income Distribution - Improved income distribution has to be achieved by employment created by either the expansion of economic activity or the altering of methods for efficiently organizing men and resources. In almost all economic enterprises, efficient technological choices exist which can create more jobs and at the same time maintain if not increase production. Resources do not exist to place the poor on welfare, nor can the country's present meager production be redistributed. Finding employment for millions of laborers clearly entails keeping people in rural areas and in agricultural production. The reasons are multiple. Ninety percent of the people are already in rural areas. As just stated the public cost per agricultural job created is about one sixth of the investment required of an industrial one, not to mention the added burden of urban services. (Within industry there is of course considerable variation among types and scales of firms.) If 800,000 new jobs are to be created each year, the cost of job creation becomes critical.

- Self-Reliance - The FYP budget acknowledges reliance upon foreign aid and subsequent events have caused this to increase. The FYP also acknowledges that at the end of the Plan period, 80% of foreign exchange earnings will still come from jute. Most of the remaining 20% is also related to agriculture. The fact that the Government spent a third of its foreign exchange earnings on grain imports in FY 74 further heightens this dependence on aid, and by implication on agriculture. Increased agricultural production will lead to foodgrain self-sufficiency and displace grain imports. The prospects for jute's recovery are not good but gas in the form of urea exports (and possibly oil) may one day close the trade deficit. For the foreseeable future however the country's heavy dependence upon aid will remain.

Western Theoretical Biases

A few aid theoreticians and practitioners have recognized the importance of agriculture to the development process and the significance of encouraging broad rural participation in this growth. However most developing countries with burgeoning populations and scant resources have tried to implement what were at the time the more popular theories of development. With the advantages of hindsight they now seem to be victims of theories and advice that allowed agriculture to be overlooked. A few examples of these are worth highlighting.

Most development theories are cast in terms of stages through which a pastoral-traditional country must pass to achieve the urban-industrial stage called "developed." Who is to say what Bangladesh will be like a hundred years hence? In the interim however modernization will have to mean life style aspirations other than those presently exemplified by the heavily urbanized and industrialized regions of western countries. The energy crisis has brought home the point that the capital intensity of this Western model can not be easily replicated. Continued efforts to close a resource gap inherent in such a model will simply lead to stagnation. Proponents of industrialization argue that the generation of increased production will reduce urban unemployment and draw laborers from agriculture, and, by way of increased revenues, enable the government to compensate those left out of growth processes. It is now clear that enough resources simply do not exist to generate jobs in this capital-intensive manner nor are sufficient revenues generated to finance compensatory programs. "Trickle down" theories of development have not worked; the rural and urban poor - the majority of the population - remain victims of GNP growth models.

- The Western urban-industrial model is an ex post consequence of a factor endowment that favored heavy capitalization per capita. Consequently modern (Western) economics is both a product and a victim of our labor-poor (in the sense of numbers) resource-rich countries. The antithesis of capitalism in this sense is therefore not socialism, but rather "labor-ism". (Popular ownership by fiat in developing countries is proving to be a poor substitute for broad participation in economic activity.) Economic pricing policies that are not responsible or responsive to the country's relative factor endowment can leave at least one factor unemployed; in the case of Bangladesh, millions of laborers.

- A third major consequence of our Western resource base is the perceived conflict between production and distribution as development objectives. It is a sad commentary on economics as a social science that this debate, which has great consequence for development theory and policy formulation, has taken decades to come to the theoretical and practical realization that they can be positively interrelated. The economist's proclivity for marginal analyses (which assume at least one scarce input) has obscured the basic issue. Every form of production contains its own distributive formula. What are the factors of production (land, labor, capital), how plentiful are they, and who benefits from their uses? Who purchases the final output? Income distribution is both a consequence and a cause of growth. For Bangladesh, we argue, the way to achieve both production and distributive goals is to ensure broad participation in agriculture (improved income distribution) and thereby increased production. (More will be said about this later in the next chapter.) All too often factor employment and the composition of the output reflect the preferences, namely labor. As a consequence production is capital-intensive, labor is underemployed and increases in production are costly to achieve.

In sum then, the inadvertent collusion of these three "biases" in the context of development theory has driven an artificial wedge between increased production and improvements in the distribution of income, and therefore between economic growth and human welfare.

Past Agricultural Strategies

As a consequence of these past theoretical perspectives, the role of agriculture in development models has been that of a residual - a supplier of food, labor and capital - to fuel urban-industrial growth. In the 1950's and continuing into the 1960's little attention was paid to the requirements of ensuring these agricultural surpluses, or to the effects of population growth on the ability of agriculture to contribute to industrial growth. It was assumed that agricultural production would grow to feed the cities and that industrial growth would generate needed employment as agricultural labor was displaced, as had been the case in developed countries. A logical extension of this perspective was the argument by a few economists that the food and cash crop requirements of the urban industrial sector should be grown in an "efficient" mechanized corporate agricultural subsector to guarantee the basic resources for development. The remaining rural population and land were to be left in a quasi-stagnant traditional

setting. This "bimodal" theory had its origins in the Mexican Ejido reform and the colonial plantation economics of Africa and Southeast Asia.

Most Western economists however are now of the theoretical mind that agricultural development should include the entire rural population for reasons of the efficient use of domestic factor endowments and improved income distribution, and so the growth of consumer demand and savings to stimulate urban industrial growth. Myrdal, Mellor, Dumont and many others are advocates of this "unimodal" approach.

In practice the agricultural program strategies of the 1950's and 60's have had difficulty effecting either production increases or improvements in income distribution. Whether treated as a leading or residual sector, these strategies are instructive. The experience in Bangladesh has been as varied as that in other countries.

- Communal farming had many advocates and most countries, including Bangladesh, have experimented with them in some form. The cooperative experience in general seems to have a major short-coming because it is difficult to sustain a high degree of community spirit from generation to generation. In cooperatives where no religious or political unifying raison d'etre exists, group responsibility for the myriad of required decisions and tasks dissolves into a state where no one is responsible. A communal farming cooperative in Comilla is afflicted with this problem and its harvests and profits are correspondingly low. In theory at least the production cooperative does achieve the distributive ideal as all members contribute and share in production.

- Community development programs have received considerable attention but as with communal farming, successes are few. In practice the community development philosophy has suffered because its tenets are poorly understood and inadequately implemented. Furthermore program communities have seldom been given significant resources, or new technologies, to increase agricultural production or physical infrastructure. Nor do these programs attempt to alter the basic hierarchy of village power. Possibly the basic underlying community development assumption has been weak; that given the existing resources and power structure, and a little outside help, villagers can improve their lives through coordinated work. As with the traditional farmer, whether viewed as lethargic and a-rational or hard working and risk taking, the traditional

village may have wrung the last benefit out of its existing resource base and organisational structure. (Economic inefficiencies in these rural circumstances would appear to exist only in the mind of the foreign researcher.) In essence, this bootstrap-ism, which does not add to or change the basic economic, and therefore political structure, of a village, does not appear to be a permanent self-sustaining vehicle for improving the welfare of poor villagers. East Pakistan's Village Aid Program of the early 1960's suffered from, and was abandoned for, these reasons; contact with individual villagers was insignificant for the lack of a resource and personnel commitment.

- Land reforms can be a radical way to redistribute economic and political power to the rural poor. Where reforms have been associated with the new seed technologies as in several East Asian countries an expansion of the economic franchise is greatly in evidence. More commonly however, as in Latin American and South Asian countries, land reforms have proven to be exercises in comparative statics as the new seed and supporting resources have not been available, or only a token amount of land actually changes hands.

Except for the breaking up of the Zamindar system of large revenue holdings soon after Partition, Bangladesh has not experienced any significant land reform. The Bangladesh Land Holding Order of 1972 reintroduced the individual holding ceiling of 100 bighas (33 1/3 acres, 1 bigha equals 1/3 of an acre) which made available about 600,000 acres, or 3% of all land for redistribution. (The ceiling had been raised from 100 bighas to 375 bighas in 1961.) The case can be made that a radical land reform is needed and that sufficient land could be redistributed to have an impact on the numbers of rural families that are presently landless. The available Master Survey data probably do not reflect the precise distribution pattern in the country, nor of course can they reflect the further shifts in land redistribution that have taken place since Independence. During this post Independence period, we suspect that the combined influences of large cash earnings by the urban and rural elites, and the drop of rural purchasing power of poor farmers, have conspired to worsen land distribution. Given an average farm size of only 2.5 acres, a five acre ceiling would make available upwards of 10 million acres - enough land for five million farm households on two acres of land apiece. It needs to be emphasized that as the country is already farmed in small individual fragments (no matter how many are added together to make up a farm) the disruption of agricultural production

inherent in such a reform would be lessened. As desirable as such a reform would be on distributive and production grounds (production because smaller farmers have both higher yields and higher cropping intensities than larger ones) it would appear much more important under present circumstances to address those factors that are causing a deterioration in land distribution. Over and above population pressure, urban and rural profits need to be channeled into more productive outlets than land purchases, and the purchasing power of the rural poor needs to be improved. Unless these problems can be addressed there is little point in recommending a radical reform. Subsequent to such efforts however the case can be made that a radical reform should be implemented as a component of a broader agricultural strategy. More will be said of this subject later in the paper.

- Since the 1960's, the adoption of high yielding varieties (HYV) has become the heart of rural development programs world wide with and without concomitant land reforms and community development programs. It is now axiomatic to say that agricultural modernization means new varieties of major crops and markedly increased supplies of modern inputs. This technological approach is now the Government's key to improved production in Bangladesh.

This technological shift in agricultural production functions is of singular importance, but it has overshadowed the institutional and distributive problems that not only remain, but were front and center of older rural development strategies. How rapidly can the new technological package be expanded to include middle and small farmers? This recently accepted development prescription is now creating a whole host of production related, but more importantly, distributive problems. Past rural institutional development strategies, aimed at changing the grass roots distribution of power and resources directly, have now given way to various types of input distribution-small farmer programs which rely on the indirect "trickle down" of the market mechanism to distribute the benefits of HYV. Because modern agricultural inputs are generally scarce, smaller farmers seldom benefit. This strategy admits of the power of the rural elite and contents itself with Plan admonitions that the pre-existing distribution of income will not further deteriorate with the introduction of HYV. Whether the introduction of the new seeds technology is a substitute for institutional reforms that directly insure broad access to the means of production is a key question that haunts this whole paper.

Chapter 4

An Agricultural Development Model

The foregoing introductory chapters strongly suggest that development priorities in Bangladesh need to be reordered if national planning objectives are to have any chance of achievement. The following chapters argue the case for both the broad participation of rural farmers and laborers in agricultural production and the use of processes thereby set in motion as the generators of economic growth for the country as a whole. This model draws heavily from the theoretical work by Mellor and Lele entitled "Growth Linkages of the New Foodgrain Technologies," (Cornell, 1972). Their agricultural model (with some modifications) is described in the first section of this chapter; following sections and chapters are devoted to practical considerations of the model's implementing. (The role of the macro-industrial sector vis-a-vis this model is left to Appendix A.)

The New Seeds Technology

This agricultural development model rests upon the new seeds technology and the complementarities that flow from it. The shift in the biological production function made possible by the new IARI locally adapted seed directly increases crop production, labor requirements, and so rural incomes. It must be emphasized that these production and employment increases are made possible by a production breakthrough which has specific characteristics. No more land is necessarily required but the use of more labor and particularly modern inputs is a pre-requisite. While modern mechanization can substitute for the additional labor required, except for irrigation, this is not occurring to any extent in Bangladesh. Nor are major alterations in existing developmental institutions required to enable the use of the new seed. In comparison to other technologies these seeds are neutral to scale, i.e., they are technically suitable for any size of farm (scale of operation). Despite these innate characteristics that provide for production and employment increases, this seed revolution is

not a growth process that can be taken for granted. Improving yields is a technical matter, but expanding these harvests nationwide requires political commitment to those institutions and policies required to ensure an expanded use of the new seed. The key to ensuring that the new seeds technology does generate widely-shared increases in production and employment depends on who produces the increased agricultural production, and who consumes it. This may seem like a simple matter but therein lies the heart of a long term strategy for national development.

The Model - Short and Long Term Perspectives

Bangladesh faces the very difficult challenge of increasing its agricultural production. This task is going to take a great deal of commitment and resources. At present, grain prices are very high, grain supplies are short, and maldistribution is serious. Much of this paper addresses these problems. Our theoretical model may not seem to be immediately relevant in this context, for it is predicated on conditions of growing grain supplies and falling grain prices; it emphasizes consumer demand and not grain production. These supply and price conditions will prevail in Bangladesh at some future time. Because the growth linkages and qualifications of this model have importance for the establishment of development priorities in Bangladesh today, particularly if per capita income growth is to be ensured, we feel this model has immediate relevance. We will first review the longer term importance of the model and then turn to its operative conditions in the context of setting short term priorities.

The Longer Term Perspective

A Bangladesh Government priority on foodgrain self-sufficiency does not in itself represent the fullest exploitation of agriculture's contribution to development. The new seeds technology can provide bumper crops, the grain price trend can fall for a lack of adequate growth in demand, and the Green Revolution can be "over" before a majority of the country's farmers are included in the modernization process. The Revolution would be "over" in the sense that consumer demand and therefore profitability would not grow as fast as production with the result that the high adoption rates of modern seed and techniques would fall. Success on a production front does not necessarily lead to the successful modernization of all of agriculture. Foodgrain self-sufficiency is within the grasp of the country now but this achievement may do little to

translate the new seeds technology into improved rural welfare.

Over the long term production increases have to be purchased in sufficient quantities to maintain their price during each harvest period so that farmer expectations of continued profitability are maintained. High incentive prices are certainly not a problem in Bangladesh now but this relative price situation can change. Grain prices do decline during harvest periods and this is difficult to avoid. But consistent price drops over the long-run may cause farmers to curtail their use of HYV and expensive modern inputs. The spread of HYV would also slow.

There are several methods of stabilizing foodgrain prices over the year and so insuring the maintenance of incentive price conditions for agriculture. In broad terms, grain prices can be maintained by either consumer or public purchases. On-farm consumption prevents a large portion of each harvest from reaching the market. Rural works projects and public foodgrain procurement can also lessen the impact of large harvests on market prices. (The roles of Rural Works and procurement will be dealt with later in the paper.) Because the vast majority of the population is rural and predominantly poor (the landless, small - and middle-size farmers), their foodgrain consumption habits have a great impact on the supply and price of each harvest. The poor spend over half of their incomes on foodgrain and other foods. And as their incomes grow with good harvests and higher prices, they again spend as much as 60% of their new incomes on foodgrain. Herein lies a vital link that will generate considerable demand for the additional foodgrain produced. Larger farmers spend proportionately much less of their existing, and additional income, on foodgrain (less than 15%) and more on manufactured goods (often imported) and on non-productive forms of saving.

The point of this consumer expenditure analysis is that a crop production program which emphasizes broad acceptance of the new seed will generate a different aggregate consumption pattern and therefore food demand, than one that simply stresses production increases. Food self-sufficiency that is achieved by large farmer oriented policies will imply that a lower absolute level of production will satisfy the demand for grain, and that as a result smaller farmers will enjoy less production, income and therefore grain consumption. (Though based on Indian data, Tables IV-1 and 2 from Mellor and Lele are very instructive on this point.) A broad-based program will enable more farmers to grow the new seed and thereby earn the income with which to

Table IV-1 Division of Incremental Expenditure Among Expenditure Categories, by Rural Expenditure Class, India, 1964-65.

	Bottom deciles (mainly landless ag. & nonag. laborers) with less than 1 acre)	3rd decile (laborers)	4th & 5th deciles (1-5 acres)	6th, 7th & 8th deciles (5-10 acres)	9th decile (10-15 acres)	Lower 1/2 decile (15-30 acres)	Upper 1/2 decile (30+ acres)
<u>Mean Per Capita Monthly Expenditure</u>	8.93	13.14	17.80	24.13	30.71	41.89	85.84
<u>Allocation of an Additional Rupee of Expenditure</u>							
A. Agricultural Commodities							
(a) Food grains	0.79	0.69	0.59	0.52	0.46	0.40	0.33
(b) Nonfoodgrains	0.59	0.38	0.25	0.16	0.11	0.06	0.02
(i) Milk & milk products	0.20	0.31	0.34	0.36	0.35	0.34	0.31
(ii) Meat, eggs & fish	0.07	0.11	0.12	0.13	0.13	0.12	0.09
(iii) Other foods (a)	0.02	0.03	0.03	0.03	0.03	0.03	0.02
(iv) Tobacco	0.01	0.05	0.07	0.09	0.10	0.12	0.16
(v) Vanaspati	0.01	0.01	0.01	0.01	0.01	0.01	0.01
(vi) Other oils	-	0.01	0.02	0.02	0.02	0.02	0.01
(vii) Sweetners	0.05	0.05	0.04	0.04	0.03	0.02	0.01
	0.04	0.05	0.05	0.04	0.03	0.02	0.01
B. Nonagricultural Commodities							
(a) Textiles	0.21	0.31	0.41	0.48	0.54	0.60	0.67
(i) Cotton textiles	0.09	0.08	0.07	0.08	0.07	0.06	0.07
(ii) Woolen textiles	0.09	0.08	0.07	0.06	0.06	0.05	0.03
(iii) Other textiles	-	-	-	0.01	0.01	0.01	0.02
(b) Nontextiles	-	-	-	0.01	-	-	0.02
(i) Footwear	0.12	0.23	0.34	0.40	0.47	0.54	0.60
(ii) Durables & semidurables (b)	-	0.01	0.01	0.01	0.01	0.01	0.01
(iii) Conveyance (c)	0.01	0.01	0.01	0.02	0.02	0.03	0.05
(iv) Consumer services (d)	0.01	0.01	0.02	0.02	0.03	0.05	0.10
(v) Education (e)	0.02	0.02	0.02	0.03	0.03	0.04	0.06
(vi) Fuel & light	0.01	0.01	0.02	0.03	0.03	0.05	0.11
(vii) House rent (f)	0.07	0.07	0.06	0.05	0.05	0.04	0.03
(viii) Miscellaneous (g)	-	0.01	0.01	0.02	0.03	0.04	0.08
	-	0.09	0.16	0.22	0.27	0.28	0.16
TOTAL	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Source: Mellor and Lele

Table IV-2 Two Rural Development Strategies - Distribution of Rupees 2400 Million Expenditure Assuming Two Different Distributions of Income

Items	10% of expenditure by landless labor and 90% by owner-cultivator ^{a/}			80% of expenditure by landless laborers and 20% by owner-cultivator ^{a/}		
	Laborers expenditure (million rupees)	Cultivators expenditure (million rupees)	Total expenditure (million rupees)	Laborers expenditure (million rupees)	Cultivators expenditure (million rupees)	Total expenditure (million rupees)
1. Food grains	101	324	425	806	72	878
2. Milk & milk products	24	281	305	192	62	254
3. Meat, eggs & fish	8	65	72	58	14	72
4. Tobacco	2	43	45	19	10	29
5. Vanaspati	2	43	45	19	10	29
6. Other edible oils	12	64	77	96	14	110
7. Sweeteners	12	86	98	96	19	115
8. Other foods	12	194	206	96	43	139
9. Cotton textiles	22	151	173	173	34	206
10. Woolen textiles	-	22	22	-	5	5
11. Other textiles	-	22	22	-	5	5
12. Footwear	-	22	22	-	5	5
13. Conveyance	2	43	46	19	10	29
14. Consumer services	5	65	70	39	14	53
15. Education	2	65	67	19	14	34
16. Fuel & light	17	130	146	135	29	163
17. House rent	-	43	43	-	10	10
18. Durables & semi-durables	2	43	46	19	9	29
19. Miscellaneous	17	454	470	134	101	235
TOTAL	240	2160	2400	1920	480	2400

a/ Landless laborers defined as the lowest three expenditure deciles and owner-cultivator as the sixth, seventh and eighth expenditure deciles.

Source: Mellor and Lela

consume a higher proportion of the output. This increased income is the link to higher foodgrain consumption. Landless laborers will purchase a portion of these increased harvests to the extent that they participate in on-farm and rural works employment. A purely foodgrain self-sufficiency program option will involve primarily the larger farmers who will consume a much smaller proportion of their harvests. While aggregate foodgrain production may grow rapidly at first with a purely production-oriented strategy, the poorer rural population will not have the needed income with which to purchase the increased production. This point remains valid even though self-sufficiency could not be provided by the modernization of the few large farmers in Bangladesh alone. (The reader is referred to Table IV-2 for an Indian based example of the effects of these two options.)

New incomes in the hands of a wider range of farmers will not only ensure that more grain will be consumed on farms (with consequently higher prices for marketed grains during harvest periods) but will also mean that these new incomes will be spent on other foods and on consumer goods and services. Herein lies the link to urban-industrial growth, and to the foreign trade sector, as will be discussed later and in Appendix A. This initial rural income increase will cause an increase in demand for other foods and non-food consumer goods, and so, most importantly, will cause a second round of investment opportunities in the production of other crops and in market towns to meet this additional consumer demand. And from crop diversification will come additional employment opportunities. Growth linkages therefore emanate from the new seeds technology in several directions: to income and employment growth from the expanded supply of agricultural inputs and services; from agricultural marketing, processing and storage; and from the growth and diversification of consumer demand. This can be an impressive engine of growth over time because it involves the new purchasing power of millions of rural families. We must now turn to the conditions that will make this growth possible.

The Model's Operative Conditions - The Short Term Perspective

The model's chain of causal linkages is only theoretical; whether it has any practical growth effect is dependent upon the growth of crop production, the rate of population growth, market and institutional linkages and upon public policies and programs. The assumptions - operative conditions - of this model are numerous; however if they can be made to hold, the process that

is activated is a powerful one - one encompassing all of agriculture, generating food, savings and consumer demand to benefit the rural population and to fuel urban-industrial development. The outlook for these linkages, based on past experience, is not optimistic, for "Agriculture certainly stands convicted on the count of its lack of direct stimulus to the setting up of new activities through linkages effects - the superiority of manufacturing in this respect is crushing." (A. Hirschman, The Strategy of Economic Development, Yale, 1958, pp. 109-110). Not only are the growth linkages presently tenuous but the sheer numbers of people - some 800,000 per year - entering the labor force are staggering. Even the most ambitious employment-oriented strategy will only create 450 - 550 thousands of new jobs per year. More is said on this in a later section.

It is important to emphasize at the outset that this development model cannot be implemented by the laissez-faire functioning of the private market alone. The Bangladesh Government does recognize the importance of an activist program of public policies and investments. Though these growth processes will occur in rural areas, their magnitude will not be significant in terms of production growth and employment creation unless guided and stimulated by public policy. However, the reliance on corrective taxes and subsidies alone to bring market prices in line with scarcity economic values would be naive because such prices do not begin to compensate for all the inherent inequities in any society. Broad-based participation must be actively pursued by a combination of these fiscal measures, increased supplies of modern inputs and by the creation of delivery and educational institutions that encompass more of agriculture. These and other operative conditions for the successful implementation of this model are now discussed. Macroeconomic conditions of this model are discussed in Appendix A.

(1) Crop Production

The growth linkages of this model emanate from increased agricultural production, particularly that of high yielding rice. (While we have not stressed this point, the growth mechanisms inherent in this model encompass all high yielding crops including jute.) Production growth made possible by the new seeds and modern fertilizers, is the corner stone of this model without which income and employment generation do not occur. The strategies and resources needed to ensure high agricultural growth rates are discussed in Chapter 5.

(2) Population Control

The growth linkages that emanate from the new seeds technology depend very heavily on several assumptions. The first and most important of these is that of a moderating population growth rate. For most countries an expanding population is a stimulus to development. For Bangladesh, with her present man to resource ratio, a continued high and stable population growth rate clearly is not a stimulus. The population growth rate in the context of the present rural situation is having two broad detrimental effects:

First, if population growth consumes the entire income growth made possible by increases in production and employment, consumer demand per capita will not grow. It is our impression that this is now occurring. This means that the present composition of consumer demand will remain stagnant; i.e. that increasing consumer demand for a wider range of foods and consumer goods will not take place. While total demand may grow with population, each person's material welfare will remain the same. The secondary income and employment growth linkage effects of the new seeds therefore will not be important. Only to the extent that economic growth stays ahead of population growth can improvements in per capita income occur. Let us reiterate that in the 1950's and 1960's these two growth rates were essentially the same with obvious consequences for per capita income growth. (see Table IV-5).

Second, and more seriously, population growth appears to be pushing people out of productive enterprises. While per capita incomes may be stable, the income positions of the very poor have deteriorated. Family labor is displacing hired labor, farm sizes are decreasing, landlessness is increasing. Thus, a smaller proportion of the rural population has full-time productive employment. This places a greater burden on the Rural Works Program, on public programs which have less productive impact, and de facto means more idle labor. These types of factors are causing an absolute decrease in income for many of the rural poor.

One ramification of these rural changes is that it will become increasingly more difficult to expand economic opportunities for women, and possibly more difficult to motivate couples to strive for a small family norm. These and other justifications for an aggressive population control program will be discussed in Chapter 6.

(3) Returns to Labor

In economic terms, agricultural labor income is directly dependent upon the returns to labor in the total cost of production. In Bangladesh, where so many are agricultural laborers, ensuring that these returns increase, ensures higher incomes. Man-hour requirements per crop increase with the use of the new seeds technology, but they do not necessarily increase in proportion to crop yield, nor do labor costs (wages) increase as a proportion of total costs. In fact, with the use of modern inputs, the proportionate return, though not the absolute return, to labor declines as other factors such as fertilizers, pesticides, and irrigation must now be purchased. To ensure that laborers' absolute incomes increase, and so total rural wage income and employment, three points need to be kept in mind: (a) the mechanization of agriculture needs careful scrutiny; (b) multicropping is important; and (c) the laborer will benefit from the increased returns to other factors (land and modern inputs) in so far as he owns them.

Man-day employment requirements per acre for the new rice seed will increase from approximately 50-60 man-days for the traditional varieties, to 100-110 man-days for the new varieties (Mallor and Zaman). Family laborers will be the first beneficiaries of this employment and so under-employment will be reduced. The increased hiring of outside labor will also occur, particularly during the high labor demand periods of planting and harvesting. But because of this "slack" in the numbers of full man-years of existing employment, the difficulty of creating new jobs is compounded.

An irony of a labor surplus economy such as Bangladesh is that because periods of high labor demand fall at the same time during the year, labor is in short supply for a few weeks in any one area and wages are bid up. These periods of seasonal labor shortages are creating pressures for mechanization. This could have the effect of reducing man-hours required per crop, and therefore the proportionate and possibly the absolute return to labor. For many laborers, employment during the peak season may represent much of their annual cash income. Cutting these job opportunities, if only for a matter of days or weeks, can have a disproportionately serious effect on total rural wage income. This presents a dilemma. The adherence to a principle of maximum man-hours per crop may jeopardize the ability to plant second and third crops, and therefore additional production and man-hours of employment per acre over the course of a crop year. Labor and bullock power may not always substitute for mechanization (though there is scope for their improved productivity), particularly when it comes to either a power requirement or timeliness of crop operation required to prepare a field for the next crop. This does not imply that the timeliness or power requirement of certain steps cannot be achieved by a capital-saving method. As an example, irrigation may substitute for tillers and tractors as wet soil may enable the timely use of bullocks. These are empirical questions, however, that need close examination in the context of the multicrop season of Bangladesh. Given the types of mechanized irrigation and power equipment that are presently being imported, the Government is in need of an appropriate agricultural technologies policy (really a macro

question of shadow pricing capital) to ensure that the mechanization of agriculture is compatible with the use of domestic resources, and with broader production and distributive development goals.

The unguided mechanization of agriculture, and increased tenancy and landlessness are having the effect of reducing individual and total wage incomes from agricultural production. This presents the dual challenge not only of stopping these processes but also of turning them around - to increase laborers' employment and incomes. The agricultural institutions discussed in Chapter 5 are basically designed to achieve this goal.

- The Employment of Women

The employment of women in agriculture will rise with increased crop production and diversification. There may also be expanded scope for female participation in some types of Rural Works projects. Market town growth will also open opportunities for women in marketing and textile manufacturing.

Evidence in other countries suggests that expanding employment opportunities for women outside of the home tends to contribute towards increased acceptance of the small family norm. To the extent that this model contributes to such expanded employment opportunities it therefore may strengthen tendencies for a reduced population growth rate.

Yet, this proposition may not be valid if other changes occur. For example, it must be recognized that a few of the mechanized innovations that are called appropriate technologies do displace labor, and female laborers at that. The peddle thresher and pregerminated seed drill are examples of these. Such mechanical technologies do have possibilities here; and we do not mention these threshers or drills as items to be banned. But they should be looked at carefully in order to be certain that all implications of their introduction are thoroughly understood.

- Rural Education

We tend to stress employment creation without recognizing the skill levels implied in the tasks of economic development. Farmers need basic skills to enable them to better exploit the new seeds technology. The decentralized growth of towns and industries also require employees with basic commercial, managerial, and engineering skills. The task of aligning educational systems

with the development needs of the country is discussed in Chapter 7.

- Land Reform

The question of land reform was raised in the preceding chapter. Its appeal can be understood more clearly in this context, for by land ownership the laborer-owner enjoys the full returns to all factors of production. The problem of maintaining labor's share then becomes irrelevant because he receives the full return on the land and other factors that he owns. However, because millions of laborers will only have their labor to offer, even with a radical land reform, the matter of labor's share cannot be set aside. Short of a land reform which includes all landless laborers, the maintenance of this share needs to be addressed by a wide range of policies. For landless laborers, the issue can be addressed by a stable wage goods policy (see Appendix A), programs to increase rural purchasing power (such as Test Relief and Rural Works), and agricultural research that is cognizant of the impact that mechanization and multicropping practices can have on agricultural income and employment. For tenants and poorer farmers policies are needed to improve the rental terms for tenants and to slow the distribution of land upwards. The magnitude of this task requires efforts in all these areas, but it remains essentially a stop gap approach. The numbers of present landless, of new laborers each year, and the economic forces pushing people off the land, all require corrective action. Land reform may be the only ultimate alternative. We will once again address this issue in Chapter 5.

(4) Crop Diversification

Agricultural development along the lines envisioned in this model can be carried for many years by a rice-jute crop culture. Vistas of paddy fields that seemingly stretch forever disguise the fact that yield and cropping intensity hold great potential for further growth, and that consumer demand for these grains will grow dramatically with increasing rural incomes. Even with an expansion of food demand, and grain price maintenance efforts by the Government, there will come a time when grain production will surpass demand and cause rice prices to fall. This presents a problem for it is likely to occur before a majority of farmers are modernized and total unemployment is significantly reduced. As will be documented later in this chapter, neither market town growth nor Rural Works are going to be major employers in the near future. This does not mean that a policy of employment

expansion should not be pursued in all three areas, but simply by virtue of scale the single most important determinant of employment expansion ~~will have to remain~~ agricultural production for years to come. Agricultural research and extension systems must be prepared to offer a range of alternative crops when abundant supplies of rice cause its price trend to fall. With crop diversification will come higher net returns per acre, much better protein yields per acre and more intensive land and labor utilization. Agricultural research institutes need to be firmly established now so that in coming years other crops can contribute to the yield revolution. More broadly, it is important that crop research institutions not only appreciate but insure that their seed research work is consistent with rural employment and income objectives.

- Nutrition

It is through higher incomes and crop diversification that better nutrition and health can be achieved. Malnutrition is endemic in Bangladesh. Poor diets render the population vulnerable to disease, and for children, can jeopardize the full development of their intellectual potential. Good nutrition is important to human welfare and a strong labor force.

The lack of resources rules out reliance upon relief approaches to nutrition problems (the use of special supplemental foods and delivery systems), if we assume, as we must, that the nutrition target is the country as a whole. The immediate food quality problem, like that of food itself, may be one of making the best use of those products which are available. Bangladesh has rice, pulses, fish, edible oils, vegetables and fruits, all available at the village level. Seen in these terms, the nutrition problem for the poor is in part one of creating rural purchasing power to improve the distribution of available foods. Supply is also critical for the population as a whole. Clinical indicators suggest that nutritional deficiencies become less prevalent when harvests are good, incomes increase, and people can expand and diversify their diets. When harvest are poor however, diets shrink, become less diversified, narrow, and more severe malnutrition once again plagues the population. This evidence argues for a nutritional strategy predicated on crop diversification, knowledge of good dietary habits and the economic resources to grow and buy food. Drawing on this strategy nutrition project proposals will be discussed in Chapter 5.

(5) Rural Works

The benefits of the Rural Works Program are well-known. During the 1960's it provided hundreds of thousands of off-season rural jobs and constructed a considerable amount of rural infrastructure - primarily minor roads and irrigation works. What is less well-known are the circumstances of financing and motivation that made such a decentralized program successful. USAID was interested in the Program for its distributive and developmental impact; the Government of Pakistan, for its political implications. The developmental motivation still remain though the political climate has changed. (This particular point is elaborated in Appendix C.)

The fact remains that the creation and maintenance of infrastructure and of employment are central components of rural development. Off-season employment creation is needed on distributive if not humanitarian grounds and the expansion of infrastructure is needed to continue the growth of on-farm employment made possible, *inter alia*, by irrigation. The Program also contributes directly to production increases by improving irrigation and transport infrastructure. The Program's broad complementary to the expansion of agricultural production is obvious and its wages can represent a modest increase in consumer demand. Its record for having constructed low-cost infrastructure needed for increased crop production is well-established. Whether the Program need or can be operated using highly decentralized - participatory methods of the past, and other issues, are addressed in the next chapter.

The minor earth works of the RWP have a very high wage component - as high as 80 and 90% which benefits the poorest laborers. All villagers are users of the completed projects, but depending on the types of works financed, some more than others. Truck owners clearly benefit by bricked roads, cart owners by dirt roads connecting their villages to the outside for the first time. On the whole the Program's projects are widely shared.

(6) Market Town Growth

The industrial centers of developed countries can be described by their extreme large-scale and capital intensity. The industrial strategies in many developing countries are often designed to replicate this experience. The agricultural development model discussed here opens the possibility for an entirely different kind of industrialization process, i.e. one that is small-scale, highly decentralized, labor-intensive and produces a wide range of fairly unsophisticated consumer and producer goods to

serve local markets. (Other manufactured goods would continue to be produced, with certain qualifications, in the conventional way.) The consumer goods demand generated by new agricultural incomes as discussed in the first part of this chapter can be met by imports and large-scale industry, but this option is expensive in terms of the foreign exchange and capital cost per unit of output. (Table IV-3 drawn from Indonesia data provides examples of the relative cost magnitudes involved.)

Hundreds of shops and small-scale firms are going to spring up in district, sub-divisional and thana towns as the Green Revolution spreads. This is a natural occurrence. We emphasize, however, that their full contribution to the creation of the new jobs and consumer goods supplies will not occur, unless the Government encourages this growth. We can understand the Government's hesitation (drawing on its experience with the concentration of great economic wealth in the hands of twenty-two large families) but the fact still remains that the country requires first 1,000 then 100,000 artisans and small-scale entrepreneurs. Such an industrial model holds considerable promise for employment generation, efficiently produced goods, decentralized urban growth and public revenue generations. Repair shops for bicycles can evolve into repair shops for agricultural equipment, and later some might even diversify into manufacturing. Produce marketing, handicrafts, textiles, and household services hold promise as employment opportunities for women. Here again, educational institutions need to focus on the skill needs of market town growth.

A second reason that market town growth needs to be promoted is the provision of productive opportunities for private capital. At present, profits from the new seeds technology, commodity speculation and commerce need additional productive outlets. Continued land purchases by the better-off are simply compounding the tenant and landless problem. If the poorer farmers and landless are to be drawn into the agricultural modernization process, then the better-off farmers must have developmentally oriented investment opportunities.

The Employment Potential - A Recapitulation

The task of implementing our agricultural model has forced us to focus on its operating conditions as we have done in the last several pages. These conditions further help us to see agricultural development as a dynamic process requiring specific kinds

Table IV-3 Technological Alternatives - Examples from Indonesia

Average Retail Price of Product, in Rupiahs

Technology	Plastic Sandals	Cigarettes	Soft Drinks	Bicycle Tyres	Flashlight Batteries
Capital-Intensive	120	78	63	470	55
Intermediate	60	60	36	350	40

Employment Required in Various Industries for Each of Three Technological Choices (output given)

Technology	Cigarettes	Flashlight Batteries	Soft Drinks	Tyres	Plastic Sandals
Capital-Intensive	3,000	464	279	-	230
Intermediate	6,018	1,392	698	1,207	.920
Labor-Intensive	40,120	5,568	6,417	7,100	

Source: Louis T. Wells, Jr. "Economic Man and Engineering Man: Choice of Technology in A Low Wage Country, Harvard, Economic Development Report No. 226, 1972.

of program priorities to effect its successful implementation. We do not gloss over these conditions, these major assumptions, but rather expose them for they help us focus on those policies and programs that can make improvements in per capita income a reality.

A close look at the actual employment potential of our model forces us to appreciate the scale of the task ahead. Zaman and Mellor have constructed an admittedly rough but nonetheless useful estimate of the numbers of man-years of employment that can be created in each of six sections of the economy (see Table IV-4). Under their assumptions nonagricultural employment (including market towns) and Rural Works can generate nearly 250,000 new jobs each year. (This was written before the industrial sector and the Rural Works Program faced their present difficulties.) An equal number of jobs are to be created in agriculture production itself. Nonetheless, the total number of new jobs - 500,000 per year - is 300,000 less than the number of new entrants to the labor force. (We have to set aside the numbers who are already unemployed.) While these numbers of new jobs may be further increased with aggressive efforts, finding additional jobs for even 200,000 more laborers would appear to be all but impossible. It is because of this prospect that we have given as much emphasis as we have to labor intensive Rural Works projects and to market town growth.

Food as a Developmental Resource

The food problem is fundamentally that of rice, its supply and price, and this necessarily involves the entire economy. This paper emphasizes an agricultural strategy as the key to development in Bangladesh and the primary vehicle of this priority is rice production. The proximity of millions of people to subsistence, and frequently famine, means that the supply of rice is central to human welfare, and as has been emphasized, to development as well. Modern agricultural inputs and new seeds combined with incentive prices will enable production to increase, generate income growth and increased employment, and so raise the demand for still more foodgrain. Increased employment in turn will ensure that the unemployed and poor purchase this incremental foodgrain production. But the policy conditions required for this accomplishment cannot be taken for granted. We therefore need to discuss

Table IV-4 Employment Targets for Bangladesh

Employment program	Number of jobs created:			No. of jobs on "Full-Time" basis (250 man-days/yr.)
	No. of man-days per year	Estimated ^{1/}		
		No. of man-days (in millions)	No. of jobs (in thousands)	No. of jobs (in thousands)
a. Growth in nonagricultural employment at 5.5 percent.	260	49.565	191	193
b. Addition of 170 thousand acres annually to HYV (see text) irrigated food grains.	162	34,460	213	138
c. Introduction of HYLW on land which is unirrigated or extensively irrigated (see text) 425 thousand acres annually.	162	4.675	29	19
d. Intensification of agriculture through dairy and other agricultural production for domestic consumption.	250	20.000	80	80
e. Intensification of jute and tea cultivation on 5 percent of their total acreages (see text).	162/250	2.830 ^{2/}	15	11
f. Intensive public works program at an initial level of 250,000 workers and adding 20 percent other numbers each year.	240	12.000	50	48
TOTAL		123.530	578	494

^{1/} Number of man-days refer to 8 hours of work.

^{2/} For jute cultivation man-days per year per labor is assumed to be 162, while for tea and other service activities man-days per year per labor assumed to be 250.

Source: Zaman and Mellor, "Generating Employment in Bangladesh: Some Special Problems and Their Possible Solutions", Cornell, 1972.

food specifically apart from agriculture, in a separate section.

During the Pakistan period, there was an understandable but unfortunate tendency to treat food imports and the ration system as being apart from domestic rice production and its private distribution. The ration system was designed to ensure imported food for the cities as the countryside and the private market system could or would not be relied upon for adequate supplies at low prices. Thus, the ration system operated somewhat apart from food conditions in the country as a whole and became a now permanent means of ensuring foodgrains (and other consumer items) at moderate prices to urban people, government and factory workers, the military and other selected urban groups. Only secondarily has the system been used as an instrument to stabilize seasonal price variations and to feed the poor during times of scarcity.

During the pre-Independence period, world grain prices, domestic rice prices, and ration prices were low and not dissimilar, and therefore the foreign exchange (concessional aid foregone) and subsidy burdens were tolerable. But domestic rice is now four times as expensive as before Independence, consumer goods are even more expensive and international commodity prices have jumped. The world prices for rice and wheat were around \$350 and \$225 per metric ton respectively. The Government sells rice at the equivalent of \$203 and wheat for \$169 through the ration system while domestic market prices are \$800-\$1000 and \$400-500 per metric ton for rice and wheat respectively (calculated at the artificial official rate which doubles the real value of domestic grain.). The Government recognizes that the ration system imposes a very heavy burden on both the foreign exchange and domestic budgets. Government foreign exchange outlays for foodgrain imports in FY 74 were upwards of \$100 million and the domestic subsidy burden of these imports (caused by the difference between the import and the ration price) climbed to an equivalent of \$130 million. These magnitudes have had a disastrous effect on the administrative budget, non-food imports, and on the FY 74 Annual Plan, in the face of what proved to be the country's two best Aman and Boro crops.

Despite this multiple burden, the Government has made only minor increases in its ration prices, continues to import very high levels of grain, and has yet to place great emphasis on domestic grain production and procurement. It is our view that Bangladesh does produce enough in aggregate to feed itself during periods of normal harvests, at which time the food problem is primarily one of distribution bottlenecks created by hoarding,

smuggling and the fact that the rural poor are outside of the ration system. These problems can only be addressed by domestic policy changes upon which donors have little effect. Serious food shortages created by the droughts, floods, and cyclones that frequent this region require high food import levels and their targeting to those in need. However, during normal crop years, such as 1973 and 1974 the Government must strive to increase food production, control smuggling, procure grain aggressively and improve the private marketing of grain for the cities.

Of greater importance in the longer run than reform of the ration system is the use of foodgrain as a development resource. The growth of foodgrain production and incomes will be accompanied by the increased demand and consumption of foodgrains. This can present two difficult grain price-supply situations which need to be avoided. First, as food import needs are calculated on the basis of the deficit between aggregate production and consumption account needs to be taken of the impact that increasing per capita incomes will have upon food demand and therefore price. The present method of analysis, and perspective on the use of food, allow imports to supplant production increases on a one to one basis which means that there is no net increase in per capita supplies. This problem is readily handled by tying the per capita grain requirement to per capita income growth in the aggregate food calculation. This needs to be done in the future because (in an otherwise normal situation) grain prices will rise which will have the effect of increasing the cost of wages, and so will discourage employment creation. This is the first situation that will become relevant with income growth.

Secondly, a grain production increase (with or without grain imports) which allows the grain price trend to fall will dampen the incentive to increase grain production and thereby, again, the creation of employment and income. (We of course are not recommending the maintenance of today's extreme rice price level.) Foodgrain imports can become a double-edged sword whose use must be guided by a developmentally oriented food policy. Table IV-5 helps to illustrate the aggregate food situation in the 1960's and early 1970's. Without grain imports, per capita consumption shows no clear trend. With imports there is some slight improvement, possibly ahead of per capita income changes. These data do not illustrate the two cases discussed above because food-grain production and per capita income growth show only the slightest

Table IV-5 Total Food Production, Consumption, and Deficits

Year FY	Production mid-year, in millions	Production MMT (-10%)	Imports MMT	Without Imports	Per Capita Availabilities lbs/year With Imports
60	53.9	7.66	.61	312.7	337.6
61	55.3	8.60	.70	342.1	367.0
62	56.8	8.55	.41	331.2	347.0
63	58.4	7.90	1.44	297.6	351.8
64	59.9	9.45	1.00	347.1	383.8
65	61.6	9.33	.35	333.2	345.7
66	63.8	9.33	.89	321.7	352.4
67	65.1	8.53	1.08	288.3	324.8
68	66.9	9.95	1.02	327.2	360.7
69	68.5	10.13	1.12	325.3	361.3
70	70.8	10.63	1.60	330.3	380.0
71	72.4	9.65	1.34	293.2	334.0
72	73.4	9.01	2.40	270.1	342.0
73	75.1	9.51	2.38	278.6	348.3
74	77.4	11.11	2.00	315.8	372.6
75	78.6	10.26 (est.)		287.2 (est.)	

Source : IBRD

positive trend and because smuggling of unknown qualities reduces real availabilities.

In this context, the smuggling of grain to India can be understood as the imposition of a very heavy tax on those who do not produce their own grain and must rely on the market, and on those who could otherwise be employed by an expanded real supply of foodgrains. Smuggling is a severe tax on development itself. Because foodgrain production has been growing at the rate of 2-3.6% per year (1955-70) and population at the rate of 3%, even the smuggling of 1% of the annual crop (only 120,000 metric tons) stagnates or diminishes per capita domestic food availabilities.

It is apparent that foodgrain imports - including those of PL 480 Program - play a greater role in the domestic food situation, and so in this agricultural development model, than is generally recognized. If it were not for the fact that improved rural incomes and employment generation are so closely tied to increased agricultural production, a declining rice price would be beneficial. But because they are closely tied, it is important to lay the groundwork now for the future control of food supplies and prices as a development tool. The use of food in this proposed developmental context of course runs contrary to a policy of cheap food for the cities - an age-old dilemma. An on-farm grain storage program runs contrary to urban interests for the same reason. It is our thesis that the economy as a whole and the vast majority of its people have more to gain from programs of income and employment creation, than from ones that encourage cheap food. The policy and program recommendations that flow from this food thesis will be detailed in the following chapter.

The Model's Beneficiaries

It is the objective of development strategies to create or improve economic benefits for some, generally disenfranchised, groups in society, because these groups do not have the needed economic and political strength of their own to demand more favorable treatment vis-a-vis the government and the other groups in society. This model is no exception, for it clearly advocates benefits for several large rural groups only one or two of which presently have political standing. Without public assistance, these groups would remain unable to force changes on their behalf by peaceful means. Historical experience supports the thesis that

such changes among economic groups do not occur until forced; we assume the Government to be capable of exerting such a force.

The immediate beneficiaries of this proposal are farmers of all farm sizes and agricultural laborers for the model recommends increased investments in agricultural production and diversification. Secondly, both landless laborers and small farmers will benefit from a revitalized Rural Works Program. These processes will provide opportunities for women particularly if the rural institutional and educational channels are sensitized to the utility and possibilities for doing so. A third group composed of large farmers, absentee landlords, and rural businessmen who have capital would gain from government promotion of rural manufacturing and commerce. The present rural political leaders would also benefit, for more often than not they are in a position to exploit investment opportunities. The clearest beneficiary would be the economy as a whole, for it would be producing foodgrains, employment, consumer goods, and foreign exchange earnings (and savings) at less cost than is inherent in the present Plan strategy. Rural income growth may also lay the necessary basis for the wide acceptance of the small family norm.

The Green Revolution experience in the Indian Punjab sheds some light on the influence and demands of new economic groups. Foodgrain prices have not declined with increased production because surrounding states remain food deficit. While Punjabi farmers will support improved rural infrastructure as being in their self interest they argue for a public price support program (instead of increasing aggregate demand) as the tangible method of insuring incentive output prices. An employment expansion objective is not likely to be in the self interest of cost minimizing farmers or businessmen. But with the scarcity pricing of capital goods, and pressures from the Central Government to implement employment programs, employment creation can occur. As in the case of the GOP Rural Works Program, some political officials found the expansion of economic opportunity to be in their political self interest. Political interests in the Central Government may be more responsive to national goals than private economic interests in the thanas.

There are drawbacks to this model's implementation of course which center upon the obvious alteration in the Government's dual socialistic means to socialistic goals development

objectives. At present nationalization has meant a nationalized industrial sector that can be characterized by little revenue, low production and expensive employment. A public sector market town policy that promotes competition will be a check upon both the monopoly concentration of power and on the inefficiencies which now characterize publicly operated firms. Implicit in the foregoing model is the greater reliance upon decentralized market signals as the allocators of resources, rather than upon the use of administered decisions.

Consequences for AID's Development Program

The development strategy that follows from this model focuses on improved rural welfare for all economic groups. Landed and moneyed interests are encouraged to participate in productive enterprises and the landless are provided employment in agriculture, rural infrastructure, and market towns. Population control is central to these efforts to prevent the per capita stagnation of public and private initiatives.

Specifically, the improvement in per capita welfare is to be achieved by the expansion of crop production. Access to the means of production is to be encouraged by the promotion of focused policies and programs in the areas of agricultural production, rural works and market town development. The Government already has built these institutions and many of the needed policy initiatives have been implemented. Certain programs in the education, nutrition and health sectors contribute to the general welfare objective, to the specific production-oriented strategy, and the opening of the door to greater opportunities for women and more relevant information flows.

This particular model has advantages over other strategies, for it exploits available technologies and institutions. It is not radically disruptive of existing interests, and it contributed directly and efficiently to the achievements of stated Plan objectives.

The following chapters will deal with a description and analysis of what various developmental policies and sector programs can contribute to the implementation of this model. In our view development programs in the areas of agricultural

production, rural institutions, and population control take on added significance. Education, nutrition and health programs are of secondary importance although specific projects within these areas are vital and complementary to the achievement of the dual objectives of improved economic well-being and population control. Specific projects in other areas of the economy, though not the general sectors in which they are administered, can also receive priority emphasis in this context.

Our commitment to these priorities is strengthened by our increasing awareness of the difficulties and consequences of rapid population growth, of the increasing disenfranchisement of the poor, and of the food and resource deficits facing Bangladesh. Stagnation of Plans and individual lives need not be tolerated.

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Rural Development and Agricultural Production

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Chapter 5

Rural Development and Agricultural Production

The Landscape

The review of the economy in Chapter 2 was essentially a look at the urban-industrial sector - a small part of the total economy. As it is the thesis of this paper that the growth of agriculture is central to the development of the country as a whole, it is useful to describe this larger economy factually before discussing past and present rural development programs, and then our thoughts on the implementation of our agricultural strategy. (Throughout this section and elsewhere we have drawn data from the 1960 Agriculture Census, the Master Agricultural Survey of 1967/1968, and IBRD Reports. The reader is referred to the Agricultural Chapter of the most recent Bank Report - Bangladesh-Development in a Rural Economy - for a detailed analysis of agriculture.)

The nation's 10 million farm families live in 19 districts (states), 416 thanas (countries) and some 65,000 villages. 93% of the nation's population live in villages of less than 5,000 people. On foot, by boat, and by cart, villagers have access to weekly village markets called "hats", and to union and thana officials, and through these institutions to the larger world. Three quarters of a rural family's income is spent on food, yet calorie, protein and vitamin deficiencies remain seasonal if not endemic problems. Many of a farmer's durable good requirements including his housing material and farm implements are locally grown or manufactured. Though most farm families only sell enough grain - on the average ten percent - to purchase their

minimum cloth, kerosene, salt, oil and other consumer good needs, they often fail to retain sufficient grain to hold them over the lean pre-harvest fall months. As a result small farmers in particular must purchase grain back later at higher prices, out of wage income earned in the dry season.

While rural Bangladesh is relatively tranquil, the nation is frequented by cyclonic storms of varying intensities - 13 in the 1960's alone - as well as excessive flooding, drought and disease that plague human inhabitants and crops alike. The severity of these natural calamities is compounded by increasing population density.

Bangladesh has three rice crops season which overlap considerably as to planting and harvesting periods, regional location and elevation vis-a-vis the annual floods. The aus or spring crop is predominantly rainfed and provides 25% of the output from 32% of the acreage. The aman summer crop, also predominantly rainfed, is harvested at the end of the year and contributes 60% of the harvest from 60% of the acreage. Its harvest defines the food situation for much of the year. The boro winter crop depends heavily on irrigation and provides 19% of the annual harvest from 8% of the acreage. This latter HYV rice season crop depends heavily upon irrigation (and other inputs) but for this reason its yields are double the national average.

The attached Tables V-1, 2, 3 and 4 on crop acreage, production and yields indicate that agriculture remains largely traditional. Although the boro (HYV) rice acreage and yields have increased, and do represent the beginnings of Green Revolution in Bangladesh, the yields of most other crops are low by international standard and have been fairly stable for a decade. Bangladesh rice yields are 1/3 those of Japan and 1/4 those of Australia. The annual variation in crop production can be great because of the vagaries of the monsoon, but there is little discernible growth trend during the 1960's. Rice production grew by 3.6% during the 1950's and early 1960's but fell to 2.0% in the late 1960's (the reader is referred back to Table IV-5).

High yielding rice varieties were used on only 167,000 acres in FY 71, but on upwards of 2 1/2 million acres in FY 74. The cropping index has risen from 120 in FY 60 to 146 in FY 70 (This signifies that on the average 1.2 and 1.5 crops were grown

Table V-1 Area Under Main Crops in Bangladesh, in million acres.

	1960-61/ 1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73
1. Rice									
(a) Aus	6.64	7.32	6.96	8.22	7.66	8.46	7.88	7.42	7.24
(b) Aman	14.52	14.67	14.06	14.68	14.40	14.84	14.18	13.37	14.12
(c) Boro	1.04	1.14	1.39	1.53	2.01	2.18	2.42	2.19	2.43
Total	(22.20)	(23.13)	(22.41)	(24.43)	(24.77)	(25.48)	(24.48)	(22.98)	(23.79)
2. Wheat	0.15	0.14	0.18	0.19	0.29	0.30	0.31	0.31	0.30
3. Other Cereals	0.22	0.20	0.24	0.26	0.29	0.28	0.30	0.25	0.18
4. Pulses	0.93	0.83	0.90	0.89	0.92	0.91	0.92	0.89	0.78
5. Oilseeds									
(a) Rape & Mustard	0.54	0.47	0.49	0.53	0.55	0.54	0.53	0.47	0.47
(b) Til & Linseed	0.18	0.18	0.17	0.16	0.17	0.16	0.15	0.15	0.15
(c) Groundnut	0.02	0.02	0.04	0.06	0.08	0.08	0.08	0.07	0.06
Total	(0.74)	(0.67)	(0.70)	(0.75)	(0.80)	(0.78)	(0.76)	(0.69)	(0.68)
6. Spices	0.41	0.36	0.39	0.42	0.41	0.42	0.40	0.39	0.38
7. Sugarcane	0.32	0.38	0.41	0.42	0.41	0.40	0.40	0.35	0.32
8. Potato	0.14	0.15	0.17	0.19	0.21	0.21	0.21	0.19	0.19
9. Sweet Potato	0.10	0.11	0.15	0.16	0.17	0.18	0.18	0.17	0.16
10. Fruits & Vegetables	0.62	0.58	0.58	0.60	0.63	0.64	0.63	0.58	0.58
11. Jute	1.73	2.20	2.17	2.34	2.17	2.46	2.20	1.68	2.21
12. Cotton	0.04	0.04	0.04	0.04	0.03	0.03	0.02	0.03	0.04
13. Tea	0.08	0.10	0.10	0.10	0.11	0.11	0.11	0.11	0.11
14. Tobacco	0.10	0.11	0.11	0.11	0.11	0.11	0.11	0.10	0.12
15. Others	0.10	0.54	0.49	0.54	0.51	0.53	0.50	0.39	0.40
Total All Crops	27.88	29.54	29.04	31.44	31.13	32.84	31.53	29.11	30.24
Net Cropped Area Including Current Fallow	21.91	22.33	22.43	22.48	22.41	22.49	22.48	22.47	22.47
Cropping Intensity	127%	132%	129%	140%	139%	146%	140%	130%	135%

Table V-2 Production of Main Crops in Bangladesh, in thousands of tons.

Crops	Average								
	1960-61/ 1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73
1. Rice	9,701	10,333	9,424	10,995	11,160	11,816	10,968	9,810	9,930
2. Wheat	37	35	58	58	92	103	110	113	90
3. Gram & Pulses	257	243	274	274	289	293	296	269	222
4. Edible Oil Seeds									
a. Rape & Mustard & Til	121	128	150	151	156	163	163	112	132
b. Groundnut	13	14	24	38	52	51	47	38	31
c. Total	134	133	152	188	203	207	210	150	163
5. Potato	348	486	591	701	786	857	849	741	747
6. Sugarcane	4,944	7,550	8,070	7,589	7,429	7,418	7,598	5,686	5,318
								(thousand bales)	
7. Jute	6,019	6,693	6,400	6,670	5,754	7,171	6,670	4,193	6,514
8. Mesta	n.a.	n.a.	n.a.	n.a.	n.a.	220	131	93	110
								(million lbs)	
9. Tea	54	60	63	65	62	67	69	22	53
10. Tobacco	63	60	84	86	90	91	86	76	87

Source: Bureau of Agricultural Statistics, Ministry of Agriculture.

Table V-3 Yield of Main Crops in Bangladesh, in maunds (82.27 lb.) per acre.

	Average 1960-61/ 1964-65	1965-66	1966-67	1967-68	1968-69	1969-70	1970-71	1971-72	1972-73
1. Rice									
(a) Aus	10.5	10.8	10.4	10.2	9.5	9.5	9.9	8.6	8.5
(b) Aman	12.7	12.6	11.5	12.6	13.0	12.7	11.3	11.9	10.8
(c) Boro	13.1	14.8	16.2	19.7	21.8	23.7	24.6	22.0	20.2
Total	12.1	12.1	11.4	12.2	12.6	12.6	12.2	11.8	11.4
2. Wheat	6.7	6.8	8.7	8.3	8.6	9.3	9.6	9.9	8.2
3. Gram & Pulses	7.5	7.9	8.3	8.4	8.5	8.7	8.7	8.2	7.7
4. Edible Oil Seeds									
(a) Rape & Mustard	4.8	5.7	6.7	6.2	6.2	6.6	6.7	5.1	6.0
(b) Groundnut	17.7	19.0	16.3	17.2	17.7	17.3	16.0	14.8	14.0
Total									
5. Potato	67.6	88.1	94.5	100.3	101.8	111.0	110.0	106.0	107.0
6. Sugarcane ^{a/}	420.0	540.0	535.0	490.0	490.0	504.0	516.0	442.0	452.0
7. Jute	16.9	14.8	14.3	13.8	12.9	14.2	14.7	12.1	14.3
8. Tea	8.2	7.3	7.6	7.9	6.8	7.4	7.6	2.4	5.8
9. Tobacco	7.6	6.6	9.3	9.5	9.9	10.0	9.5	9.2	8.8

^{a/} These official yield figures of sugarcane are considered to be too high by the Bangladesh Sugarcane Corporation and by the IBRD 9 Volume Sector study. Reasonable yield may be between 2/3 and 3/4 of these official figures.

Source: Bureau of Agricultural Statistics, Ministry of Agriculture.

Tables V-4 Rice: Area, Production, Yield.

	Area in Million Acres			Average Yield Per Acre in Maunds (82.27 lb)			Production in Million Tons					
	Aus	Aman	Boro	Total	Aus	Aman	Boro	Average	Aus	Aman	Boro	Total
1947-48	4.90	13.35	0.76	19.01	7.9	10.1	11.5	9.6	1.43	4.98	0.32	6.73
Average 1950/51 - 54/55	5.71	11.34	0.83	20.88	8.7	10.1	10.8	9.8	1.83	5.34	0.33	7.50
Average 1955/56 - 59/60	5.84	13.48	0.79	20.11	9.0	10.6	11.7	10.2	1.94	5.23	0.34	7.51
1960-61	6.30	14.58	1.01	21.89	10.8	12.3	12.1	11.8	2.50	6.57	0.45	9.52
1961-62	5.87	14.08	1.01	20.96	10.8	12.8	12.9	12.3	2.33	6.65	0.48	9.46
1962-63	5.19	14.22	1.07	21.48	11.5	11.6	12.2	11.1	2.20	6.05	0.48	8.73
1963-64	6.59	14.60	1.07	22.26	11.0	13.6	13.0	12.8	2.66	7.29	0.51	10.46
1964-65	6.64	15.11	1.05	22.80	10.2	13.1	14.8	12.3	2.50	7.26	0.57	10.34
5-Year Average	6.32	14.52	1.04	21.88	10.5	12.7	13.1	12.1	2.44	6.76	0.50	9.70
1965-66	7.32	14.67	1.14	23.13	10.8	12.6	14.8	12.1	2.92	6.80	0.62	10.33
1966-67	6.96	14.06	1.39	22.41	10.4	11.5	16.2	11.4	2.67	5.92	0.83	9.42
1967-68	8.22	14.68	1.53	24.43	10.2	12.6	19.7	12.2	3.07	6.81	1.11	10.99
1968-69	7.66	14.40	2.01	24.07	9.5	13.0	21.8	12.6	2.68	6.87	1.61	11.16
1969-70	8.46	14.84	2.18	25.48	9.5	12.7	23.7	12.6	2.96	6.95	1.90	11.81
5-Year Average	7.72	14.53	1.65	23.90	10.1	12.5	19.9	12.2	2.86	6.67	1.21	10.74
1970-71	7.88	14.18	2.42	24.48	9.9	11.3	24.6	12.2	2.86	5.91	2.19	10.96
1971-72	7.42	13.00	2.20	22.62	8.6	11.9	22.0	11.8	2.34	5.69	1.78	9.81
1972-73	7.24	14.12	2.43	23.79	8.5	10.8	23.2	11.4	2.27	5.59	2.07	9.93

Source: Bureau of Agricultural Statistics, Government of Bangladesh.

per acre per year for these years respectively.) The introduction of new seed and irrigation has allowed the growing of three consecutive rice crops on one piece of ground (an index of 300) but this is occurring on less than one million acres.

Land ownership patterns are the primary determinant of who benefits from the process of agricultural modernization. In the late 1960's, 66.5% of the country's 6.8 million farmers owned and farmed their own land, only a scant 3.6% were pure tenants, and the remaining 30% leased land in addition to their own. The vast majority of the country's 22.4 million cultivable acres (out of a total of 33 million acres) are therefore in the hands of their owners. Fully one quarter of all farms are less than one acre in size. 48% of all farms are less than 2 acres; 75% are less than 4 acres; and 88% of all farms are less than 6 acres (see the land distribution and tenure Tables V-5 and 6). In the late 1960's approximately 7-8% of all agricultural households, or a million families, were landless, and if one includes those with less than half an acres, the near landless, the number of such families has most certainly doubled. Since Independence some researchers have estimated that the proportion of laborers who are landless has grown to 40%. To compound matter, though nearly 80% of the nation's 27 million laborers are in agriculture, agricultural production presently requires only 13 million man-years of employment; unemployment and underemployment are endemic.

Soon after Partition the Zamindar system was broken up which leveled the extremes in land distribution. The Land Holding Order of 1972 further limited individual holdings to 100 bighas (33 1/3 acres). To put this land reform in perspective it should be noted that about 25,000 farmers have farms of more than 33 acres, for a total land ownership of 600,000 acres, or 3% of all land. Muslim inheritance laws dictate that land be divided among all children; 90% of all farms are fragmented and 29% are broken up into 10 or more scattered pieces. 97% of the few farms with 12 acres or more are fragmented. (Rahman, et al, "Land Fragmentation in East Pakistan Farming", Mymensingh 1969 p. 2) The country is farmed in half acre pieces. While farm land is fairly well distributed by international standards and farms are small, the distribution of rural power and therefore resources is largely determined by the rural elite. It is worth noting however that most of the rice and jute is grown on medium to small farms and their crop yields and intensities are higher than those of larger farms. (Master Survey of 1967 - 68.)

Table V-5 Farm Size Distribution - Cumulative Total of Number and Percentages of Farms by Size in Bangladesh During 1967-68.

Size of Farms (in acres)	Number of Farms (in '000)	Percentage	Area by Possession (in '000 acres)	Percentage
All Size	6,870	100.00	21,563	100.00
Under 0.50	842	12.26	250	1.16
0.50 to under 1.00	1,715	24.96	914	4.14
1.00 to under 1.50	2,588	37.66	2,016	9.35
1.50 to under 2.00	3,264	47.51	3,195	14.82
2.00 to under 2.50	3,890	56.63	4,597	21.32
2.50 to under 3.00	4,411	64.22	6,037	28.00
3.00 to under 3.50	4,832	70.35	7,408	34.36
3.50 to under 4.00	5,154	75.04	8,624	40.00
4.00 to under 4.50	5,500	80.08	10,101	46.85
4.50 to under 5.00	5,697	82.95	1,059	51.29
5.00 to under 5.50	5,892	85.78	12,084	56.04
5.50 to under 6.00	6,022	87.68	12,827	59.49
6.00 to under 6.50	6,134	89.31	13,539	62.79
6.50 to under 7.00	6,247	90.96	14,304	66.34
7.00 to under 7.50	6,329	92.15	13,890	69.06
7.50 to under 10.00	6,571	95.68	16,945	78.59
10.00 to under 12.50	6,689	97.40	18,237	84.58
12.50 to under 25.00	6,838	99.56	20,599	95.53
25.00 to under 40.00	6,863	99.92	21,311	98.83
40.00 and above	6,868	100.00	21,562	100.00

Note - Total may not agree with the components due to the rounding off.

SOURCE: Master Survey of Agriculture 1967-68, M.S.A. Report No. 9, Bangladesh Bureau of Statistics, Dacca.

Table V-6 Farm Size Distribution by Tenure Type - 1967/68

Percentages of Number and Area of Farms by Tenure and Size During 1967-68

Size of Farms (in acres)	Total		Owner Farm		Tenant Farm		Owner-cum-tenant Farm	
	No. of Farm	Area by Possession	No. of Farm	Area by Possession	No. of Farm	Area by Possession	No. of Farm	Area by Possession
1	2	3	4	5	6	7	8	9
All size	100.00	100.00	66.48	58.40	3.56	3.33	29.96	38.27
Under 0.50	12.26	1.16	11.11	1.02	0.67	0.07	0.48	0.06
0.50 to under 1.00	12.70	3.08	10.48	2.50	0.52	0.13	1.70	0.45
1.00 to under 1.50	12.70	5.11	9.08	3.65	0.42	0.17	3.20	1.29
1.50 to under 2.00	9.85	5.47	6.21	3.43	0.34	0.19	3.30	1.85
2.00 to under 2.50	9.12	6.50	5.59	3.97	0.23	0.16	3.30	2.37
2.50 to under 3.00	7.59	6.68	4.14	3.62	0.17	0.15	3.28	2.91
3.00 to under 3.50	6.13	6.36	3.33	3.46	0.27	0.28	2.53	2.62
3.50 to under 4.00	4.69	5.64	2.63	3.19	0.11	0.13	1.95	2.32
4.00 to under 4.50	5.04	6.85	2.74	3.74	0.15	0.21	2.15	2.90
4.50 to under 5.00	2.87	4.44	1.53	2.42	0.08	0.12	1.26	1.90
5.00 to under 5.50	2.84	4.75	1.68	2.80	0.13	0.23	1.33	1.72
5.50 to under 6.00	1.90	3.45	0.98	1.79	0.04	0.07	0.88	1.59
6.00 to under 6.50	1.63	3.30	0.92	1.01	0.06	0.09	0.65	1.30
6.50 to under 7.00	1.65	3.55	1.07	2.32	0.06	0.12	0.52	1.11
7.00 to under 7.50	1.19	2.72	0.50	1.14	0.04	0.07	0.65	1.51
7.50 to under 10.00	3.52	9.53	1.99	5.39	0.11	0.31	1.42	3.83
10.00 to under 12.50	1.72	5.99	1.05	3.68	0.06	0.21	0.61	2.10
12.50 to under 25.00	2.16	10.95	1.26	6.36	0.08	0.43	0.82	4.16
25.00 to under 40.00	0.36	3.30	0.15	1.36	0.02	0.19	0.19	1.75
40.00 and above	0.08	1.17	0.04	0.64	-	-	0.04	0.53

SOURCE: Master Survey of Agriculture, 1967-68, M.S.A. Report No. 9, Bangladesh Bureau of Statistics, Dacca

The availability of some time series data on land holdings make it possible to give a sense of dynamics to rural Bangladesh, particularly to the impact that a large and rapidly growing population, and land purchases, are having on land distribution. These data do record the affect of population on the land though we have to admit that such variations may be accounted for by statistic errors. By using a population estimate of 55.3 million in 1961 and 72.3 million in 1971 (IBRD), and a net cultivable acreage of 18.8 and 20.0 in 1961 and 1971 respectively, we obtain an arable land-man ratio change from .34 acres to .28 acres; a decline of 18% in a decade. The amount of land available per agriculture laborer has registered a greater decline; from 1.25 acres in 1961 to .97 in 1971, and to .89 acres in 1973 - a 30% drop in 12 years. The total cropped area per person decreased from .575 acres in FY 60 to .468 acres in FY 70 and is expected to drop to .40 by the end of the FYP (IBRD). This is occurring despite the increase in multi-cropping. According to A. R. Khan the average farm size has declined from 3.5 to 2.6 acres between 1960 and 1968. Nearly two thirds of all farms are below this average farm size. Master Survey data document a shift of 20% more land into the farm size categories of 5 acres and less. However measured or caused, it is striking that land distribution changes before Independence are apparent over relatively short periods of time. Since Independence no national land surveys have been conducted, but spot checks by the Government and by researchers of land records offices strongly suggested that the redistribution of land upwards is accelerating.

This descriptive review provides some statistical complexion to rural Bangladesh and is suggestive of both the character of the problems that need to be addressed, and the avenues open for their solution.

Expanding the Use of Agricultural Inputs

The distribution of modern agricultural inputs is almost entirely in the hands of the public sector. The Ministry of Agriculture's Agricultural Development Corporation (ADC) is responsible for the expanded supply of fertilizers, farm power machinery, pesticides and irrigation pumps. Credit is distributed by various public and cooperative organizations. While little can be seen of a "Green Revolution" at the aggregate level except for the boro crop, the manifold increase of input use indicates that the new seeds are popular (see Tables V-7 and 8).

Table V-7 Fertilizer, Pesticide, and Agricultural Credit Coverage

1. Fertilizer, th tons

	64/65	69/70	70/71	71/72	72/73	73/74 (target)
Urea	71.1	196.5	212.4	168	269.5	274
Total	101.6	291.1	306.4	252	374.8	466
in tons of nutrient	45.4	132.7	140.8	111.0	171.4	215.4

2. Plant Protection, in millions of acres sprayed (actuals)

	68-69	69-70	70-71	71-72	72-73
Total - all crop	9.4	9.9	9.4	8.9	11.6
Pesticides, tons	3,000	5,132	4,005	4,002	7,000

3. Agricultural Credit by Source, in millions of takas

	Cooperative Bank	IRDP	Agricultural Development Bank	Commercial Banks	Others	Total
1971/72	64.1		96.4		163.5	324.0
1972/73	153.4		179.0		60.0	392.4
1973/74	190.0	105.0	130.0	30.0		455.0
1974/75	250.0	150.0	165.0	55.0		620.0
1975/76	340.0	205.0	200.0	90.0		835.0
1976/77	490.0	270.0	255.0	140.0		1,155.0
1977/78	670.0	387.0	350.0	220.0		1,627.0

Source: IBRD

Table V-8

Projection of Rice Cropped Area Irrigated by Different Systems

	1969-70 a/			1977-78 b/				
	Number	Boro & Aus 000' Acre	T. Aman 000' Acres	Total 000' Acres	Number	Boro & Aus 000' Acre	T. Aman 000' Acres	Total 000' Acres
Low Lift Pumps	17,844	639	-	639	45,000	1,820	675	2,495
Deep Tubewells								
(1) BADC	1,000		30	30	10,000	350	500	850
(2) BWDB	365		55	55	365	5	60	65
Shallow Tubewell	-		-		10,000	70	150	220
Major Projects			100	100		60	300	360
Private			13	13		30	40	70
Sub-total		639	198	837		2,335	1,725	4,060
Traditional		1,440	-	1,440		1,200	-	1,200
Total		2,079	198	2,277		3,535	1,725	5,260

a/ Estimates based on various reports of BADC, BWDB and IRDP.

b/ Mission projection.

Note: The net area irrigated by a given technique is the larger of either the Boro plus Aus irrigated area or the T. Aman irrigated Area. The gross area irrigated is the sum of these areas.

Source: IRD, Bangladesh-Development in A Rural Economy.

The use of high yielding varieties has expanded from their first introduction in 1966 to 2-2.5 million acres in 1973/74. The local adaptation of these new seed from Los Baños is insuring much greater yield responsiveness to chemical fertilizers, and tolerance to pests and diseases. The Accelerated Rice Production Program in the mid 1960's was designed to spread IR-20 for the aman season and IR-8 for the irrigated boro season to fill the annual food deficits which loomed larger each year. With the breeding in of elongation characteristics, additional new rice varieties will better withstand deep water. Irrigation and the new seed explain the increase in the multi-cropping index from 120 in 1959/60 to 146 in 1969/70. The country's seed research and delivery institutions are beginning to tackle the job of ensuring seed quality and their wide availability.

Fertilizer sales were 11,000 MT in FY 56, 66,000 in FY 61 and 306,000 in FY 71 (a 12% annual growth rate). By the end of the Plan period in FY 78 fertilizer consumption is projected to be in the range of 850-1150 thousand MT. Despite a domestic fertilizer capacity of 440,000 MT the actual production in FY 73 was only 180,000 tons. The country's TSP capacity is 150,000 tons but the shortage of rock phosphate and the other problems have kept the plants inoperative. All muriate of potash has to be imported. The country's heavy dependence upon fertilizer imports will lessen when a third urea plant comes on stream in three or four years, and Ghorasal is repaired. Plant protection coverage has increased from 300,000 acres in FY 60 to 11.6 million acres in FY 73.

Irrigation in Bangladesh presents a manifold problem for no single agency or technology ensures water control for the whole country. For four or five months of the year a third of the land receives too much water for normal irrigation and for two to three months too little. Much of the country requires a combination of irrigation systems to ensure that land is available for cultivation year around and to free the farmer from having to be completely at the mercy of the annual monsoons and dry periods. Of a total 33 million acres, 22.4 million can be cultivated. Eight to ten million acres are presently multi-cropped each year under existing cropping patterns. Two million acres are flooded to such a depth that only a dry season crop can be grown, and another six million acres of flooded land, shallow enough for aman, are too dry the rest of the year for a second crop without irrigation. The irrigation-cropping intensity potential therefore exists in several directions: jute and

deep water rice varieties can be expanded in some areas where flooding cannot be controlled; they can be expanded to areas with gravity irrigation where flooding can be controlled; and to areas with lift irrigation from surface and ground water when the flood waters recede. The Government is clearly showing greater interest in the smaller, less capital intensive dry season irrigation schemes which presently irrigate about 1.4 million acres. The ADC's shallow tube scheme is a good example of this.

The supply of agricultural credit from public and cooperative sources is growing but still only accounts for a small proportion (15-20%) of the rural credit supply from traditional sources. The entry of commercial banks (now nationalized) into agricultural credit is ensuring better financial discipline as evidenced by the 90% recovery rate, in comparison to an average rate of 50%, for the 1974 boro loans.

The Five Year Plan projects an increased irrigation coverage of 4.13 million acres by FY 78 from the present 1.36 million acre bench mark. The IBRD estimates that only half this additional area can be covered and then in ten, not five years as projected by the Plan. Large scale projects presently irrigate 80,000 acres which is less than .1% of the cultivable land and less than a quarter of the projects' designed coverage. Low lift pump coverage has been much less costly to achieve and with better results. Coverage has grown from 110,000 acres in FY 61 to 1,230,000 acres (6% of the cultivated areas) in FY 73, and is projected to cover 1.82 million acres in 2-3 years. Deep tube wells irrigated 70,000 acres in FY 73 and are projected to cover 900,000 acres by FY 78. The coverage of the smaller "shallow" tubewells is presently low but is expected to grow to 220,000 acres by the end of the Plan.

This generally favorable input pictures belies the task of sufficiently increasing agricultural production each year to stay ahead of population growth. The FYP projects a growth rate of 4.6% per year for agriculture as a whole from the 1969-70 bench mark year. Using the poor crop year of 1972/73 as a base this implied an annual growth rate of 8.4%. Experience in other crop regions of the world indicates that a rate of more than 4% cannot be sustained. The average annual rate in the 1960's varied between 2 and 3.6%. The loss of the Ghorasal urea plant compounds an already staggering task. We will discuss this problem later in this chapter.

Institutions Organizing People - A Historical Perspective

Overlaid on rural Bangladesh is an elaborate array of developmental institutions. The Bangladesh Government has inherited a myriad of rural outreach programs - some fifty in all - installed during the 1950's and 1960's as the means of effecting then current agricultural strategies. As a fortuitous consequence the country now has a foundation of production and distributive oriented programs in place upon which an aggressive agricultural strategy can be based.

In the 1950's the agricultural strategy placed emphasis on the use of U. S. type extension agents to teach improved production methods. The lack of well trained agents, the paucity of useful pre-HYV information for them to convey, and their insufficient numbers forced the Government to seek another approach. Later in the 1950's another strategy known as Community Development came into vogue. This approach, called Village Aid in Pakistan, took the extension approach a step further. A mixture of sociology and psychology was applied to practical village affairs and institutions by district level "catalytic agents." For nearly a decade, 1954-1964, this community development approach dominated the scene in Pakistan. In many isolated areas, the approach made an impact, but it was neither sufficient nor comprehensive enough to prevent the stagnation of the agriculture sector and consequent food shortages in the fifties and early sixties. The bureaucracy censured the program and the economic planners were disillusioned. The most vocal (and, at least in their own eyes, vindicated), of the critics were the original agricultural extension advocates, who demanded a return to their once primary role.

The advent of high yielding rice varieties and modern irrigation techniques in the late 1960's saw the abandonment of the Village Aid program and its replacement with production oriented programs - the return of the extension agent, the Accelerated Rice Production Program and the Thana Irrigation Program. Attempts to reach the rural masses had therefore come full circle, from extension to community development and back to extension.

Since its inception in 1904 the cooperative movement in Bangladesh has remained relatively aloof and uninvolved with

governmental attempts to effect rural development. However, in the early 1960's 4000 union level Multi-purpose Societies were organized at a hierarchical position between the village and the thana center, to extend credit for agriculture and other rural enterprise. This structure like Village Aid was once again too distant from the mainstream of village farming and so only served the rural elite. While the extension approach and Union Societies dominated the 1960's, in at least one district of East Pakistan a different approach was conceived and thrived - a decade of revision and experimentation was underway in Comilla, and the new approaches synthesized there are now being replicated to many of the thanas in Bangladesh.

The Government's Comilla thana pilot experiment, begun in 1959, was a marked departure from previous approaches to rural development for it strived to combine production with improved coverage. The Pakistan, now Bangladesh Academy for Rural Development evolved a strategy for rural development based on village level research. The Academy concluded that anything done on behalf of the rural populace could succeed only if it arose directly from their felt needs, their own capacity to plan and administer, and that in this context the Government can provide only supporting services. The strategy that evolved was therefore founded on the pragmatic interaction between the rural people participating through their own organizations -- elected local government institutions and cooperatives -- and the government agencies which provide training, extension and the supply of inputs. This model and rationale for rural institutional planning, tested on a pilot basis in Comilla district during the 1960's, are now the foundation of much of rural institutional development in Bangladesh today. The Academy remains affiliated with the institutions it founded and continues to provide the basic training and guidance for their strengthening and expansion.

Thana Level Institutions for Rural Development

In the early 1960's, following the collapse of Village Aid the Government of East Pakistan concluded that one of the basic weakness of earlier programs was the absence of an effective development administration at a level low enough for meaningful interaction with villagers. The district, from which the Village Aid program had been run, had proven too remote from the villagers,

and the union, of which there are 4355, might be ideal as a point of village contact would be too costly for the Central Government to reach. Thus it was decided the thana would have to become the focus of interaction, Roughly equivalent to a county in the United States, the 416 thanas of Bangladesh have an area of 100-150 square miles and an average population of about 180,000. Based on this decision, a thana development administration under the Ministry of Local Government, Rural Development and Cooperatives was built in the 1960's. Since Independence, the new government has not significantly changed this concept. Thana government in the past meant the police station and the revenue office, and before that the Amindari Kuchurry (land tax collection office). The new public offices are being established in the Thana to provide both a new symbol of government, and of development contact for Thana citizens.

- The Thana Training and Development Center

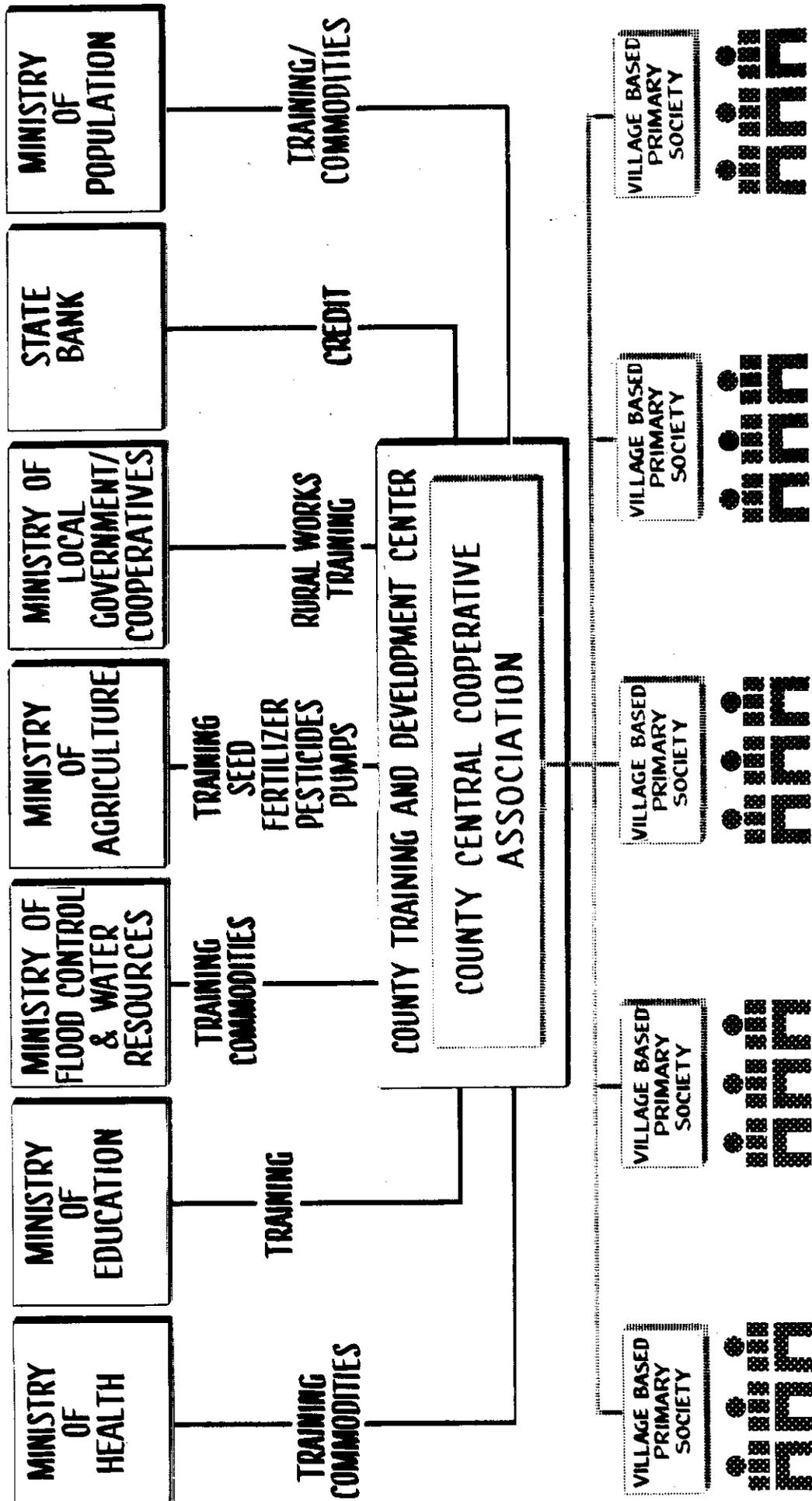
The Thana Training and Development Center (TTDC) was formed in each of the country's thanas in the early 1960's and is the principal public institution designed to organize and ~~serve~~ serve farmers. Here cooperatives and private citizens gain access to governmental officers representing 12 to 15 central government ministries - agriculture, rural development, family planning, education, livestock, health, etc (see Chart V-9). The Thana Circle Officer - Development - C.O. Dev. as he is called - serves as the chief executive of the TTDC. He coordinates the activities of all ministry officers posted at the TTDC, and oversees their interaction with the elected Union Councils. In addition, he is to serve as the Secretary and principal implementing agent of the Thana Council, a group to be elected from the unions of the thana, for the purpose of formulating the development policy of each TTDC.

In addition to this thana model, the Comilla Academy contributed ~~four~~ other program concepts which operate through the TTDC and are now either in use or are to be expanded to other thanas.

- The Thana Central Cooperative Association

Of all the offices and programs represented at the TTDC, one stands out as being the most important in terms of expanding the new seeds technology - to more farmers. The Thana

GOVERNMENT INFRASTRUCTURE AND THE TWO TIER COOPERATIVE



Project Officer (TPO), a relatively recent addition to the TTDCs of Bangladesh, (TPOs now operate in 152 thanas) is charged with introducing and operating the two-tiered cooperative structure first developed in Comilla district in the early 1960's by Dr. Akhtar Ahmed Khan of the Academy. The TPO organizes village cooperatives (primary societies) and a thana level cooperative federation, known as the Thana Central Cooperative Association (TCCA). A TCCA objective is to see to it that its village membership represents all farmers, particularly the small. The village cooperatives meet once per week, formulate their crop production plans, make their savings deposits, arrange their crop credit needs, and annually elect an accountant, a manager, and a model farmer. The latter two go once a week to the TTDC for supplies and services including credit and training. These leaders are to become in turn change agents - extension agents from within - at their village level cooperative societies. The overall program with which the TPO deals is called the Integrated Rural Development Program (IRDP) about which more will be said shortly.

The achievements of the TCCA concept to date are hard to specify. Because of its focus on production and the inputs that are made available to it, yield increases in TCCA areas have been good. It is hard to say whether the cooperative system, in addition to the inputs, was needed to ensure this record, and if so, at what cost. The TCCAs' efforts to include small farmers have been less successful, for, as membership is open to all farmers, the larger soon command the TCCAs. The most that can be said is that the distribution of income in TCCA thanas appears not to have deteriorated.

Model Farmer Training is the extension component of the cooperative system and provides the communication link between the TCCA and its primary society members. (This Model Farmer program is becoming the Government's nonformal education system for the delivery of information to its citizenry.) The concept of Model Farmer Training was developed in an effort to find a more cost effective alternative to the traditional agriculture extension network of the Ministry of Agriculture. Model Farmer Training has important development implications as the program provides for the election and participation of primary society members -- three from each village-based cooperative -- to attend weekly training courses at the TTDC and who in turn are to carry the training messages back to their fellow farmers at

the village cooperatives. The ability to eventually reach most farm families in a TCCA thana with information and instructions regarding nutrition, birth control, crop diversification, multi-cropping, improvement of irrigation command areas and marketing can be an important factor in improving incomes and welfare. A principal drawback of this Program to date has been the lack of these kinds of interesting messages needed to attract greater attention and participation.

- The Integrated Rural Development Program

The raison d'etre of the Integrated Rural Development Program (IRDP) is the creation of a sociopolitical institutional structure at the TTDC that will make it possible, short of regimentation, for twice the present rural population to live and work productively on the scarce land of Bangladesh. The TCCA concept is the production oriented vehicle by which this task is to be implemented. The IRDP - TCCA model is to be extended to 250 thanas in the first Five Year Plan period. At present 152 of Bangladesh's 416 thanas are covered by the IRDP with 12,817 affiliated Village Primary Societies and approximately 340,000 members. Since Independence, 139,600 members have joined Primary Societies. As this cooperative infrastructure and staff are now in place in these 152 thanas, and as these cooperatives are given preferential treatment regarding the supply of inputs (i. e. the wholesaling of fertilizer), the Government expects membership to grow considerably. By the end of the FYP the total membership in 250 thanas, with 39,000 Primary Societies, is projected to be 2,600,000.

It is projected that the C.O. Dev. will eventually act as the thana coordinator for all developmental activity at the TTDC level. In the 152 thanas where the IRDP has been introduced, the relationship of the TPO and C. O. Dev. remains undefined, in part because the Government's next step in its rural decentralization process-that of the Union Council elections-has been put off. In addition, the activist IRDP Program has been viewed by older thana officials, including the C. O. Dev., as an encroachment upon their developmental activities. In order to get on with the development work of the thana until elections are held, a de facto body of union council members and thana officers is being considered.

- The Rural Works Program

The RWP is the best known of the several rural institutional innovations so it need not be detailed here. In summary the resource commitment to the RWP during 1962/63 to 67/68 was Rs 894 million which generated 173,000 man-years equivalent of employment each dry season, and 22,000 miles of new roads, 3,740 miles of embankments, 9,030 miles of drainage and irrigation canals, and a similar amount of maintenance work. These minor projects spent 70 to 80% of their costs on labor.

The Program's success in the past has led to its projected expansion into other areas of construction in post Independence Plans, including tank reexcavation, building construction, a greater emphasis on irrigation as opposed to roads, and storage and market facilities. In the past 8% of the RWP funds went for irrigation; this is now to be jumped to 75%. The new Program is envisioned as having four basic components. The Integrated RWP stresses irrigation, storage facilities and roads. Secondly the Thana Irrigation Program (TIP) is now included under RWP and for which the RWP will provide training and construction of irrigation workshops and storage facilities. The third and fourth areas are to be tank reexcavation and the development of market facilities at village "hats". The Government may propose the organization of landless laborers within the RWP (and possibly the TCCAs) to ensure employment for landless laborers.

(Test Relief which is often mentioned in conjunction with the RWP, is an old non-developmental, rural purchasing power oriented union relief program administered by the Relief Ministry. It is designed, according to its British originated name, to "test" the need for below market rate wage work when crops are poor. Its token productivity in the form of water hyacinth clearing projects etc. often gives way to cash grants.)

- The Thana Irrigation Program

The Thana Irrigation Program is another Comilla Academy contribution to institutional development - to the organization of farmers for the use of technologically indivisible pieces of irrigation equipment. TIP cooperative members are supposed to prepare HYV production plans to maximize the command area of a two cusec low lift pump. The groups cover the operating costs while the Bangladesh Agricultural Development Corporation (BADC)

pays the pump drivers' salaries and the capital costs - an arrangement that until recently characterized all the Government's agricultural mechanization schemes. Largely because of generous subsidies and the misinterpretation of the TIP's original operating directives, the organizational rigor, but not the irrigation benefits, of the TIP, is now moribund. These groups are cooperatives in name only as most of them are controlled by a few larger farmers.

This complex of institutions depends heavily upon the distribution of new seed, modern inputs, and an energized personnel. Agricultural seed research is being conducted by the Bangladesh Rice Research Institute, the Agricultural Research Institute and the Jute Research Institute. Each of these have substations where adaptive work will be conducted and foundation seed will be grown. Personnel training was provided before Independence by a network of institutions -- seven Agriculture Extension Training Institutes, the Cooperative College of Comilla, the Rural Development Training Institute at Sylhet, the Bangladesh Academy for Rural Development at Comilla, and various other institutions pressed into service on an ad hoc basis. These are slowly being reactivated.

The proper functioning of this interrelated complex of rural institutions is predicated upon the expansion of the new seeds technology and the training of vast numbers of public officials. For the lack of input supplies to meet demand, and a rural bureaucracy that remains in the doldrums, these institutions have yet to operate as they were originally envisaged. The expansion of the Academy's innovative institutions to the entire country is far from complete, nor have they entirely displaced preexisting programs; the older agricultural extension system and the Multi-purpose Union Societies remain. It will require many years for these newer programs to establish their effectiveness and for the thana political and development structure to sort itself out.

(The reader is referred to the recently completed August 1974 ILO/SIDA Report on the IRDP for a detailed discussion of many of the institutions touched on here.)

Looking Ahead - The Government's Agricultural Strategy

The Five Year Plan recognizes the importance of the new seeds technology as the central vehicle for effecting the Plan's

multiple rural goals of increased agricultural production, income and employment, the distribution of income, of agricultural exports and of nutritional well-being. The four specific objectives in the Plan period are foodgrain self-sufficiency, employment creation, nutritional improvements and the improved distribution of rural income. The last objective is recognized as being multifaceted and complex; primary emphasis is placed upon the concentrated but wide spread use of HYV, upon the existing rural institutions and upon the Works Program. The need for policy changes is also acknowledged; to encourage labor intensive techniques, reduce subsidies and to include landless laborers in economic enterprises. The Plan also singles out the growth of rural industry and nutritional improvement as two avenues by which the distribution of income can be improved.

The Five Year Plan sets foodgrain self-sufficiency within the Plan period as the primary national as well as agricultural, development objective. To accomplish this target foodgrain production has to be increased by 6.4 percent per year over the next four years or by 36% in total. To achieve this target the Government plans to: (a) expand multiple cropping practices through the use of irrigation and flood control measures, (b) increase yields per acre; and (c) increase the use of the new seeds technology.

Part one of this strategy, more intensive cultivation, can only be accomplished gradually over many years. The total land area of Bangladesh is 33 million acres of which 22.4 million acres are cultivated. It is estimated that only 8-10 million acres of this cropped area are presently multiple cropped. Of the remaining cultivable acres, flooding is a serious constraint and will require major flood control programs. Most of the available land that is not multicropped at present, or is subject to annual flooding, is too dry the other half of the year to produce an additional crop. Therefore irrigation projects are also needed to ensure water for dry season irrigation. Programs for the expanded use of low lift pumps, shallow and deep tubewells are underway in parts of the country.

Part two of the strategy, increasing yields, is a road to quicker results but is dependent upon the efficient delivery of agricultural services. Average yields per acre in Bangladesh are among the lowest in the world. Fertilizer usage is low,

pesticides cover only 15% of the cropped area and irrigation covers barely 5% (1,200,000 acres). To improve yields the Government intends to concentrate on rice production, first by increasing the acreage under high-yielding seed varieties from 2.3 million to 9.0 million acres, and secondly, by providing these areas with necessary inputs of fertilizer, plant protection materials, and credit.

The third part of the strategy is integrally linked with the other two parts and is the principal means for their accomplishment - the institutional framework as discussed in a previous section is charged with reaching the nation's rural citizenry with effective delivery systems and sufficient resources. According to the Plan, the Government is relying on existing institutions, on the agricultural extension system and on the formation of additional TCCA cooperatives, as the principal medium for organizing rural Bangladesh.

In the future the Rural Works Program is to concentrate heavily on the construction of small-scale irrigation facilities, and secondarily on farm to market roads and village market facilities. The Plan proposes that rural savings be mobilized by asking Union Councils to repay 50% of their Works allocations in annual installments to the Central Government. Complementing this overall framework of cooperatives, input delivery systems, and Rural Works program are the central and regional agricultural research institutions.

- Agricultural Programs in FY 1974 and FY 1975

The Five Year Plan was written soon after Independence (some would say too soon) which did not allow adequate time for the Government to properly assess the state of the economy and of its institutions. In the process of formulating the Plan's rural development chapter there was a tendency to draw upon the rural programs of 60's without taking cognizance of how they were in fact functioning then or since. As a consequence the Annual Plans since Independence have had to become increasingly realistic. The FY 75 ADP devotes a major section to a review of FY 74, and based upon this review, attempts to spell out a pragmatic assessment of development priorities in FY 75.

The country experienced very good aman and boro harvests in FY 74 despite a crop production target shortfall of 6.3% and the lack of fertilizer and credit supplies. (This last crop

season emphasizes the point that the timing and amount of the monsoon will continue to have a very great impact on harvests.) The distribution of inputs was less helpful; only 400,000 MT of fertilizers were distributed against a target of 478,000 MT. Cooperatives recovered Tk 16 crore (30%) of the Tk 57 crore of loans overdue, and disbursed less than half of their projected new credit target. The low lift pump distribution target was reportedly achieved while the deep and shallow tubewell targets achieved 10% and 25% of their targets respectively. The IRDP program was expanded by 65 thanas to a total of 152 in FY 74.

The FY 75 ADP agricultural program has no general statement of goals and objectives, but its sectoral discussions indicate a greater production-irrigation oriented strategy. The rice production target is to be achieved by a strategy of yield and multicropping increases. The supplies of seeds and inputs are to be improved and rural institutions and extension services are to be strengthened, but little mention is made of the landless or small farmers. The Plan recognizes that 10% of the rice production comes from the irrigated 8% of the acreage yet the irrigation target has been curtailed to reflect the realities of implementation.

The high yielding variety acreage is to be increased from 2.3 to 3.0 million acres. The fertilizer target is to be increased 25% from 400,000 to 500,000 MT. The Rural Works Program (including the Thana Irrigation Program) is to be focused on irrigation to contribute to foodgrain self-sufficiency. The Tk 8 crore expenditure level for the RWP in FY 75 (excluding TIP) compares unfavorably with the previous year's disbursement level of Tk 14 crore. The IRDP's expansion of 50 additional thanas outlined in the Five Year Plan will not take place in favor of a consolidation of existing TCCAs. While the Annual Plan once again raises the problem of landless laborers and the dominance of the elite run primary cooperative societies over the smaller farmers, little is said about how this problem is to be overcome.

We have included the individual agency expenditures budgeted for FY 74, for FY 74 (actuals) and for FY 75 in Table V-10. Such a budget presentation does not fully support the FY 75 priorities mentioned above because of the following shortcomings: allocations are for agencies, and not projects or commodities;

Table V-30 FY 74 and FY 75 Annual Plan Allocations for Agriculture, Rural Institutions and Irrigation, in taka lakh*

I Agriculture	FY 74 Provision (ongoing and new)		FY 74 (est. of actual)		FY 75 Provision (ongoing and new)	
Min. of Ag. (Proper)	35.20		26.26		84.60	
Dir. of Ag. (Res.+Ed.)	153.90		9.60		209.03	
Dir. of Ag. (Ext.+Mech.)	338.70		163.55		393.00	
Aerial Plant Protection	58.20		40.00		54.30	
Dir. of Ag. Mkt.	18.30		3.90		20.58	
Dir. of Soil Survey	13.70		5.00		20.10	
Ag. Info. Ser.	9.00		-		11.50	
Ag. Census	3.00		4.61		30.00	
B. Rice Res. Insti.	121.00		121.00		173.00	
B. Insti. of Bio. Con.	2.50		2.50		2.00	
B. Jute Res. Insti.	143.26		114.70		131.50	
Horticulture Dev. Bd.	69.60		66.65		76.00	
Tobacco Dev. Bd.	51.00		12.50		34.77	
Cotton Dev. Bd.	6.00		3.50		5.00	
B. Sugar Mills Corp.	50.00		9.00		39.29	
Tea Bd.	10.00		-		5.00	
B.A.D.C.	2257.10		6224.00		3632.00	
B. Warehousing Corp.	123.07		-		-	
Food Min.	112.50		171.61		136.10	
Min. of For., Fla., & Liv. St.	1.00		-		1.24	
Forest Dir.	306.77		148.45		244.21	
B. For. Ind. Dev. Corp.	200.00		365.32		115.00	
B. Paper & Bd. Corp.	45.00		50.00		125.00	
Dir. of Fisheries	255.20		133.70		219.01	
B. Fisheries Dev. Corp.	363.50		236.21		255.17	
Livestock Dir.	365.00		132.24		166.35	
Ag. Res. & Ed.	87.50		-		-	
B. Ag. Res. Council	-		21.00		33.00	
Min. of Plan./P.C.	-		-		83.25	
Ag. Total	5200.00	10%	8065.30	20%	6300.00	12%

* 1 lakh = Tk100,000 or \$12,600 at \$1 = Tk7.9

II Rural Institutions	FY 74 Provision (ongoing and new)		FY 74 (est. of actual)		FY 75 Provision (ongoing and new)	
A. Min of LG, ED & Coop.						
IRDP	522.00		410.84		400.00	
BARD	110.30		70.37		83.00	
Bogra	40.00		13.00		20.00	
Coop. Dev.	483.00		211.87		333.47	
BWP (including TIP)	2150.00		1775.00		1825.00	
Urban W.P.	-		-		100.00	
Local Govt. Insti.	16.00		14.36		16.00	
Planning Cell	-		-		11.70	
B. Min. of Land Adm. & Land Reform	18.70		18.70		60.83	
C. Min. of B+R	500.00		-		-	
Rural Institutions - Total	3840.00	7.4%	2514.14	6.3%	2850.00	5.4%
III Flood Control and Water Resources						
B. Water Dev. Bd (studies + projects)	3140.00		2791.00		2800.00	
B. Ag. Dev. Corp.						
Power pump irrigation	964.20		2707.50		1684.00	
Deep tubewell irrigation	2459.00		2313.90		3054.13	
Shallow tubewell irrigation	236.80		429.40		186.87	
	<u>3660.00</u>	52.3%	<u>5450.80</u>	64.5%	<u>4925.00</u>	61.6%
Irrigation Dir. (studies + projects)	200.00		172.12		200.00	
Planning Commission	-		1.33		23.00	
Survey of Bangladesh	-		30.00		52.00	
Flood Con. & Water Res. Total -	7000.00	13.5%	8445.25	21.1%	8000.00	15.3%
IV Nutrition						
Nutrition Program	-		-		4.00	
Institute of Nutrition	-		-		5.00	
Totals for I, II, III, IV	160,40.00	30.8%	190,24.69	43.0%	171,50.00	32.7%
ADP Totals	520,00.00		400,00.00 (est.)		525,00.00	

Source: FY 74 and FY 75 ADP abstracts.

some of these funds are for establishment costs like salaries; and some of the amounts allocated in part represent the subsidy cost which an agency has to pay to cover the difference between the c.i.f. price and the ration price. (An example of this is the B. A. D. C. whose FY 74 allocation increased from Tk 23 crore to Tk 62 crore because of the increased c.i.f. prices of fertilizers, pesticides and irrigation equipment.) To compound matters the reduction of subsidies in FY 75, and use of less costly capital equipment both have the effect of undervaluing actual project activity in some areas.

Notwithstanding these factors the FY 75 ADP does not show an increased allocation for rural development. While the agricultural share jumps from 10% to 20% in FY 74 because of the input subsidy burden, the FY 75 allocation is only 12%. (This 12% suggests that unrealistic assumptions may have been made about the import cost of fertilizer.) It would appear that a large proportion of the agricultural budget for forestry, fisheries and livestock (18%) is not warranted, in comparison with the 5% for jute and rice, even if judged on a foreign exchange earnings per unit of investment basis. Rural Institutions were cut during FY 74 from 7% to 6.3% and the FY 75 allocation is 5.4%. The Tk 480 lakh allocation for IRDP and BARD is consistent with the decision not to expand IRDP coverage this year. Even irrigation shows only a slight increase from 13% to 15% but the subsidy reduction disguises the real increases in project activity mentioned in an early section of this chapter. Because of the subsidy-unit cost question it is hard to say whether BADC increased its allocation for pumps and wells in FY 75.

The miniscule allocation for nutrition of Tk 9 lakh would be dramatically increased, as it should be, if we added in portions of the expenditures on agricultural research, on crop diversification and the model farmer program.

When all the rural programs are taken together the FY 75 allocation for them is increased from 31% of the FY 74 ADP to 33% of the FY ADP. In reality, we would expect this share to be in the neighborhood of the 48% FY 74 actual, again because of c.i.f. prices, higher fertilizer imports because of Ghorasal, and because of the construction of the Ashuganj Urea Plant (which falls in the industrial sector). We will review the overall sector priorities in Chapter 8.

In the last year the Government appears to have been able to make more policy changes on the production side than on the institutional side of rural development. While the FY 75 ADP quite rightly has curtailed the expansion rate of the IRDP to new thanas (and cuts its FY 75 allocation), the suspension of the thana elections and other political problems have prevented the revitalization of rural institutions. On the production side the Government has made notable changes in the prices of agricultural inputs. While the percentage increase in the domestic fertilizer price has been high, the dramatic increase in the cif price of fertilizer imports means that the actual subsidy remains high (see Table V-11). Prior to April, 1974, all pesticides were free but since then a new rule has been established that the farmer cost is to be one half of the cif price; or Tk 2 per seer (kilo) for granulars and Tk 8 per seer for liquids.

In mid 1974 the Government also announced an altered set of water subsidy rates. For all irrigation schemes members are now to be responsible for the pump "drivers'" salaries, and for all operating, maintenance, and parts costs. For shallow tube wells and low lift pumps the capital cost fee is increased from Tk 300 to 600 per unit. While the capital cost remains almost fully subsidized, the other steps are very significant for they place the responsibility where it belongs, and with it, the motivation to increase command areas. The Government is also allowing the credit sales of shallow tube wells directly to private persons and cooperatives, which removes the direct capital cost subsidy except for that implicit in the over-valued currency.

Past AID and Other Foreign Donor Assistance for Rural Development

Although the total developmental investment in East Pakistan during the period from 1947-1971 is regarded by authorities as inadequate to deal with the region's specific development problems, it did amount to the substantial sum of approximately \$1.3 billion for agriculture and water development. In addition, approximately \$200 million was spent during this period for Rural Works and related programs. These gave the new nation of Bangladesh some significant, though flawed, assets.

Two major caveats require mention concerning these development assets. On the one hand there was a long period from 1947 to 1960 in which the rate of development was very slow. This tended both to retard the growth of East Pakistan's absorptive

Table V-11

Fertilizer Prices, in taka per maund (82.3 lbs)

	FY 72	FY 73	FY 74	FY 75	cif cost ^{1/}
Urea	10.12	20.00	30.00	50	125 (\$425)
TSP	10.02	14.50	20.00	40	105 (\$350)
MP	6.37	10.00	15.00	30	80 (\$270) est.

1/ Estimated average for FY 75 at official rate

capacity and to create implementation problems when resources did begin to flow into the region at a quickening pace.

On the other hand, up until the Third Five Year Plan, much of the planned investment did not consistently address the development problems of what was then East Pakistan. The complicated physical environment of the area required very special study and experimentation. Generally, the developmental programs chosen under the Plans were those concerning conventional infrastructure and institutional growth. While useful, they did not represent a carefully calculated look at the growth opportunities of East Pakistan. Only with the implementation of the Third Five Year Plan in 1965 did investment levels increase; but this development came too late to affect the choice of major program strategies.

Thus, for example, by 1970 almost \$132 million had been expended on a project like the Ganges-Kobadek irrigation and flood control activity. But after 16 years of construction, redesign, and reconstruction the project still failed to perform at even 50 percent of the original design standard. Since almost half of this expenditure of funds came from foreign donors, this project demonstrated the dangers of improper strategic planning in the context of the particular physical conditions of East Pakistan. These dangers seemed to have affected donor initiatives during the 1955-70 period.

Evidence on this point among donors is demonstrable by the U. S. Government's scale as well as pattern of assistance to East Pakistan. Of the \$1.5 billion mentioned above, our ~~project~~ assistance from 1955 to 1971 for agriculture and water totalled approximately \$30 million in foreign exchange. This constituted (excluding foodgrain assistance and commodity loans) only about 2% of the total developmental expenditure in agriculture and water for the whole period. Our relatively modest grant and loan level had many causes. No the least of these, however, arose out of our concern over center-initiated growth strategies and program implementation schemes contained in the First and Second Five Year Plans of Pakistan. Only when the Third Plan began to emphasize the special circumstances of East Pakistan, and the political climate became more favorable, did the level of our assistance begin to rise. Even so, considering the expanded aid from the Central Government and other donors, it did not rise in direct proportion.

Thus, in the First Five Year Plan of 1955-1959 a total of about \$98 million went into agricultural, water, and rural development activities in East Pakistan. Of this amount, \$4 million came from the United States in the form of technical assistance, grants, and loans.

Starting with the Second Five Year Plan the pace of expansion accelerated enormously. From 1960-65, developmental expenditures for agriculture, water, and rural development amounted to the Rupee equivalent of \$490 million. While our assistance increased during this Plan it did not proportionately match what was happening on the West Pakistani side. AID loan, grant, and technical assistance moved upwards to a total of \$7 million but still represented a further falling behind in terms of the proportions devoted by foreign donors and loan agencies to East Pakistan. These, such as UNDP, IDA, IBRD, Australia, and the Federal Republic of Germany, contributed about \$50 million to agriculture, water, and rural development activities during the Second Five Year Plan.

But a significant change began during this period. Each agency or donor began to focus on only certain points of emphasis concerning agriculture, water, and rural development. Thus, for the AID, the reclamation, protection and development of productivity in 3.5 million acres of southern coastal lands became a major program. So also did the development of an agricultural university, and improvement in the irrigation, farming, agricultural extension, and pest control activities of the provincial agricultural authorities.

This trend became more obvious in the Third Five Year Plan. A total of \$564 million in development expenditure was devoted to agriculture, water, and rural development. AID assistance rose to more than 2% of the total or about \$11.5 million. While this latter sum held approximately steady with the aid of other donors it was, again, increasingly focused on what appeared to be key growth needs in agricultural, water, and rural development.

The principal AID assisted projects emerged as: rural works planning, cooperatives, and small-scale irrigation works development; improvement in the agricultural research capacities of the Agricultural University at Hymensingh; a Ground Water Survey of the country; Seed Potato Storage and Multiplication;

and expanded rice production in East Pakistan. These projects continued into the period of the Fourth Five Year Plan and were either completed or terminated at Independence.

United States assistance during these last stages of East Pakistan's development in agricultural, water and rural development could best be characterized as:

- Supportive of rural institutional decentralization; i.e., cooperatives, Thana Irrigation Projects, Rural Works, etc;
- Assisting development of basic data needed to support relatively quick-gestation projects such as Groundwater Hydrological surveys required to assist tubewell development;
- Providing further developmental assistance for larger-scale water projects specifically related to Rural Works or labor-generating activities such as the Coastal Embankments of southern East Pakistan; and
- Maintaining a nucleus of technical assistance skills useful to the Department of Agriculture concerning irrigation farming, agricultural extension, and agricultural economics.

Other donors agencies of that time had also developed certain spheres of emphasis and concentration. In very general terms these may be best characterized for some of the major donors as:

- IBRD: - Major as well as multiple-purpose irrigation and flood control activities.
 - Agricultural industry-related processing, marketing, and storage: e.g., jute processing and grain storage.
 - Basic survey work such as a long-term assessment of soil and land capabilities.
- IDA: - Farmer-oriented, quick-gestation, water supply systems: e.g., low-lift pumps and tubewells.
 - Agricultural industry-related processing, marketing, and storage; e.g., tea machinery and irrigation development.

- Improvement in some of the cropping inputs: e.g., pest control services expansion.

Ford Foundation - Support for innovative systems of cooperative organization, e.g., assistance to Comilla Academy.

- Improved research in High Yielding Rice.

UNDP

- Technical assistance in support of long-term developmental requirements particularly in agriculture and water, e.g. assessment, with IBRD and FAO of soil and land capabilities; development of a Forestry Research Institute; creation of a Center for the Organization and Development of the Jute Industry, etc.

Today, USAID and other major donors are now sorting out what strategies they plan to follow as they endeavor to assist the current agricultural, water, and rural development priorities of the Bangladesh Government. As yet, it is too early to draw a definitive listing of what the various donors may ultimately decide to do in terms of specific project support. We do know that the IBRD plans projects in rural training and education, in thana development including TCCAs and Rural Works, and the Bogra Academy. SIDA and the Danes are assisting IRDP; Ford Foundation is assisting ~~IRRI and IARD~~; and the UNDP is providing technical assistance in a wide range of rural activities. The voluntary agencies are moving rapidly from relief to development projects, and are focusing on rural institutional and technological experimentation.

Assessment of the Government's Agricultural Strategy and Our Recommendations

It is all too obvious that the twin challenge of production growth and employment creation, in the face of this large and rapidly growing population, are not being met. It is also obvious that no "marginal" adjustments here and there are going to close these food production or employment gaps. First, while the Five Year, ~~projects~~ a foodgrain production growth rate of 6.2% per year, during the mid-fifties to mid-sixties rice

production grew by 3.6%, and by 2.0% from the mid-sixties to the present (IBRD). Per capita grain availability figures (see Table IV-5) document the fact that population growth has been outstripping food production. The IBRD in its recent report makes the case that a 3.5 - 3.9% growth rate of rice production is the best that can be achieved. Secondly, the Bank states that the best that can be hoped for an agricultural employment growth rate is half the rate of agricultural production itself. (It is precisely because of this low rate that we stress the operative condition - returns to labor.) In light of the above production rates, a labor force growth rate of 4.5%, and the calculations by Zaman and Mellor (Table IV-4), it is clear that marginal adjustments are not going to close the employment gap either. The task ahead is of staggering but not hopeless proportions. The key rests with country's political commitment to production growth, to employment creation, and most importantly, to population control.

The Five Year Plan's present strategy and allocations for agriculture are obviously in need of careful review. Our criticisms and qualifications of the Plan strategy do not add up, however, to its radical alteration. An underinvestment in agriculture - in both political and economic terms - does not necessarily make the case for qualitative reform. In this context we indicate in the following pages where, according to the priorities suggested in this model, policy and program changes would be desirable. Admittedly our analysis does not encompass a line by line discussion of ADP allocations within agriculture nor have we done the basic arithmetic needed to document the production and employment potentials of alternative agriculture programs.

In the following sections specific policy and program proposals that follow from this model are listed for Government and donor review. Several of these proposals would obviously have to be preceded by project studies. By implication we would be interested in discussing AID assistance in any of these areas with the Bangladesh Government; in fact many of these are already being discussed.

(1) Crop Production

The Plan's focus on yield and multicropping increases

makes eminent good sense for the potential for growth here is very high. This technical potential needs to be translated into reality.

(a) Agricultural Inputs - The public institutions for the supply of agricultural inputs are in place but continue to be plagued by problems of timely imports and delivery. The nation's natural gas needs rapid exploitation. A long term study is needed of the country's input needs and its capacity to fulfill them by imports and domestic manufacture. Given the magnitude of fertilizer and pesticide use implied by this model, the projected environmental impact of this use needs study.

(b) Subsidies - Policy changes on this matter have been encouraging and need to continue. The irrigation subsidy remains massive and its complete removal will de facto represent a major mobilization of private resources.

(c) Irrigation - Ground water surveys are needed to delineate the potentials for various irrigation systems. Small scale schemes must be given larger foreign exchange allocations. Private sales and a rural educational campaign will improve irrigation command areas. Experimental work is needed on smaller scale, even hand powered, water lifting devices in order to ensure small farmer access to this vital input. Emphasis upon new major water schemes should be drastically reduced until international cooperation has been assured. Coastal embankments are important but their benefits are heavily dependent upon integrated management of both water and agricultural systems.

(d) Agricultural Research - Given the urgency of increasing food production on as much land as possible ERRI's deep water rice research should be given the highest priority. The Agricultural Research Institute needs to strengthen its capacity to offer improved varieties of other crops. The Government is giving priority to jute research. All research and outreach institutions need to pay more attention to farmer acceptance, and to the employment and income affects of different cropping patterns.

(e) Appropriate Technologies - Except for the Rural Works Program the Government does not have a concise statement or means of implementing the Plan's employment creation objective. Such a capacity is important for reasons detailed in the previous chapter and because the full employment potential of agricultural

production is not being achieved. Yield and multicropping increases hold the country's greatest potential for employment creation. Yet the importation of tractors continues despite evidence that nearly a million acres of land can be planted to three HYV rice crops per year without requiring mechanization to break power and/or timeliness constraints. This foreign exchange can be better spent. The establishment of the Appropriate Agricultural Technologies Task Force is a step in the right direction, one of many needed, to provide the Government with the empirical work and policy authority to implement employment creation objectives. We will continue to support this initiative by the Bangladesh Agricultural Research Council.

(f) Rural transportation systems, over and above those of RWP, need to be improved and expanded.

(g) Smuggling is a very burdensome form of taxation that cuts supplies of food needed by the poor, undermines efforts to broaden agricultural participation, and exacerbates the price situation.

(2) Nutrition

The record of remedial nutritional programs is not an encouraging guide for the task at hand is nutritional well-being nationwide. Past approaches to nutrition have been greatly influenced by the crisis-relief conditions under which they have been designed and implemented. They are costly per recipient and are designed for easily contacted small groups. For the country as a whole it appears that what foods are available are not well distributed. The very poor who need nutritious foods either can not afford to buy them or if farmers, must concentrate their resources on grain (calorie) production. To compound matters children, pregnant and lactating mothers in Bangladesh, as in many other countries, are discriminated against at meal time. We therefore take an entirely different approach to nutritional well-being.

Much of the discussion in Chapter IV and the program priorities that flow from it will have an impact on nutrition and represent this altered approach. In order to implement such an approach the following specific nutritional projects should receive emphasis:

(a) Education - Nutritional well-being is dependent upon vastly improved nutritional knowledge which can be provided via available information and education channels. Production and knowledge must go together. Evidence suggests that economic well-being does not ensure nutritional well-being, nor can nutritional knowledge alone ensure healthy children.

(b) Women - Women can play a multiple role in improving the nutritional well-being for themselves and their families. Through cooperatives and extension training they can be taught to grow, market, and prepare a wide range of foods, including tank-grown fish, and in turn can more directly see to it that their children are better fed.

(c) Nutrition Strategy - The country needs a realistic nutrition strategy and the wherewithal to implement it. An Institute for Nutrition is included in the FY 75 ADP. Specific national nutritional deficiencies need to be approached through education channels and agricultural research and extension.

(d) There are qualifications to this largely rural oriented nutrition strategy. Food supplements may be needed for the urban poor. Examples are fortified wheat and possibly tea, and the iodization of salt. (Relief food problems are discussed in Appendix C.)

(3) Rural Institutions

The country's rural institutions, evolved through several manifestation, have been meeting their respective objectives with increasing success. But the problems facing Bangladesh would be a serious challenge to any institutional strategy. Present domestic programs need to be galvanized into action and to narrow their focus further on agricultural production.

(a) Thana Level Government - We have not made an effort to analyze all the intricacies of thana development and administrative offices. We do sense that the thana level government is a useful compromise between the village and Dacca. It is also clear that many of the country's developmental objectives and priorities cannot be left to private institutions and to the market mechanism. Public involvement at the thana-village level is critical to the achievement of rural development. The remaining drawback is the lack of political support to energized

and sustain the institutions that are by-in-large in place. There appears to be an unwillingness - hopefully temporary - to support the degree to which developmental decentralization took place in the 1960's. The continuation of what would appear to be the political indifference to the plight of the country's rural institutions will be an increasingly production-only oriented rural development strategy.

(b) The TCCA - The two-tiered cooperative system on the whole has been successful but its pre-Independence problems remain. Membership should increase with the increased allocations of modern inputs through the cooperative structure. The allocation of fertilizer to the TCCAs for their exclusive retailship is a step in this direction. The membership of the smaller farmers needs to be increased by removing loan collateral requirements and by reserving a certain proportion of the membership for them.

Problems such as loan recovery rates and interest rates on loans and savings cannot be effected except by the Central Government. The loan recovery problem is essentially political. The entry of commercial banks into this field is an excellent step and warrants rapid expansion. Technical assistance is needed to improve the management and financial operation of the entire TCCA structure.

(c) Agricultural Credit - In order of priority we give the wide spread availability of new seed and modern inputs first importance, credit next, and then storage and marketing. Prior to the use of HYV, credit was emphasized to break the hold of traditional money lenders. With the introduction of HYV, credit becomes, in our view, somewhat less important. At present however, poor farmers need credit more than ever to withstand the continued pressures of very high prices, short supplies, floods and crop losses, which lead inexorably to landlessness. (This unfortunately reopens the door on credit as a relief measure.

(d) The Participation of Women - The present cooperatives do have women's groups; Dr. Akhtar Hameed Khan was an early advocate of their participation. As with other activities we would urge the use of cooperatives and education channels, to extend female participation in economic activities such as textiles, vegetables, and other crops and services.

(e) The Participation of Poorer Groups - As mentioned above the TCCA structure needs modification of its membership system to ensure inclusion of small farmers. Several cooperative projects in Bangladesh have shown that it is possible to get large farmers to accept the inclusion of small farmers and landless labors in a production co-operative, in exchange for assured supplies of modern inputs to all members. The larger farmers do suffer a loss in their proportionate income but not their absolute income as a result; their alternative for example is to do without an irrigation pump for the boro season. This cooperative concept has merit and should be tried by the Government, possibly in new areas along the coast.

(f) Rural Institutional Research - As the rural scene shows promise of changing faster than present institutions can broaden their membership, BARD, the Bogra Academy, and other research institutions need to be engaged in on-going field research to anticipate problem and suggest innovative institutional forms.

(g) Rural Information - The flow of relevant material to the population is an underutilized means to improve human welfare and productivity. The effectiveness of various channels and the development of relevant materials needs inter-ministerial priority and coordination. (This subject is dealt extensively in Chapter 7.)

(h) The Model Farmer Program is conceptually a more fruitful approach to the dissemination of agricultural information than the older agricultural extension system. In the short-term however we would give such systems secondary importance behind the increased supply of new seed and agricultural inputs. Laying the foundations for such an outreach effort is nonetheless important now, particularly if coupled with nonformal education.

(i) Career Structure for Personnel - A long ignored area is that of rural staff salaries, conditions and careers. It is this "last man" in the chain of developmental processes who is so critical and yet is often overlooked. The Government recognized this but the problem needs greater attention.

(4) Land Reform

The economic case for land reform is clear, though we

do not underestimate the administrative and political difficulties inherent in such a measure. Stabilizing the present distribution of rural assets and income would be a major accomplishment in itself. For this purpose mechanisms need to be found to: discourage land sales (possibly by preventing certain types of land purchases from being officially recorded); prevent the village elite from owning newly formed land as others lose theirs due to erosion, and to alter the barga share-cropping system in favor of the tenant.

Because it is immediately obvious that these suggestions are inoperable, economic stability in terms of supplies and prices, and then a radical land reform are the only meaningful solutions to this land problem.

On a small technical note it is worth mentioning that aerial photography has become sufficiently accurate and detailed to greatly simplify the task of actually delineating property boundaries and ownership by field personnel.

(5) The Rural Works Program

The Works Program takes on added significance because of the importance our strategy places on income and employment expansion, and the need for rural infrastructure such as minor roads and particularly irrigation. Even if the Program's decentralized administration cannot be reestablished, its expenditures need to be returned to their pre-Independence levels, if not higher. We would urge that the Program reemphasize its labor intensive projects and that the 50% repayment requirement, village market development and other pucca construction proposals be deemphasized or dropped. The 50% repayment scheme is administratively very cumbersome and its burden would fall heavily on laborers. Pucca works should be left either to the private sector or to other public agencies. To the extent that the new Works Program involves a lot of commodities and contracts the Program's original purpose - minor works and village employment - may be lost sight of. Other aspects of the R.W.P. are discussed in Appendix C. AIL welcomes the opportunity to once again become involved in a new R.W.P., as it was in the 1960's.

(6) Market Towns

The case was made for the development of market towns in Chapter IV and the Five Year Plan acknowledges their importance for employment creation. Nonetheless relatively little is known about how to actually stimulate their development. Small-scale industrial development in the past has been promoted with subsidized interest rates and with the provision of industrial infrastructure in industrial parks. This record has had mixed results. In the 1960's the Government of East Pakistan established eighteen estates spread throughout the Province but at present very little manufacturing is taking place. The planning for market town growth is a new and high priority activity.

- The provision of technical, and possibly market, information at the thana and district town level may be a way to give local businessmen product ideas. The Bangladesh Small Industries Corporation could play an expanded role here.

- The provision of physical infrastructure, particularly high fixed cost items such as land, power, and a functioning communication system, may represent the removal of greater bottlenecks to business expansion than is appreciated. These overheads in the past have been provided in the industrial estate context; to reach smaller business units the decentralization of this overhead needs to be examined.

- As most of the consumer and producer goods oriented firms are raw-material intensive there may be some scope for the allocation of foreign exchange and licenses by product type and region.

The importance of these potential marketing-manufacturing centers requires an understanding of how these growth processes work and how public policies can encourage private entrepreneurial activity. The Government should consider the establishment of an authority to study this multi-ministerial activity with an eye to public guidance of market town growth in the near future. Past public efforts to develop industrial estates need evaluation as do the private growth processes already in evidence in towns such as Dinajpur, Mymensingh and Comilla.

(7) Foodgrain

Following on the rather theoretical discussion of food in Chapter IV, more needs to be said of a practical nature. As is true of the several sectors discussed in this paper, food policy changes are of as great an importance as the actual food project suggestions themselves. In the case of food probably more so. Foodgrain imports will continue to be a necessary part of the economy until such time as the country has adequate grain production levels and stocks to meet demand and emergencies.

(a) Smuggling must be stopped, and procurement drives must receive much greater emphasis.

(b) Rural income generation needs to be stressed in order that laborers can earn, and farmers retain, foodgrain. This is the only way to get at the problem of starvation amidst plenty. At present the calculated food deficit is assumed to be urban in nature when in fact it reflects the inability of the poor to purchase available supplies. The Rural Works Program, Test Relief, and agricultural production programs in general, address this problem.

(c) The food deficit must continue to be calculated on the basis of aggregate demand and supply (and not simply on the needs of the ration system) which serves to strengthen the case for agricultural production and domestic food procurement.

(d) The ration system should be gradually altered to serve the very poor, to stabilize grain prices and to meet emergencies. Middle class rationees should be gradually forced to rely on the private market.

(e) The Government should encourage an expanded role for private grain dealers by improving relevant policies and infrastructure. Market studies would usefully serve this end.

(f) On-farm storage and drying technology needs attention so that farmers and not local rice traders can retain the windfall profits inherent in seasonal prices variations. Grain storage and drying are the two most common problems mentioned by farmers. (Cooperative efforts in this direction should be forewarned however that the interests of individual members may not coincide

with those of their cooperative; cooperative storage cannot be a mechanism to force loan repayment.)

In many of these areas there is scope for technical assistance but progress will depend primarily upon a changed perspective on food; from political to development.

AID Projects and Allocations - Present and Future

We need to survey our past and projected aid expenditures in agriculture in light of the foregoing priorities. In Chapter 8, we will review the overall proportions of the Government's expenditures and ours, in agriculture, and other sectors, to give us some sense of inter and intra sector allocations and implicit priorities.

During the first 18 months of Independence we committed the following grant assistance to the agricultural sector:

- We allocated \$37.8 million for agricultural inputs: fertilizers, \$33.738 million; pesticides, \$2.690 million; and IR-20, \$1.404 million.

- Through voluntary agencies we allocated \$10.6 million for various types of cooperative and production related activities (CRS \$5.0, CARE \$4.7, IVS \$3.7 and WRC \$3.2).

- The agricultural projects included Coastal Embankments (\$22.025 million), Ground Water Survey (\$.890 million), vegetables seeds (\$.585 million), Rural Rehabilitation (\$4.680 million) and agricultural training of various types (\$.194 million). The Rural Rehabilitation project provided funds for construction, training, and equipment, and technical assistance for the TCCAs, and for the rehabilitation of the Model Farmer Program.

In FY 74 we have committed funds for:

- Agricultural inputs - loan (\$25.0 million);
- A Development Services and Training Grant (\$1 million)

which provides funds with which the Government can contract for its own technical assistance in agriculture; and

- A Project Studies Grant (\$1 million) which provides grant funds for project development.

In FY 75 we plan to commit funds for:

- A urea fertilizer plant - loan (\$30.0 million);
- Agricultural inputs - loan (\$30 million);
- Agricultural Research grant (\$.5 million);
- Private Voluntary Organizations Grant - grant (\$.25 million);
- Appropriate Agricultural Technologies - grant (\$175 thousand); and the continuation of the
- Development Services and Training Grant (\$.5 million) and the
- Project Studies Grant (\$.5 million).

In FY 76 we are tentatively thinking in terms of the following projects and amounts:

- Agricultural inputs - loan (\$25 million);
- Rural Works - loan (\$25 million);
- Agricultural Research - loan (\$4 million);
- Polder Management and Maintenance - loan (\$2 million);
- Development Services and Training Grant - (\$.5 million);
- Appropriate Agricultural Technologies - grant (\$.2 million);
- Nutrition Research and Planning - grant (\$.2 million);
- Agricultural Research - grant (\$1.0 million);

- Karnaphuli III Unit - loan (\$1.0 million) ;
- Voluntary Agencies - grant (\$.5 million); and
- P.L. 480 Title II - grant (\$.6 million).

We will discuss these actual AID allocations in the context of our priorities and those of the Government, in Chapter 8.

Chapter 6

Population

- Health

- PAGES 101-103 MISSING -

Chapter 6

Population

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Chapter 6

Population Control

Introduction

The participation of the rural population in the processes of agricultural growth is both an objective and a requirement of our developmental model. But the numbers and productivity of the rural labor force directly affect the quality of this participation and of real per capita income earnings. At present, the large and growing population seriously compromises the ability of the rural population to participate in these growth processes.

A population planning strategy interrelated with the agricultural growth model is suggested. The model highlights the cost of an unchecked population growth rate. It also argues that with massive developmental actions, production, employment, and incomes can grow faster than population. This in turn can fuel cumulative growth processes in several directions, as detailed in Chapter IV.

This chapter provides an outline of the circumstances in Bangladesh which signal a need to address the serious problem of population growth. Government efforts to deal with this problem are reviewed. An expanded approach to population control is discussed and selected intervention points targeted at direct and indirect determinants of fertility are identified. Various foreign donor assistance to the Government's population program is also outlined, as is proposed future A.I.D. population program assistance.

While the health system is discussed in a separate sub-section of this chapter, the health delivery system is identified and treated throughout the chapter as an integral part of the family planning program and the Government's chosen base for the delivery of family planning services.

We do not argue the case for an integrated health and family planning program versus a vertical family planning program as part of the population control effort. We choose instead to identify

with a population planning strategy which is multidimensional. A strategy which relies on rural outreach programs and includes preventive health care, information, and education programs keyed to the social and biological features of Bengali rural life in order to direct programs at intervention points for fertility control.

We recommend a number of tactical measures designed to implement such a strategy.

Aspects Of The Population Problem

(1.) Population Parameters

In the past decade increasing numbers of governments have adopted policies and programs aimed at rapid reduction of human fertility. These official interventions to effect social changes of unprecedented scale and scope are in response to rapid population growth rates of most developing countries.

Bangladesh is one of the countries embarked on such a course. The sheer arithmetic of the demographic situation in Bangladesh underscores the urgency of success and of the difficulties of inducing a social change of the magnitude required. The following are some commonly cited parameters of the Bangladesh population:

- 75 million people at mid-year 1974;
- 3% annual rate of natural increase (Crude Birth Rate 47/1,000; Crude Death Rate 17/1,000);
- 23 years doubling time;
- Total Fertility Rate: 6.2 (average number of live born children per woman in a reproductive lifetime);
- over 45% of the population aged fourteen years and under;
- 2½ million annual net addition to total population;
- 800,000 annual net increment to labor force;
- density: 1,400/square mile; about 3 persons per acre of cultivated land;

- . over 90% of population rural (i.e., in communities less than 5,000);
- . about 80% of population illiterate (1961);
- . maternal mortality rate: 7/1,000 livebirths; and
- . infant mortality rate: 130/1,000 livebirths.

It is a demographic fact of life that no matter how quickly Bangladesh achieves replacement-level fertility (i.e., a 2.4 child family), the population will double. This is due to the momentum of growth inherent in Bangladesh's age structure. The longer replacement fertility is delayed, the more certain the prospect of tripling or quadrupling before stabilization. The only intervening circumstance that would prevent this outcome is a rise in the death rate. The IBRD tables on the following page show the advantage, in terms of population magnitude, of achieving replacement-level fertility as soon as possible. The first projection is based on a probable rate of fertility decline. The second is based on achieving the Five Year Plan target of replacement-level fertility in thirty years.

(2.) Effects Of Population Growth

Earlier chapters of this paper described the economic context within which Bangladesh's already densely settled population continues to grow. A rapidly expanding population denominator compounds the difficulty of achieving real gains of per capita income. Per capita food consumption drops as does the amount of land available per laborer. The demand for social investments - education, health, public transport, housing, urban services - escalates in order just to maintain the present, already inadequate, standard of living, disregarding for the moment the existing backlog of unmet needs in these areas. Similarly, the competing requirements for capital investment continue to increase--for creation of new jobs and to meet the ever-expanding needs for consumer goods, export earnings, and savings.

The following selected estimates give an impression of the magnitudes of capital and social investment requirements for the annual net additions to the population and for current unmet needs. Costs of maintaining and replacing existing facilities are additional.

In June 1974, according to Government figures, approximately 30% of the labor force of nearly 26 million were unemployed or

POPULATION PROJECTION: PROBABLE ^{a/}

	<u>1973</u>	<u>1978</u>	<u>1983</u>	<u>1988</u>	<u>1993</u>	<u>1998</u>	<u>2003</u>
Total Population (millions)	74.0	86.1	99.9	114.7	129.4	145.0	161.7
Males	38.0	44.2	51.3	58.9	66.5	74.4	83.0
Females	36.0	41.9	48.6	55.8	63.0	70.5	78.6
Crude Birth Rate (per thousand population)	47.0	45.5	41.9	36.0	32.0	30.0	29.7
Crude Death Rate (per thousand population)	17.0	15.4	13.0	10.7	8.9	8.1	7.4
Growth Rate (%)	3.00	3.02	2.89	2.53	2.31	2.20	2.22
Total Fertility Rate	6.40	5.90	5.33	4.62	4.01	3.63	3.48

POPULATION PROJECTION: PLAN ^{a/}

	<u>1973</u>	<u>1978</u>	<u>1983</u>	<u>1988</u>	<u>1993</u>	<u>1998</u>	<u>2003</u>
Total Population (millions)	74.0	86.0	97.5	107.6	116.9	126.1	135.1
Males	38.0	44.1	50.0	55.2	60.0	64.8	69.4
Females	36.0	41.9	47.4	52.3	56.9	61.4	65.8
Crude Birth Rate (per thousand population)	47.0	43.1	33.0	27.8	24.0	22.6	20.4
Crude Death Rate (per thousand population)	17.0	15.2	12.1	10.1	8.7	8.1	7.6
Growth Rate (%)	3.0	2.79	2.10	1.77	1.54	1.45	1.28
Total Fertility Rate	6.40	5.57	4.09	3.33	2.72	2.45	2.22

^{a/} Figures relate to January 1. Details do not add up to totals because of rounding.

under-employed. The annual net increment to the labor force is estimated at about 800,000.

In 1973, approximately 8 million of 20 million school-age children were enrolled in school. There were about 32,000 primary schools and 7,000 secondary schools, leaving an unmet backlog of 73,000 schools if all school-age children were in school. The annual additional requirement of schools is 10,000 to accommodate those entering school age each year. Similarly, an annual increment of 60,000 teachers would be needed, in addition to over one-half million more who would be required if all school-age children were now in school. Today, however, only 7,000 primary and 2,000 secondary teachers are graduated annually from teacher training institutions.

No data are available on present housing needs, but the annual population increase would indicate a minimum requirement of over 280,000 units every year.

Some density statistics have already been cited. In 1960 the average farm size was 3.5 acres; in 1968 it was 2.6 acres. Land per agricultural laborer has diminished: 1961--1.25 acres; 1971--0.97 acres; and in 1973--0.89 acres (est).

These factors, in the context of a capital-scarce economy and with the prospect of a doubled population in about 23 years, underscore the urgency of an aggressive population control program.

(3.) Factors Influencing Fertility

The nearly universal practice of prolonged breast feeding in Bangladesh, combined with other factors as yet only hypothesized, contribute to an average period between live births of greater duration than in most populations not generally practicing contraception. A two-year prospective study of 200 women in one thana found an average birth interval of 33 months. (Chen, et. al., Feb. 1974.) Much of this interval (45%) was accounted for by an unusually long period of postpartum amenorrhea (17 months), which is associated with lactation. The general health and nutritional status of child-bearing women is suspected of playing a role in delaying the onset of menses and ovulation but is as yet undocumented.

There is a dearth of reliable documentation of the social, psychological, and economic factors affecting people's fertility behavior in Bangladesh. However, there is no lack of firmly held opinions on the reasons people have the number of children they actually have or would like to have. Many of these are based largely on impressions, on perceptions of traditional values which

may or may not be valid, and on generalizations from a few cases or from the findings of small studies of questionable validity. At the same time, many of them, listed here, seem intuitively to be "right" in this preponderantly traditional society.

. High value is placed on sons. A son ensures the continuity of the family. He keeps the property in the family and participates in its defence in conflict situations. He is an asset from an early age and later provides support of his aged parents. A daughter, on the other hand, while she may be loved, traditionally is permitted only to assume domestic roles. An unmarried daughter learns to perform the traditional women's household tasks but is not acknowledged as contributing to the family economy. Her marriage is expensive, and she becomes part of her husband's family after marriage. If she is divorced and cannot stay with her father-in-law or brother-in-law, she must return to her father or her brother for support and protection. In brief, the current and future welfare of the family is seen as depending on sons, not on daughters.

. In traditional Bengali society, the only way for a woman to achieve status is as a wife and mother--most especially the mother of sons. Her inferior status is further reflected in the imposed constraints on communication on sex-related matters with her husband. Persons working with rural women report that the latter often say they don't want to have another pregnancy, but they dare not initiate such a discussion with their husbands. Any decision to stop having children appears to be the man's prerogative in the majority of Bengali households.

. To have a large family is expected behavior. There is strong community approval of large families.

. Marriage is almost universal. The average age at marriage for girls is believed to have risen to 15 or 16; men's ages at marriage are about ten years older, on the average. For men, divorce and remarriage are easy. (According to some women leaders, it is easier for a man to replace his wife than the cow that pulls his plow.) Divorced women are permitted to remarry; their marriageability depends on their age, appearance, reputation, and how many children they have.

. Infant and child mortality rates are still high in Bangladesh. The community experience of infant and child deaths may lead parents to estimate survival chances of their children and overshoot reproductive goals.

. It is not known whether Bengali parents conceptualize additional children in cost/benefit terms. Few of a child's

requirements represent cash outlay; and parents are buffered from full costs of the care and time demands of a new child by the close relatives sharing the same homestead.

. Finally, many parents find psychological or emotional pleasure in their children, in life situations which do not hold many pleasures.

To reiterate, the above are commonly held assumptions about the factors affecting fertility in Bangladesh. The proportion of truth, old wives' tale, and former truth in each of them is not known. Increasingly, one hears that in this recent period of adversities--crippling inflation, shortages, man-made and natural calamities, and increasing landlessness--people are reordering their priorities and deciding that they cannot afford more children. Whether or not this is a trend needs to be documented. The nagging question remains: why should poor people have small families? Realistically, would it open any new options by which they might escape grinding poverty? The urban educated may have sound reasons for having small families. But their horizons and expectations for themselves and their children are so vastly different from those of people who have never left the villages, the priorities and values of the urban elite may not necessarily make sense to the majority of the population.

The Government has set a goal of replacement level fertility in 25 to 30 years. If most families would prefer to have at least two sons plus x daughters, as seems probable, it is of crucial importance to understand why--from the standpoint both of credible communication and of bringing about the conditions under which most people would perceive the two-child family as being advantageous. Whatever the answers may be, declines of the birth rate will depend on 15 million decisions by husbands or couples.

Population Programs and Activities In Bangladesh

(1.) The Bangladesh Government Program

The First Five Year Plan strikes the appropriate note of urgency in discussing the problem posed by the size and growth rate of the population. It states that failure to slow the population growth rate would "frustrate all our development effort" and threaten the "sheer ecological viability of the nation." It recognizes that a social change of major proportions is necessary to curb rapid population growth. While expressing a preference for voluntary family limitation, the Plan acknowledges a role for legal interventions and the possible eventuality of having to resort to involuntary, even

punitive, measures. The need is underscored for the active involvement of all sections of society in carrying on an aggressive education and promotion campaign.

Several new bodies are projected to provide high-level policy guidance, multi-sectoral coordination, and research. The Ministry of Health and Family Planning is assigned the major role in education, motivation, and delivery of modern contraceptive services, in the context of the overall public health program. Additionally, the nonhealth development ministries which are in contact with the public are directed to implement supportive educational and motivational programs in population/family planning, as well as to be cognisant of the population variable in their sectoral planning.

Briefly, the organizational structure for population control is planned to include these elements: A National Population Council, a ministerial-level body chaired by the Prime Minister, is to be created to provide population planning policy guidance. The Council has yet to be activated. In October 1974, the new Population Planning Division was created in the Ministry of Health and Family Planning. The process of definition of functions and design of organizational structure is now in progress. According to the Plan, the new Division is to be assigned responsibility for coordination and independent evaluation of all population planning activities, including the family planning program. Its establishment may open the way for functioning of the National Population Council as well, since the Division is to serve as secretariat for the Council. Coordination committees, composed of officials of development ministries, are to function at national, district and thana levels. In addition, a Population Study Center is to be created as a unit of the Bangladesh Institute of Development Studies to carry out and to coordinate population research. Although the Center has not yet been formally established, demographic scholars of the BIDS and selected consultants are well along in defining research priorities, some staff members or potential staff members have begun advanced academic training, and several small studies are under way.

The rhetoric of the Plan, then, recognizes population planning and population control as interdisciplinary and cross-sectoral in nature and inseparable from development planning. It acknowledges the national family planning program as an indispensable part of the overall program for population control.

The Pakistan program, by contrast, was more narrowly focussed on family planning. Under the Second Five Year Plan (1960-65), most services were provided through family planning centers within existing health facilities. The greatly expanded program under the

Third Five Year Plan (1965-70) added a large field-based staff and established an independent board to execute the family planning program. A National Impact Survey conducted in 1968-69, approximately three years after the more intensive program was started, reported the following accomplishments: About 70% of the target population in then East Pakistan knew about some method of family planning; only about 8% reported that they had ever practiced contraception, and 3% to 4% were currently practicing.

After Independence in December 1971 came an extended period of debate about the new government's approach to population control and, in particular, to family planning. In late 1973, the Government announced its decision to launch a program of integrated health and family planning services under the Ministry of Health and Family Planning.

The integrated program combines the former single-purpose programs of family planning, malaria eradication, and smallpox eradication, as well as the preventive programs of communicable disease control and sanitation. Field workers and district and thana administrative and technical officers are now charged with delivery and administration of the entire range of services formerly assigned to their respective separate programs. Approximately 12,000 male field workers, nearly all from the previous malaria and smallpox programs, have had minimal retraining and each is assigned routinely to visit all the homes in a rural area of 6-8,000 population. Designated Family Welfare Workers (FWWs), their principal duties include malaria and smallpox case finding, vaccinations, inoculations, family planning promotion, and supply of nonclinical contraceptives to adopters. After training in December 1973, these FWWs were assigned to the field in January 1974, marking the initiation of the Integrated Health and Family Planning Program.

The Plan also projects the recruitment and training of women with at least ten years of schooling as FWWs (8,000 during the First Plan period) who would be deployed with the existing FWWs as male/female teams. The rationale is that they would have freer access to women in purdah.

In the previous program, Lady Family Planning Visitors (LFPVs) were trained to provide family planning services, including insertion of intrauterine contraceptive devices (IUDs). Lady Health Visitors (LHVs), a category of health program personnel, had maternal and child health (MCH) training. Under the new integrated program, existing LFPVs (about 500) and LHVs (about 300) are to be retrained and additional women recruited as a new category, Family Welfare Visitors. They will be responsible for both MCH and family planning services in clinical settings.

As in the Pakistani program, nonclinical contraceptives are sold to users at highly subsidized prices. (At the current exchange rate, one monthly cycle of oral pills, one dozen condoms, and one container of foam are sold for approximately U.S. cents 3, 5, and 10, respectively.) However, other features of the previous program have been discarded. Cash incentive payments were dropped. The educated, full-time, multipurpose FFWs have replaced the former part-time, illiterate or semilliterate field personnel. Oral contraceptives had been programmed for the Fourth Five Year Plan (1970-75) but had not been introduced in a substantial way until Independence. In the new program, oral contraceptives occupy a prominent place in the range of methods offered, and the FFWs are authorized to issue pills after appropriate screening.

The Plan aims at an ambitious target of achieving replacement-level fertility in 25 to 30 years. The target for the First Plan Period is a reduction of the rate of natural increase from 3% to 2.8% (CBR: 47 to 43/1,000; CDR: 17 to 15/1,000).

How these hopes can be translated into reality, given the limited amount of funds budgeted for Population Planning as a whole, is highly uncertain at this point. The Table on the next page illustrates magnitudes. (Additional funds come from various establishment and health budget line items and family planning funds are in turn spent on what might be termed non-family planning related health activities.)

(2.) Positive Elements

For a country that has gone through and is going through as much physical and social trauma as Bangladesh, the most positive element for the potential development of a population control program is the fact that the HDG has had the time and political will to recognize the population problem and to institute policies and programs.

Moving from an immediate post-independence period when family planning was regarded as an ill-conceived and unnecessary program developed by Pakistan, on through the development of a FYP which presents an outline for population control action that is bold and forthright in many aspects, is a solid achievement in a short space of time. The language of the Population Programme section is not a policy for population control but an outline. The outline includes political compromises - compromises, for example, between those who wanted immediate legalization of abortion and those who wanted no abortion. The FYP calls for serious consideration of adoption of abortion. Compromises do not beg the question; they leave room to maneuver.

FY 74-75 Annual Plan Allocations for Population Planning

	<u>74/75</u> <u>ADP</u> <u>Taka in Lakh</u>	<u>% of</u> <u>Total</u>
Family Planning Operations	500.00	58.8%
Building Project & Design Unit	6.00	00.8%
Motivation Kits	5.99	00.8%
Ministries:		
Local Government	52.20	06.1%
Labor and Social Welfare	58.96	06.9%
Agriculture	5.42	00.6%
Education	20.14	02.4%
Information	100.62	11.8%
Home Affairs	61.37	07.2%
B.I.D.S.	31.00	03.6%
Planning Commission	8.00	00.9%
Population Total	<u>849.70</u>	<u>100.0%</u>
FY 75 ADP	525,00.00	1.6%

The Bangladesh program is also fortunate to be able to build on a base wherein the awareness of family planning and modern contraceptive methods was created in 70% of the target population, despite their high rate of illiteracy and their conservatism. The past program also developed an organizational structure which can be utilized in a revised form to launch an improved program based on newer strategies.

Moreover, there are many middle-level officials throughout the bureaucracy and influential persons in the private sector convinced of the prime importance of checking population growth as quickly as possible. The Ministry of Health and Family Planning has a large number of well-trained and experienced program personnel. In addition this ministry makes extensive use of paramedical personnel, and authorizes them to insert IUDs and issue oral contraceptives. Thus, it seems likely that an environment has been created which is conducive to introduction of non-family planning measures to control population growth, in addition to family planning itself. These positive program elements need to be supported and expanded at every opportunity.

(3.) Constraints Limiting Population Program Implementation

A critical review of program constraints of necessity focuses on the negative and in so doing may present a picture of a problem of an unsolvable nature. Therefore, the constraints discussed below should be balanced with the positive program elements outlined above and with the sense that population growth in Bangladesh can be brought under manageable control to a level of eventual replacement fertility.

It should be recognized that a government in crisis cannot necessarily be expected to do the obvious, particularly when the obvious in terms of population growth creeps up month by month and year by year and does not clamor for solution as do floods or food shortage. It should also be noted that not only do we not know why couples in Bangladesh have as many children as they do, neither do we know with confidence why the Government and the political groupings thereof make the decisions they do with regard to population program implementation. It is worth recalling here that Lyle Saunders of the Ford Foundation has written that "Nonborn children do not cast very dark shadows." The implications come home in Bangladesh and urgency of solution is relative to immediate need.

. Political Commitment

Political is used here in the broad sense and not to represent a particular political party. Evidence to date regarding the development of a coherent population policy, approval of population program plans, and reorganization of the bureaucracy to implement these plans presents

a rather bleak picture. After more than one year of FYP implementation, the FYP "Population Planning Programme" has yet to be approved. This program plan approval awaits the reorganization of the Ministry of Health and Family Planning into a Ministry of Health and Population with separate divisions for health (including family planning) and population planning. Once this reorganization question is settled, then the program plan will have to be rewritten to reflect this new organizational structure and the division of labor. That this major action should have been allowed to drift without decision for this length of time represents the clearest indication that the Government has not mobilized sufficient commitment in support of its population policy.

On a political party level, no political group has pressured for population control. This in the end may be a positive note because there has also been no political group raising its voice in opposition to the limited statements that have been made by the Government to date regarding the need to control population growth. This opposition could develop and would be a major setback for program implementation. Thus, it may be more sensible in the long run for demors and influential Bengalis to quit expecting the Prime Minister to take a strong vocal position on population control and hope instead that the Prime Minister will instruct the bureaucracy that population control is of prime importance and that bureaucratic delays in program implementation will not be tolerated. This action, coupled with the assignment of leadership of proven calibre to the population control program should, in the long run, do more to implement programs aimed at fertility limitation than all the public exhortations that can be made at a national level for couples to limit family size.

. Manpower

In the population field, Bangladesh is fortunate to have a fairly large cadre of well trained middle-level technical generalists in various population related disciplines and some very highly trained specialists in the medical and demographic/statistics subject areas. Unfortunately, a sizeable number of these individuals have transferred to positions unrelated to their former training. There is an urgent need for an inventory of personnel who have been trained in population programs and are still in Bangladesh. Once government policy is firmly established on this subject, such individuals who are assigned to unrelated fields should be encouraged by the Government to seek reassignment to population program positions in the various development ministries.

Of the personnel of senior rank who are already employed in the population program, it can be said that many of them are trying to find avenues of employment that will allow them to leave Bangladesh.

For most, the reasons have to do with the inability to maintain themselves at a standard of living that in any way represents their past modest standard. Added to the problem of family maintenance, and possibly more amenable to correction, is the fact that senior-level officers are presently assigned responsibility but given little or no authority for program direction. Thus the line-staff relationship is disoriented and the chain of command confused. One hopes with restrained optimism that reorganization and definition of authority for population program personnel will correct this situation.

. Medical Doctors/Medical Students

The private practitioners and government doctors interviewed by USAID say that they will not take an active role in population control programs until incentives for sterilization and other fertility control methods are reintroduced. The numbers interviewed are small, but inasmuch as the sample has been drawn on an ad hoc basis from around the country, the implications may be indicative of the attitude of the medical community at large. As it is naive to believe that couples will, in general, limit their family size for the good of the nation, it may be almost equally naive to believe that medical practitioners will implement population control programs for the same reason. There must be some kind of perceived reward for behavior (or for actual program costs) to influence continued support. In the case of the doctors, this may require cash incentives.

The medical students are another case. Even if they were moved to undertake fertility control programs for the good of the nation or of their patients, and there is no discernable reason why they should act differently than their teachers or supervisors, they are not presently trained to understand and communicate the knowledge of family planning methodology in general, nor are they trained to perform surgical procedures for clinical methods of birth control. Hopefully, the theoretical training will be provided under the UNFPA/WHO program for inclusion of family planning methodology in the medical school curriculum. However, what will still be lacking will be specific training programs in advanced fertility control techniques for medical students. A proposal to close this gap will be covered in program proposals outlined at the close of this chapter.

. Family Welfare Workers (FWWs)

On a more specific level, the delivery of family planning services is of prime importance for those couples already willing to accept contraception or who might be willing if they understood contraception. The FWWs may hold the key to success or failure of the family planning program. The presently employed FWWs are poorly

trained for the task at hand. Even with the two week orientation program and field demonstration conducted in December 1973, these existing 12,000 workers in the main cannot give proper guidance on the use of contraceptives, let alone provide the type of information that might stimulate potential acceptors to adopt contraception. Retraining of these workers is urgently required and periodic retraining should be a continuing program component.

The Government and UNFPA signed an agreement in July 1974 which includes funds for the training and salaries of 1,800 female FWs. Female FWs have been promoted as critical to motivating Bengali women to accept family planning. The training program for these female FWs was to have begun in September 1974. To date positions have not been authorized so these women can be recruited for training. The reasons for this delay are not clear but may reflect Government priority. The problem will be compounded when the proposed IBRD population project agreement is finalized. This project includes funds for training and salaries of an additional 3,700 female FWs. The decision to move forward with this program rests with the Government.

Another serious program constraint is the fact that the various health and family planning workers are pulled away from their normal complex duties to work with food procurement and flood relief programs. For a family planning program that includes oral contraceptives as one of its main methods of contraception, interruption of the supply system or lack of follow-up of acceptors could seriously jeopardize the program. The Government must actively review its policy of drafting the health and family planning workers for other development or relief tasks and attempt to find alternate workers. The cost/benefit difference could be significant when viewed in the context of the cost of an additional birth to the nation.

An additional major point of confusion for the FWs is the fact that they are drawn from separate vertical programs such as smallpox and malaria, and while the program is supposedly integrated at the basic field level, these FWs draw different salaries and allowances depending upon their original service cadre. In addition, they are administratively under the control of supervisors employed by these vertical programs. The Government has been reviewing these problems for over one year and no definitive action has been taken to correct this administratively confused situation.

. Development Ministries

Rural Development, Agriculture, Education, Labor and Social Welfare, and Information and Broadcasting Ministries are directed under the Five Year Plan to undertake population education and

motivation programs in the context of their own programs and to consider the population dimension in their planning. To date there is little evidence that these ministries perceive fertility control as positively related to the achievement of their own respective primary goals. Each of these ministries has drawn up a pilot population project which is included in the proposed IBRD population assistance package. Because this assistance has not yet been finalized, there is little action in any of the ministries to move forward with a population program. The ideas proposed in the pilot projects are in the main conventional and expected. One feels that if the language of the justifications were really believed, the activities would long since have been incorporated into the programs at only the additional costs of adding content to in-service and preservice training syllabi. It is as if the projects were drawn up for the foreign donor and not for Bangladesh. If this is true, the beginning stage of the program may require a population education effort targeted specifically at each of these ministries with information on what the various rates of population growth mean in terms of that particular ministry's program. This population growth information may require ministries to rethink not just a population program component, but the entire approach to their program plans.

. Population Research and Evaluation

The population program planners have been constrained by a lack of reliable population data for even the basics. The figures used for planning are in many cases the best guesstimates. This data constraint should improve as the Population Studies Center (PSC) begins to produce new research results on determinants of fertility and more up-to-date information on how the various rates interact to form the growth rate. The long range research plans for the PSC are being developed now. However, with the Population Planning Division (PPD) charged with independent evaluation of all population planning activities, careful coordination is required between the PSC and the PPD to insure that there is no duplication of effort when evaluation and research become overlapping. There also needs to be clear definition of which organizational unit is responsible for such basic information needs as the number of acceptors of contraception by method and continuation rates for these acceptors. Without this basic data, constructive family planning approaches become difficult to define and proper contraceptive supply becomes impossible. Micro research for family planning intervention should not be lost while the research on the results of overpopulation are studied.

(4.) Private Sector Activities

There are several small innovative programs under nongovernmental organization sponsorship which appear to be promising from the standpoint of recruitment and retention of family planning adopters and acceptability of the program to the people. Some of the characteristics of these approaches include: (1) incorporation of family planning education and

services as an integral part of broader rural development--crop diversification, nutrition, general health, maternal and child health, functional literacy, development of alternate sources of income for women as an alternative means to achieving higher status; (2) recognition of family planning as a positive element in family and community well-being; (3) use of locally recruited service and motivational personnel; (4) enlistment of the active support of local leaders; and (5) careful attention to training, supervision, and quality of service, including the respect with which clients are treated. It is encouraging to note that over the years Bengalis have demonstrated an admirable and all-too-rare willingness to incorporate into national programs ideas tested in small-scale demonstrations such as those described above.

As an adjunct to the governmental delivery system, the Government has approved the testing of commercial marketing of oral pills and condoms through established retail outlets. This is in the early stages of implementation under an agreement with Population Services International, funded by an A.I.D. contract. Merchandising of contraceptives contributes several positive elements in a national family planning program. It greatly increases the number of supply points. Users are provided alternative sets of circumstances under which they can obtain supplies. The supporting advertising campaign and the visibility of contraceptive products in a variety of small shops disseminate information and help to legitimize birth control.

An Expanded Approach To Population Control

(1.) Lessons From International Experience

Directed change of fertility behavior on a mass scale is a new undertaking for most countries. Many complementary and conflicting approaches are advocated as theoretically having a high impact on birth rates. Some are untried or insufficiently tested, and most are too new to permit adequate assessment in what is by nature a long-range process. But they do delineate a range of options for policy makers and planners of population control programs.

Recognizing that the national birth rate is a consequence of a very complex interplay of biological, social and economic factors, an individual family's size can be viewed as the result of this interplay on individual habits and decisions. Programs designed to influence fertility trends can never deal with all relevant factors, but those which have been shown to be effective and manageable can be dealt with most efficiently. Hence the need, in Bangladesh, to continue supporting those population education and family planning programs which constitute a conventional strategy for those who are already willing to limit their family size. At same time, there is

an urgent need to move beyond this approach to meet the difficult challenge of reaching the vast majority of couples who may not as yet see any rational reason for a small family. We know relatively little about how to do this except that perceived economic well-being, as stressed throughout this paper, may be a critical precondition.

Because of the contribution of postpartum amenorrhea to "natural" spacing in Bangladesh, any popular trend away from prolonged breast feeding should be resisted. At the same time, both supplementary feeding (important for adequate infant nutrition) and administration of the oral contraceptive pill (important for the protection of those who begin ovulating before menses resumes) may shorten the period of lactation. This suggests the need for a considered trade-off among valid but competing objectives.

To bring about a nationwide behavioral change in an essentially non-contracepting population, from the six- through the four- and three- and eventually to the two-child family, is obviously a complex, long-range task. In programmatic terms, there are interventions on many levels and at different phases in the process which may directly or indirectly affect fertility behavior.

One prerequisite is to make family planning concepts, symbols and vocabulary commonplace, respectable subjects for open discussion. Experienced family planning personnel in Bangladesh report that there seems to be some change for the better in the past several years. Mass communication techniques and active discussion among all sectors of society are useful in legitimizing birth control as a topic of conversation. A particular role can be played by nonhealth development ministries at the level of their contact with people in promoting and supporting family planning efforts. The welfare benefits accruing to family units and individuals from planned families are also beneficial to these development programs whose success depends on people's response. Involvement of these ministries would help to ensure that consistent, reinforcing messages are reaching people through a variety of channels.

Campaigns with more educational content on the nature and use of birth control methods and the location of service delivery points are necessary. Person-to-person and small group communication techniques are believed to be more appropriate and effective than mass media for these messages.

Experience in other countries emphasizes the importance of ensuring that a positive public image of family planning be created through the information and education campaigns and by family planning personnel. Association of family planning with the welfare

of the family and love of children is more effective in the long run than negative, frightening associations such as "don't", "stop", or "operation".

We assume that, from their points of view, most families make rational decisions--including no decision at all--about the size of their families. It is possible however that perceptions of national (macro) best interests and individual (micro) best interests may be diametrically opposed in Bangladesh. There is general agreement that rural people have little comprehension of or interest in the national problem, nor can they imagine that their personal actions could have a national effect. Little has been done to try to establish in the farmer's mind a fusion of national and individual welfare. In Bangladesh, for example, one might make the case that the domestic expenditure of resources required by the large population is in part responsible for the shortage of savings to import agricultural inputs adequate for the farmer's needs. If, however, the farmer knows a locally powerful man who is able to get enough water, fertilizer and pesticides because of political connections or an extra consideration, or if the farmer is suspicious of high-level malfeasance in the handling of national resources, this argument may hold little credibility for him. Yet the attempt to identify instances of readily perceived congruence and linkages of individual welfare with national and community welfare should be worth pursuing.

Strong social approval of birth control and small families is an important objective. But its attainment requires overcoming the support now given to large families and a fatalistic tendency to leave the completed family size to God's will. Ready availability of contraceptive services may contribute to attaining this objective. There is a point of view that, as the proportion of people practicing birth control increases in a community, a critical mass is reached at which point contraception is accepted as normal behavior. Another promising approach is to make proponents of the individuals or groups who influence people's behavior by instigating village leaders' study of the facts and ramifications of population size and growth in their respective villages. The World Population Plan of Action adopted by the World Population Conference made an important step forward in its broadening of the concept of parental responsibility to include, for the first time in a U.N. document, responsibility for the welfare of future generations and for the community. It is important that local leaders, in their concern with the future of their communities, emphasize this aspect of individual social responsibility.

A great deal has been written about the body of recent evidence that voluntary fertility declines in developing countries are associated with more equitable distribution of employment opportunities and access to social services at unexpectedly low levels of per capita income. Conversely, countries with similar or

greater GNP gains, where the benefits of development are concentrated among only a few, continue to sustain high population growth rates. Although no cause-and-effect relationship has been established, there are plausible speculations on the dynamics of this association. Increasing access--to higher income, a wider range of job opportunities, better health and nutrition, education (especially increased access for girls), a cash economy, reference groups outside the traditional community, expanded roles for women--is modernizing and liberating. The range of accessible, viable alternatives is wider. The vicious cycle of poverty and hopelessness is broken. The assumptions here are that hopelessness is poor soil in which to sow the seeds of the family limitation message, and that modern characteristics increase chances of early adoption of innovations. In this context, the strategy of giving priority to labor-intensive, agriculture- and rural infrastructure- related, widely dispersed capital investments, advocated in this paper, assumes added significance. It is consistent with ethical and humanitarian values and political pledges. It is a rational response to the difficult investment dilemma of trying to ensure both economic growth and a decent standard of living for a large, burgeoning population. It may set in motion, through a chain of linkages, an engine of development through creation of a broad-based consumer demand and increased productivity. And, not least, it may help to create the conditions in which the majority of people perceive their best interests linked with a small family.

Programs aimed at enhancing the self-esteem and self-confidence of women, creating networks of communication and mutual support among women, and developing alternative ways for women to gain enough status to have a voice in family decisions are expected to have positive payoffs for both national development and lowered fertility.

Given past experience with the use (or abuse) of incentives when Bangladesh was East Pakistan, it would seem prudent, if incentives are to be introduced, to design the system around social security or as an acknowledgment of the contribution to national development of communities or individuals who have demonstrated sustained, responsible behavior.

In the erstwhile Pakistan program, medical doctors in private practice and public service supplemented their incomes with government incentive payments for reported sterilizations and IUD insertions. When the payments stopped, most of the services stopped. For the long term, there is an evident need in medical education not only for education in reproductive biology and training in the full range of fertility management techniques, but also indoctrination in the relationship between family planning and family health and, even more basically, the relationship of the medical profession to a concern for human welfare. The contention here is that fertility

counselling and services are inseparable from good medical practice. Until this change is brought about, we recommend the reintroduction of incentives.

Another long-range approach contributing to informed public awareness and understanding of population growth and its consequences is population education in schools and universities. If done well, this should prepare young people to make responsible public and private decisions in their adult lives. While it would not reach the entire young population, it would reach all those who will become national leaders.

There are a number of other public policy areas which are believed to be important in population planning. Decisions about the location of public services, marketing facilities, and new industries have an effect on the spatial distribution of the population. Little is known about the fertility effects of dispersing urban growth centers. But much is to be gained in terms of political and social stability and prevention of human misery if the flow of people to a few cities can be prevented in the absence of sufficient jobs and adequate housing and services. Legal reforms to eliminate measures which are pronatalist or discriminatory against women, to raise the age at marriage of women, and to make medical termination of pregnancy available safely and legally may have positive long-range effects on fertility.

Finally, and as stated in the Plan, if the preferred voluntary adoption of fertility control is not adequate to prevent catastrophe, it may become necessary for the Government to resort to disincentives or involuntary or punitive measures. These actions would require an extended period of public discussion and creation of a climate in which such steps, however distasteful, would be accepted as necessary to national survival.

(2.) Selected Intervention Points

While an expanded strategy is suggested, it must be noted that everything cannot be done at once. There must be priorities, particularly when manpower and funds are in short supply. What is intended in this section is to identify actions that promise high payoff and that are aimed at both direct and indirect determinants of fertility.

. Leader Opinion

For Bangladesh, the greatest impetus on a national level to bring the population issue squarely to the forefront of development

planning would be a yearly Aid Donors' meeting with population growth and program planning as the subject for discussion. Unchecked population growth is so critical to development in Bangladesh that every other development issue becomes secondary. A commitment leading to serious action is unlikely unless the leaders learn the basic facts of population growth, think through their implications, and arrive at their own conclusions about the consequences for their country.

Action

- Create opportunities for senior government servants, editors, jurists, legislators, major employers and trade union leaders to observe and discuss population problems and programs in countries with strong population programs.
- Develop a greatly improved system of publicizing positive statements by world and national leaders and positive policies and programs by governments, both in mass media and through direct mailings to selected key national leaders; this on the assumption that every leader and country is influenced by the actions of certain other leaders and countries. The Population Crisis Committee may be the proper organization to handle this task.
- Training of all A.I.D. sponsored participants in population education as an adjunct to their regular training program would seem a good investment inasmuch as most of these individuals are mid- or senior-level civil servants. This training could be arranged as a matter of routine through A.I.D./W's participant scheduling program.

. Increased Public Knowledge And Availability Of Contraceptives

A National Impact Survey conducted in 1968-69 reported the following accomplishments of the family planning program: Around 70% of the target population in the then East Pakistan knew about some method of family planning; only about 8% reported that they had ever practiced birth control; and 3-4% were currently practicing. It is unlikely that knowledge of methods has increased. It is likely that the numbers currently practicing may have decreased. Until recently the availability of contraceptives at anything approaching affordable prices was severely limited. Thus, the first program step is to increase contraceptive knowledge and make contraception easily available to those already willing to limit family size.

Action

- Train all medical students in advanced fertility control techniques and teach them an understanding of their role in fertility control programs and the role of fertility control in their practice.
- Increase availability of clinical contraceptive services by development of active service programs in all clinic facilities.
- Retrain existing FWWs and recruit and train female FWWs to impart effective contraceptive knowledge to target couples.
- Make nonclinical contraceptives available through public and private sectors on a broad scale at highly subsidized prices.
- Support the above education and supply efforts by development of a population awareness program through the Information and Broadcasting Ministry with the support of the various development-related ministries. Carry out this program in conjunction with a mass family planning-specific IEC campaign conducted under the auspices of the Ministry of Health and Population Planning.
- Include population education as an important component of the proposed rural information service pilot project which is discussed in Chapter 7.

. Incentives

Most of the family planning communication research studies conducted in Bangladesh indicate that the husband decides if contraception shall be practiced by either the wife or the husband. Thus the male controls, to a large extent, his wife's fertility. It becomes essential therefore to influence the husband to accept contraception. One key to change, particularly for those who have 3-4 children, may be the use of monetary incentives.

Incentives to motivate couples to adopt family planning methods were not included in the Bangladesh program because the incentives during the Pakistan era led to corruption. They were not dropped because the incentives did not motivate acceptors. Under the current program the daily-wage worker who often lives a hand-to-mouth existence cannot be reimbursed for days of work lost following sterilization. This potential acceptor does not have health insurance, he does not have paid sick leave--and in the present program he probably will not come forward for sterilization.

In the past incentives to motivators, acceptors and medical personnel amounted to approximately Rps 50 (\$10) per vasectomy. Some reports indicate that, for example, out of 100 acceptors, 80 were bogus cases; of the twenty actual vasectomies performed, only about five would fall into the category of those with a wife young enough to have one or more additional children and with the most recent child young enough to indicate that the wife (or husband) was not sterile. Therefore, for those five individuals the program had been paying the equivalent of Rps 1,000 (\$200) per effective sterilization.

If one were to use the noted Bengali economist, Dr. A. R. Khan's figure of the value of a birth prevented at approximately Takas 2,000 (\$250) per birth, or the Government's figure of the cost of creating a job at Takas 5,000 (\$625), then even the supposedly corrupt incentive program was worth the money spent. There are checks on corruption. If the government were concerned with the value of a birth prevented, incentive programs could be designed with a limited corruption factor.

Action

- Reintroduce incentive payments to acceptors of sterilization as compensation for days of work lost.
- Explore and test the reintroduction of incentives to private physicians for compensation for sterilization operations.
- Test group cash incentive awards for staff of government clinics where the largest number of sterilizations are performed each month.
- Design research project to attempt to link rural works programs to a community incentive for those villages and unions where the leaders agree actively to promote population education and support the efforts of the Family Welfare Workers.

• Legalization Of Abortion

The significant birth control method being used in most of the developing countries is abortion-- usually illegal abortion that often results in infection, trauma and death. Large numbers of hospital beds are occupied needlessly and at great expense by women who require major medical care because of illegal abortions. The primary solution to this problem is readily available contraception at affordable prices linked with the motivation and the knowledge on the part of the reproductive age population to use contraception. The secondary answer is legal and safe abortion services, readily available and also affordable. If Bangladesh leaders were provided with the information that would help them to understand the magnitude of the problem from the standpoint of the medical and social trauma inflicted on

thousands of uneducated women who neither understand or have access to contraception, nor can afford expensive, safe abortion services, abortion could and would be legalized. The intent here is not to promote abortion as a contraceptive method but to provide a rational program of humane services on a voluntary basis to desperate women otherwise driven to dangerous measures to prevent births they do not want, as happens now in Bangladesh and other countries where abortion is illegal.

Action

- Support Government efforts to review legislation applicable to abortion.
- Support the concept that safe, legal abortion services should be available for contraceptive failure.

• Opportunities For Women

The average age at marriage for girls is believed to have risen to 15 or 16. During her lifetime the Bengali woman has an average of 6.2 children. Replacement fertility requires that this number be reduced to approximately 2.4 children. It is said that approximately 65% of women of Bangladesh are under 30 and present 82% of all births. Delaying the age at marriage to limit exposure to intercourse and the probability of conception seems a logical course to reducing births. However, delayed marriage requires alternatives for women such as increased education and opportunities for employment that are not readily available. Alternatives must therefore be found that may change reproductive behavior.

Action

- Future A.I.D. support to rural works programs should be designed to include married women under 30. If this can be accomplished, the Population Studies Center should be contracted to study these women to determine what effect, if any, the opportunity for employment has on reproduction.
- The age at marriage should be raised to a minimum of 18 years for females and 21 for males. The machinery is not in place to effect enforcement of this change in law, but it could be activated. At a minimum the adult population could be made aware of the new law and peer pressure should influence and delay many marriages.
- With such an early age at marriage, population education programs need to be introduced in the school system as soon as possible. Noting the early drop-out rates for formal schooling, sex education needs to be incorporated in this education at the lowest

acceptable grade. When the age at marriage is so young, it seems imperative to include sex education so that the young people receive education that meets their life pattern, a life pattern unlikely to change in the next decade unless real per capita income increases to allow them to remain in school beyond the primary grades.

. Motivation Of Youth

Bangladesh is caught in the dilemma of trying to reorient its educational system to meet the needs of the masses, while at the same time trying to keep pace with and develop institutions for its advanced students. Recognizing that much more emphasis is needed to prepare children and young people for making rational private and public decisions in the future, consideration should be given to the development of a national two year "Job Corps" service requirement for all students prior to admission to universities. This service would be not only for practical educational purposes and as a screening mechanism for overburdened universities, but the young men and women could be put to work in the health field to teach villagers the basics of health care and assist the Family Welfare Workers with their multitude of tasks so that time is available to work on the major task of family planning information and contraceptive supply.

Action

-- Promote concept with Government. Arrange for Bangladesh educators to visit countries such as Iran that already conduct similar programs.

(3.) Foreign Assistance

. Coordination

There are many individuals, both Bengali and foreign, who say that the primary reason the Government has taken a strong Plan position to control population growth is because of the perceived need on the part of the Government to please foreign aid donors who constantly pressure for concerted action on population control. Whether this is true or not can best be judged by the actions the Government takes to implement the programs it itself has defined as essential to control population growth. What is known at this time, however, is that the Government feels that variations and conflicts in the philosophies of different international agencies who offer assistance have deterred formulation of policy; that the different donor processing and reporting requirements impede coordination and utilization of aid; and that firm assurance of long term support is required. Because statements to this effect were made by the Minister of Health and Family Planning at the World Population Conference one may assume these important points were

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agreed upon and approved by the senior leaders of the Government. There is, therefore, serious need to clarify and resolve this situation so that external assistance may be positive and supportive of the population program and not an irritant to the task at hand.

First and foremost, there needs to be recognition by all donors that the Government must articulate its own priorities for action programs and the role of external donors in support of these programs. Conflicting program advice to date has basically resulted from the fact that the administrative decisions required to approve and implement the Population Program as outlined in the FYP have not been taken. This has, in some cases, resulted in an ad hoc approach on the part of the Government and donors that may later result in program implementation problems when the Government realizes that some already agreed upon activities that have external support are inconsistent with the final approved plan.

It is our contention that coordination of external assistance in Bangladesh in the population control field will continue to be a problem unless the Government agrees to develop a formal mechanism for regular coordination of this assistance. Moreover, this assistance must be directed at specific program components within the context of an agreed upon plan of action. A coordinating mechanism would also serve to facilitate the flow of assistance for activities not previously included or anticipated when the program plan was formulated and approved.

• The Response of Donors

Through informal mechanisms, donor assistance has been fairly well coordinated. The mix of support seems good and to date not duplication of effort. A formal Government coordinating mechanism as proposed above would improve donor assistance.

A.I.D.

A.I.D.'s contribution of contraceptive supplies and fertility regulation equipment has established the pipeline essential to sustained delivery of services.

Under centrally funded contracts, an innovation program for marketing nonclinical contraceptives through established retail outlets is about to be tested (Population Services International); and the effectiveness and acceptability of a variety of contraceptives in the context of the general health conditions and cultural biases prevailing in Bangladesh will be studied (Johns Hopkins University).

Under worldwide grants to intermediary agencies, a model clinic has been established in Dacca which will serve as a training institution in advanced techniques of fertility control (Pathfinder

Fund); the program of public and school population education, motivation, and clinical services of the private-sector Bangladesh Family Planning Association is supported (IPPF); an experimental program to secure active support of village leaders in promotion of family planning in a comprehensive community development context has begun (Family Planning International Assistance); and a model sterilization/training clinic will be established this year (Association for Voluntary Sterilization).

Eleven Bengali officials have received overseas professional training related to population and family planning (ten short-term, one long-term) in continuation of a U.S. program of building professional competence begun in the Pakistan era.

Relief and Rehabilitation Grant funds have been allocated for the initial orientation training of the FFWs and for construction of a limited number of rural health centers in thanas which had no such service delivery facilities.

Possible future assistance is proposed in the next section.

UNFPA

In July 1974 UNFPA reached agreement with the Government for \$10 million for population assistance. To date approximately \$5 million of this grant has been programmed. The UNFPA support, to be implemented through various of the Specialized Agencies, is in the fields of training and salary support for female FFWs; medical and paramedical education and training; population education in the school system and among trade union leaders; pilot programs of motivation and services in industries and plantations; and improvement of the health/family planning commodities and transport system. Uses of the unprogrammed balance of \$5 million of the three-year UNFPA grant are still under discussion. In addition, Bangladesh will participate in the World Fertility Survey.

Ford Foundation

Ford Foundation assistance in the population field is on the order of \$500,000 per year. The principal focus is on long-range, intersectoral support of research and training capabilities of Bengali institutions. The Foundation makes complementary grants to small projects, often nongovernmental, with innovative or experimental value that may hold promise for new service delivery systems. Possible women's programs are also being explored. The Foundation also has interest in coordinated support (with Population Council) of the development of the newly established Population Study Center of the Bangladesh Institute for Development Studies.

IBRD

IBRD is prepared to finance \$15 million of a \$46 million population project proposal from the Bangladesh Government. Norway, the F.R.G., Canada, the U.K., Sweden, and Australia are reportedly agreeable to participate. IBRD is continuing to seek support from additional donors. The proposal includes a large component of construction of training and service-delivery facilities; training and salary support of additional female FFWs; pilot projects proposed by the nonhealth development ministries; establishment and upgrading of research and evaluation institutions; and related technical assistance.

Proposed Project Identification, Design Principles and Projects

To get started on an expanded program as well as maintain momentum on the population control activities already begun by the Government will be a major undertaking. Obviously, there must be priorities. The Government of Bangladesh appears to be aware of this and their own programs as well as the programmed foreign donor support to date are in the main targeted, as a first priority, on expanding the availability of contraceptive services. At the same time, current Bangladesh Government decisions to involve nonhealth related ministries in population control programs can facilitate the future search for expanded opportunities to work on population programming across a broad range of contacts with the population.

(1.) Principles

As a consequence of the foregoing, certain project identification and design principles for A.I.D.'s internal guidance seem obvious. These include the following:

- Activities which focus on the consequences of population growth must be given a lower order of priority unless they are believed to have a direct bearing on fertility or unless the purpose is to generate evidence to support the need for population planning programs which are particularly suited to Bangladesh conditions in rural areas.
- Major support should go to those programs which build effective family planning services in the context of low-cost delivery systems, also effectively reaching rural areas.
- In addition to major support for delivery of family planning services, project identification and design activity should be directed towards the various development ministries which, by their functions, possess an expanded range of contacts with the rural populace. The objective should be to develop within each

ministry and department a capacity to design and implement population planning, education and motivation programs as a part of their regular activities.

- Similarly, increasing attention should be devoted to study the unique social, biological, economic and other factors in Bangladesh which may decisively influence motivation and fertility behavior.
- In this latter connection, A.I.D. must recognize that population programming is still in its infancy. Under such conditions, retention of the 25% requirement of Section 110 (A) of the Foreign Assistance Act is self-defeating. The requirement, at least for Bangladesh, should be waived immediately lest it dangerously restrict the development of all the experimental and innovative project designs, tests, and programs so urgently needed in this country.

(2.) Projects

It is possible at this point to suggest a list of projects which meet the foregoing principles. Some of these are already active or planned. Others could be initiated in the near future if the Government of Bangladesh determined they were essential to the population control program and agreed to provide the institutional support necessary for project development and implementation.

- Contraceptive Commodity Supply: Continued based on constant review of acceptor trends.
- Commercial Marketing of Contraceptives: Major three year support for a nationwide program to sell orals and condoms at highly subsidized prices.
- Management and Planning Assistance: Program support to the Health Division of the Ministry of Health and Family Planning to assist in strengthening the planning and management processes of that Division.
- Evaluation: Institutional development support to the Population Planning Division for improved program evaluation with particular emphasis on the family planning program evaluation component.
- Medical College Fertility Clinics: Support to develop fertility clinics at medical colleges to deliver advanced fertility control services and train medical students.

- Participant Training: Funds for population program training in the U.S. and third countries.
- Incentive Programs: Funds for the design and test of incentive programs.
- Women's Opportunity Programs: Consultant to work with Women's Rehabilitation Board to assist with program development, determine intervention points for population education, and possibly develop broader program for A.I.D. assistance to women in Bangladesh.
- Population Education: Funds to support major printing and distribution of population education materials now being developed and tested by the Bangladesh Government.

Health

USAID is not presenting an assessment of the health sector at this time. This is not to deny the enormous health needs of Bangladesh nor the importance of improved health to national development. To recall the singular history of the A.I.D. program in Bangladesh, the U.S. responded to the most urgent needs of the battered new country with a large relief and rehabilitation program administered by a very small staff. It is only within the past year that the program has been redirected into development. During the relief phase, however, high priority was placed on the urgent need to help the Government put a population control program back into operation. Health activities under relief and rehabilitation funding were limited to rehabilitation of damaged hospitals and clinics, construction of a few new rural health centers, and the initial orientation/retraining of the Family Welfare Workers of the Integrated Health and Family Planning Program. In addition, funds are provided for the continuation of the Cholera Research Laboratory program. In the meantime, WHO has a substantial, wide-ranging program of assistance to the Government in the health field.

We anticipate that in 1975 we may wish to request the consultant services of TA/H to survey and analyze the status of health services delivery and to determine with the Bangladesh Government if A.I.D. has a useful assistance role in this area.

Drawing on information presented in the Five Year Plan, the following are some of the indicators of health needs and resources for health care. In the absence of an organized system for collection of health data, these statistics are acknowledged to be of questionable quality. The infant mortality rate is thought to be about 130 per 1,000 livebirths. Estimates of maternity-related death range as high as

30 per thousand livebirths, although analysis of two prospective studies of maternal mortality in Matlab Thana between 1967 and 1970 report rates as low as 7.7 and 5.7 deaths per 1,000 livebirths (compared with 0.2 to 0.8 per thousand livebirths in North America and Western Europe). (Chen, et. al., Oct, 1974). An estimated 26% of children die before their fifth birthday. Average life expectancy at birth is between 48 and 50.

Malaria and smallpox are no longer the great killers which for so long sustained death rates nearly as high as birth rates. The Cholera Research Laboratory, with U.S. and other donor support, has made and continues to make progress in life-saving techniques in the treatment of cholera and other diarrheal diseases. However, preventable diseases, together with their interaction with malnutrition, remain the most important reason for high morbidity and mortality.

The most common nutritional deficiency encountered in Bangladesh is protein-calorie malnutrition. The most serious nutritional problem is protein deficiency. It is widespread among those families earning less than Takas 200 per month. This comprises about 85% of the rural population.

Sixty percent of the households consume an amount of protein that is below the acceptable level. Kwashiorkor or severe protein deprivation is a disease afflicting the very young among these families. It typically affects the child whose post-weaning diet is insufficient in proteins. This disease may also be present in breastfed children who are older than 6 months. Breast feeding provides sufficient proteins only for the first six months of life; thereafter supplementary foods are required. In Bangladesh breast feeding is almost universal and is usually continued beyond two years.

The FYP recognizes that Bangladesh must do something about its nutritional problems and that the basic approach has to be through the agricultural sector as discussed in Chapters 4 and 5 of this paper.

Health care is still largely urban-oriented and curative-biased. The over-90% of the population who live in rural areas have little access to modern health services. Of the estimated 7,000 doctors in the country, over 75% are working in urban areas. The Plan document reports about 700 nurses, 250 midwives, 275 lady health visitors, 980 sanitary inspectors, less than 1,000 compounders (dispensers of medicine), and 170 laboratory technicians in the health services in 1973.

The Plan states the commendable intention to change the medical and health fields from a curative bias to a preventive bias. Projects to augment the existing capacity for training of nurses, family welfare visitors (the new MCH/family planning category mentioned in the Population section of this chapter), and other paramedical personnel are beginning to be implemented and have attracted U.N. and IBRD interest and support.

Of the 356 rural thanas, only 160 had rural health center facilities as of June 1973 (outpatient dispensary, MCH clinic with six maternity beds, diagnostic laboratory, and supply storage). During the Plan period the Government hopes that it can build another 196 for complete rural coverage. In addition, the Plan announces the intention of upgrading the rural health centers to rural health complexes by the addition of 25-bed hospital wards. Construction of subcenters in three unions per rural thana, for a total of 1,068 subcenters, is also projected for MCH and family planning services. In subsequent Plan periods, it is hoped that subcenters can be extended to all rural unions.

Given the current scarcity of resources and the grossly inflated price of construction, it seems doubtful that these targets for physical facilities can be met during the First Plan period. Indeed, we feel that at this stage in history funds which might be used for the construction of thana hospitals would have a greater impact on the health needs of the nation and on morbidity and mortality rates if they were invested in better training of more paramedical field personnel, adequate supplies of vaccines and remedies for common ailments, a first-class logistics system, skilled family planning services, protected domestic water supply, environmental sanitation, and nutrition and health education.

Our judgment may be quite wrong, however, and we would hope that the health experts from TA/H could clarify the situation for us this next year. At that time, the development of a Health Sector Analysis would be more appropriate and timely.

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CHAPTER 7

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Education

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Chapter 7

Education

Introduction:

The developmental model presented in this paper advocates agricultural growth as the primary generator of economic and social change in Bangladesh. Although primacy is given to agriculture and rural institutions, the model cannot function effectively if it is not linked directly to a slowing of population growth in Bangladesh. Furthermore, while education, health and nutrition development are each viewed as secondary in the overall context of the model, certain specifics in these activities exert direct influence on agricultural growth. Our model defines specific developmental priorities, but more importantly it implies a changed perspective on agriculture and on rural life as a result of increased access to education in the rural areas. If Bangladesh continues to expend approximately one-fifth of its recurrent budget on an education system that turns-out hundreds of graduates in fields not related to national manpower needs, then no amount of attention to agricultural growth will maintain the necessary dynamism required to make the model function.*

It is through a wider offering of relevant basic skills in rural areas that education systems can fuel some of the requirements of dynamic agricultural growth. Other educational contributors to these requirements include; lowered cost per individual trained, elimination of sex discrimination in training offered, and a constantly widening age-range spectrum of those trained.

* For more detailed information on current manpower deficits, surpluses, and trends, the reader may refer to a recent manpower study completed by the Planning Commission, entitled "Employment Market for the Educated in Bangladesh", June 1974.

In the context of these necessary requirements for dynamic agricultural growth, this assessment examines the priority target: the rural family; offers a cursory analysis of the existing formal and non-formal educational systems and also existing informal learning mechanisms; reviews past planning and donor assistance trends in education; describes present Bangladesh plans for dealing with educational needs; and suggests a strategy which AID might usefully pursue when seeking to support relevant education applications to the agricultural growth model presented in this paper.

Priority Target - The Rural Family

Ninety percent of Bangladesh families are located in rural areas. The average family number six members.* Among these rural families about 35% of the school-age children will be in school. This percentage is misleading because it is an average derived from all levels of rural inhabitants. In practice, children coming from landless, near landless, and small farmer families are less proportionately represented in school enrollments. Yet, they together represent about 75% of the rural families. Thus, existing facilities and opportunities for education are strongly skewed against the children of landless, near landless, and small farmer families.

These families confront an inflationary spiral in which any spare funds that might be available for educational costs are swallowed up by meeting daily living expenses. Large and medium sized farmers are less affected by this inflationary trend in that they enjoy higher prices for their agricultural products and can also save food produced on their land for personal consumption. Today, the average rural family pays 5 times more for rice, clothing, and housing than it did in 1969. But since that year rural wage rates have only doubled, thereby reducing the real income of all rural families except those noted above.

* Based on Proceedings on Bangladesh/FAO Workshop, Agriculture Research Council, July 1974.

The rural family, including the children, will spend most of its time working. Until the recent inflation more than 75% of the earnings of the rural family were spent on food, clothing, and housing. Less than 2% of total family earnings went for education of family members. Any savings were used for more food, clothing, consumer items or the daughter's wedding. Today these proportions are further skewed against savings of any kind or any funds spent on educational costs.

Of the members of a rural family, sometimes one child is studying in a primary school; he is likely to be the only literate person in the family. Theoretically, the child has access to free primary education provided the parents can afford to pay the minimum costs for fees, clothing, and textbooks. These costs are usually sufficient to block attendance by most of the children from very poor families. A number of studies of dropouts in Bangladesh have consistently shown that a predominant reason for such attrition is the prohibitive expense of 'free' primary education. Besides the direct costs of education, indirect opportunity costs, particularly during the sowing and harvesting seasons are great enough to pull the child out of school. On the other hand attendance increases when it is known that relief goods may be distributed to children through the schools.*

Primary schools are supposed to be within walking distance of every rural family (1 - 5 miles). This is not the case with secondary schools which are as far as 8 to 10 miles away. Recent figures from the Ministry of Education indicate that there are about 32,000 primary schools and almost 7,000 secondary schools in Bangladesh in which 6 million and 2 million are enrolled respectively. (There are currently 20 million children in Bangladesh of school age). This means that at least one-third of the 419 thanas in the country have less than 75% of the required number of primary schools. Usually, these deficiencies are in the remotest rural areas with the result that children living in such areas may have to go anywhere from 5 to 10 miles to attend a primary school.

The rural child completing primary or secondary school is ill-prepared to take a place in the rural economy. There is simply little in the syllabus and curriculum that focuses

* Based on "Survey of Three Thanas" by Mosharaf Hussain Khan, USAID, September, 1974.

on rural development needs and farming skills. The system virtually ensures that once a child gets a serious foothold on the educational ladder, he will be unmotivated as well as unprepared to stay on the land. In general, this accords with the desires of his family particularly when the father or mother has had some formal schooling in their youth. A better education, in that context, is viewed as about the only means by which one can raise personal status and/or leave the rural area for an urban job. In a country with no social insurance or retirement insurance system, an education and additional children are regarded as about the only means of security for elderly citizens. Recently this aspiration has been dampened by the rising unemployment rates among the educated. The employment situation has worsened to such an extent that there has been a reverse, untraditional trickle of employment seekers back to the rural areas. Nevertheless, there continues to be a very strong desire on the part of many rural families to get their children into the formal education system and eventually by this means to a job in an urban setting.

By contrast, the female children of the rural family almost never get into school. Daughters of rural parents are not generally encouraged to attend school and are married at a very young age. The result is that rural women are the least participatory in the development process and enormous difficulties surround getting information or training to them.

Somewhat similar difficulties surround rural adult males, particularly that percentage which is illiterate. Yet, the social system for rural adult males unlike that concerning rural adult females can be supportive of information or training systems that will convey skills and advice to rural areas. However, current economic and administrative systems operate in ways which open information access only to those with money, land, and influence.

Thus as an example, the relatively larger farmer has greater access to non-formal education activities, such as the IRDP (Integrated Rural Development Program) farmer training programs at thana level. Only cooperative members can attend IRDP thana training programs and larger farmers are in a better

political and financial position to gain membership. The access to IRDP training programs is restricted by the fact that only a relatively small percentage of farmers are able to join cooperatives.

Cursory Analysis of the Existing Education Systems:

A. Formal Education System:

Five features of the formal system are distinguished here:

- Physical plant;
- Efficiencies and costs of operation;
- Attendance costs and discrimination;
- Methodological and approach effectiveness;
- Relevance to national needs and, particularly, rural needs.

1. Physical Plant:

University, college and technical school facilities and equipment generally reflect improved status as a result of the resources invested during the 1950's and 1960's. By contrast, the physical situation of primary and secondary schools is one of deterioration and delapidation. The central fact is that many of the school buildings of Bangladesh represent the barest minimum in accommodation, at the mercy of heavy winds and rains, and unable to provide any real security for whatever equipment and furniture they contain.

Present budgetary shortages, inflated construction costs for conventional school structures, and current policies on construction hold no promise that this physical situation will be improved even minimally in the coming years.

2. Efficiencies and Costs:

Compared to many other developing countries Bangladesh invests very modestly in the development of its educational system. What the cost-effectiveness of that system may be requires critical study. Existing data

does not make it possible to judge this matter objectively. What appear as current trends raise serious questions concerning cost/effectiveness. For example, public investments have been heavily skewed toward higher education where approximately 2% of the school-going population attend while primary and secondary schools, containing 98% of the school-goers, obtain less than 30% of the total educational investment.

Similarly, much of the public education budget goes for teachers' salaries; almost 90% of the recurrent expenditures fall into this category. Yet the net result is low salaries for teachers. The average primary school teacher makes about \$27.50 per month. A rickshaw driver will earn more in an urban center during the same period. Conditions of work for primary school teachers are poor; classes often exceed 75 to 80 in size. Because of the low salaries, teachers are forced to seek supplementary income outside the school - a factor which educators believe saps the efficiency of classroom instruction.

About two-thirds of the 124,000 primary school teachers (of whom less than 10 percent are women) have received some teacher training at a Primary Teacher Training Institute. While this an improvement over the situation in the 50's, much of the training received is inadequate and not geared to rural education needs. What the efficiencies may be requires assessment. Of the 60,500 teachers at work in the secondary schools (of whom about 8 percent are women), about one-third have received training at Teachers Training Colleges. Again, this is an improvement over the 50's, but evidence suggests that the Primary Teacher Training Institutes and Teacher Training Colleges require much improvement in teaching methods and curricula before they can be regarded as effective. Again, the matter requires assessment.

3. Attendance Costs and Discrimination:

Bangladesh supports a formal primary school system in which 75% of all enrollees drop out before completing the primary cycle. (See VII - 1 under Illustrations for retention rates). Nearly 50% leave after the first year.

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This wastage rate signals that the primary school system is consistently reaching a very small segment of the country's school-age population at any point in time. In the secondary schools only about 10% of the boys and 3% of the girls who start in the formal system go on to complete Class X.

There are other aspects of discrimination in the system including the fact that both rural primary and secondary schools are less well-staffed and equipped than in urban areas. Similarly, recent evidence gathered in Bangladesh suggests that the educational level of the head of the family exerts great influence on enrollment rates among children of that family. Heads of families with primary and secondary training hardly ever fail to enroll their children. The average income of those families which enrolled their youngsters was two to three times higher than that of families without children enrolled. It thus becomes clear that relatively richer families in the rural areas are participating in the education system at the primary level, and comparatively poorer families are excluded from participation.*

The discriminatory nature of the formal school system shows up in costs of attendance. As noted earlier 'free' primary education represents a number of costs to each family. In secondary schools the government contributes about 40% of the costs. The remainder is collected through tuition, student fees, and local contributions. The direct tuition costs average about \$1.00 per month and fees may add another \$1.50 per month per student. Since there are fewer secondary schools the travel costs are higher for this level, perhaps as much as \$1.50 to \$2.00 per month. In addition, school uniform costs may be as high as \$15 to \$20 per year. Total costs per student will average more than \$60 per year, which equals the current per capita income of Bangladesh.

Three levels of technical training are offered: degree, diploma, and certificate. Less than 0.1% of the total student enrollment attend such schools. All three levels are both expensive to operate and relatively expensive to attend.

*Based on "1969 Education Research Project", Institute for Education and Research, May 1970, and various follow-up studies.

Higher education is offered by 6 public universities, 34 government and 592 private colleges. Students in all these institutions total about 220,000 annually. Costs of attending these institutions are relatively high. Monthly tuition costs are about \$2.50, exclusive of the costs of textbooks and transportation. Housing expenses are almost \$20 per month. All charges produce an average annual school bill per student of more than \$300, which is five times the level of per capita income in Bangladesh.

4. Methodological and Approach Effectiveness:

The educational system primary and secondary levels lack textbooks, provide few supplementary learning materials, and make use of little or no equipment. This general condition is mitigated somewhat in urban areas. There, schools often have some equipment; and in any case, the lack of instructional aids is offset by the fact that there are some modern economic activities and consumer goods which affect the content of education. These include newspapers, magazines, books, advertising, movies, and radio broadcasts.

On the whole the system relies on the lecture-memorize-repeat approach, or simple rote-learning. The extent to which this approach provides skills useful to rural needs is not highly regarded by professional educators.

5. Relevance to National Needs, and Particularly Rural Needs:

Rural primary and secondary schools appear to have a low external efficiency. Completers of such schools are ill-prepared to take a place in the rural economy as cultivators or farm-production-related activities. Instead, the schools are oriented toward entry to a following stage in schooling; and for those who are able to continue through to college or university education there are rewards.

Increasingly, higher degree graduates require more time before they are gainfully employed. Recent studies show that many Arts graduates (the largest category) may wait as long as four years before gaining employment.* Despite this wait, higher education continues to prove financially rewarding to the individual. But what this means for national development remains to be assessed.

As reported earlier, all three levels of technical education are expensive. Evidence suggests that they are not meeting the requirements of industry and agriculture, and graduates tend to require further apprenticeship training. Industry can and does hire untrained persons at lower costs and then provides them with apprenticeship training. Such practices strongly suggest that the external efficiencies of technical training institutions are also low. (For further details regarding the formal education system the reader may refer to Annex I).

B. Non-Formal Education Systems and Informal Education Mechanisms:

Three features of the Non-Formal Education systems are distinguished here:

- Diversity
- Access and discrimination
- Efficiency

1. Diversity:

Probably the most notable feature of non-formal education in Bangladesh today is its lack of diversity in terms of channels by which information/training can move to the populace as a whole. Conventional modes of non-formal education such as newspapers and other printed media, films, radio, and T.V. are very limited in numbers as well as users. While there are a variety of government and privately sponsored training and

*Source: Manpower Survey, Planning Commission, Government of Bangladesh, June 1974.

information activities which take place outside formal educational channels, their effectiveness and efficiency have never been assessed.

Virtually every ministry has training programs. Frequently two or more ministries operate what appear to be the same subject matter programs. The most notable is adult literacy training. At least five ministries are operational in this subject: Labor and Social Welfare; Rural Development, Local Government, and Cooperatives; Health and Family Planning; Information and Broadcasting; and Education, Cultural Affairs and Sports. Each of these training programs appear to be very limited in size, inadequately staffed, and insufficiently funded.

2. Access and Discrimination:

Certainly the greatest access to the populace as a whole is attained through more informal methods via the cultural drama groups. In most of the villages of Bangladesh there will be some kind of cultural drama group. Each group is usually self-sustaining or partially subsidized by local civil leaders, politicians, and/or the local committee which manages the affairs of the Mosque. These groups usually consist of a singer, a harmonium (piano-accordion) player, a tabla (drums) player, a magician and others. Some of the groups perform free and others charge a slight fee. These drama groups are popular to the extent that women want and are sometimes permitted to attend.

All through the 50's and 60's the government sought to make use of the cultural drama groups as conveyors of various messages to the populace. Means selected have varied from subsidization and training, through personal influence of government officers, to use of such groups for distribution of written and audio-visual messages. The success of these various efforts has never been assessed; but, in general, it appears that their magnitude of scale has been so small as measured against the magnitude of numbers of cultural drama group activities that the results were probably very limited. Nonetheless, it must be kept in mind that these cultural drama groups and also the village hat (market) provide greater access to rural inhabitants and therefore have potential as channels for

dissemination of information. All other existing non-formal educational channels are very discriminatory against access by rural inhabitants.

While the cinema is popular, both the price of entertainment as well as the concentration of cinema halls largely in District towns severely restricts access by the rural populace.

A radio broadcasting network was started in 1947. Today it consists of six stations capable of covering differing ranges of distance into the countryside for locally produced programs or those programs relayed from Dacca. These stations have varying degrees of efficiency and coverage. After the Russian-contributed 1000 KW transmitter is completed at Nayarhat (near Dacca), possibly early 1975, the whole of Bangladesh will be covered for the first time by a single channel medium-wave broadcasting capability.

Transistor radios are a desirable consumer item but high unit costs and government taxes on this item virtually denies widespread distribution through commercial channels. Single channel transistors assembled in Bangladesh range in price from \$40 to \$60. At these prices only urban sales can continue at a regular pace. Larger and medium-size farm owners are also buying these single channel radios as well as the more expensive two and three channel transistors. For all other rural inhabitants the prices are prohibitive.

Television is now in use on an experimental basis. Programs are currently transmitted from the Rampura TV transmitters which were commissioned in 1968. Present tentative plans call for a much-expanded system. However, a major allocation of resources as well as various policy decisions concerning coverage, content, importation, and manufacture of TV sets are still pending. At present no TV receivers are locally manufactured and importation is banned. There is said to be a maximum of 13,000 TV sets in and around Dacca.

As remarked earlier, various training programs such as those of IRDP serve only the larger and medium-sized farm owners. Similarly, most of the training

programs such as those operated by the Ministry of Labor and Social Welfare; and those of the Ministry of Education and Cultural Affairs largely serve people in urban areas.

In summary, access of rural inhabitants to education/information is extremely limited. With the exception of cultural drama groups and village hats, existing systems discriminate strongly in favor of urban-centered and better income groups of the population.

3. Efficiency:

There are varying technical criteria for measuring the efficiencies of non-formal information and education programs as organized on a targeted basis. Similarly, other kinds of criteria apply when endeavoring to measure efficiencies of media as communicators of information. These criteria have never been applied to Bangladesh on any scale. Furthermore, with the exception of a few individuals trained in the Ministry of Information and Broadcasting, there is a lack of staff qualified to organize, operate, and analyze the necessary evaluation of message impact, distribution, and long-term influence on behavior.

Generally, all indications point to very low efficiency rates for most non-formal systems in Bangladesh. (The reader may refer to Annex II for more detailed information regarding non-formal education systems in Bangladesh).

Review of Past Planning and Donor Trends in Education:

As has been noted in the section on agricultural, water and rural development, the period from 1947 witnessed a growing amount of developmental public investment in the former East Pakistan. The pace of investment ran in stages with the first major inputs beginning to occur at the time of the First Five-Year Plan of Pakistan (1955-60) and expanding in later Plans.

While the amount invested in the educational sector was considerable, like in every other sector it was not sufficient to meet the developmental needs in an adequate manner. The total sum, from 1947 to 1971, amounted to approximately \$265,000,000.

Of this amount about \$34,000,000 was invested in the First Plan (1955-1960) for both East and West Pakistan. Most of these funds went into administrative systems, college and university construction and development of technical institutes. In general, foreign donor support during that First Plan period was at a greater relative volume than amounts invested later vis-a-vis growing government development expenditures. The total was almost \$5,000,000 or about 15% of the educational development investment of that time.

With the adoption of the Second Plan (1960-65) the pace began to accelerate. In that period, \$72,000,000 was invested by the government in the educational sector of East Pakistan. U.S. Government assistance for this sector during that period totalled \$5,782,000. This sum was equalled by the combined assistance from the Colombo Plan, Ford Foundation, British Council, the Asia Foundation, UNESCO, and others.

The Third Plan (1965-70) expended \$159,000,000 in East Pakistan on this sector. During that time U.S. Government assistance rose to \$11,010,000 as did the total contributions from other donors. In total, the U.S. Government assistance through the entire 1947-71 period approximated \$19,200,000. About an equal sum came from all other donors during this same period.

Approximately 25% of this total expenditure by all donors including the U.S. Government was devoted to foreign scholarships and training. Of this, 1,500 Participant training grants were provided by AID or its predecessor agencies (See VII-3 for breakdown of USAID financed participants by field and level of training).

The remaining 75% of the funds, with very rare exceptions, was devoted to strengthening academic and technical public educational institutions serving the economic and urban elites of East Pakistan. These grants comprised: assistance to engineering and technical schools; development of Primary School Teacher Training Institutes and Teacher Training Colleges for secondary

school teachers; creation of specialized universities, faculties and colleges; provision of books and library training; development of educational training and research; expanded science teaching; experiments with secondary schools, teaching of English as a foreign language; and provision of educational training equipment including textbooks, teaching materials, and visual aids.

During that period the major U.S. Government contributions were for the following:

- Development of Primary Teacher Training Institutes
- Development of Teacher Training Colleges
- Expansion of the Bangladesh University of Engineering and Technology
- Creation of the Bangladesh Agriculture University
- Establishment of the Institute of Education and Research
- Assistance to Institute for Advancement of Science and Technology Teaching
- Development of Commercial Training Institutes

Many of these efforts, as well as those of other donors, were shaped largely by the priorities established in each Five Year Plan. As may be noted, for example, in the annual developmental expenditures for each category in the Second and Third Plans a very expanded emphasis upon secondary, teacher education, technical education, and university development characterized the government's priorities.

	Annual Expenditure 2nd Five-Year Plan: <u>East Pakistan</u>	Annual Expenditure 3rd Five-Year Plan: <u>East Pakistan</u>
Primary	\$14,000,000	\$ 24,900,000
Secondary	\$15,600,000	\$ 40,000,000
Teacher Education	\$ 3,310,000	\$ 9,000,000
Technical Education	\$12,200,000	\$ 32,600,000
Colleges	\$ 4,400,000	\$ 3,880,000
Universities	\$12,400,000	\$ 19,180,000
Scholarships	\$ 3,000,000	\$ 10,800,000
Social & Cultural Dev.	\$ 2,400,000	\$ 1,190,000
	<u>\$71,600,000</u>	<u>\$159,000,000</u>

Following Bangladesh's independence and during the period of rehabilitation most donor activity in the educational sector has reverted to the same mode as that prevailing prior to 1971. During the post-independence period almost \$30 million has been expended by all foreign agencies in the educational sector (See Annex-3 for breakdown by donor and project activity). This level of financial effort within a 3-Year span has almost equalled what was expended during 20 years in the pre-independence period. Virtually all of this assistance has gone into physical rehabilitation of facilities, and replacement of equipment and textbooks damaged or destroyed during the war. Again this assistance has largely served the urban elite.

Foreign donors have been relatively slow, since the adoption of Bangladesh's First Five Year plan in November, 1973, to activate projects supportive of the reorientation strategy for education expressed in that Plan. Considerable exploration activity is evident, with IBRD, Ford Foundation, SIDA, UNICEF and other donors fairly advanced on project identification and design work. Below are brief descriptions of donor plans in the education sector (USAID plans and strategies are discussed later in this paper):

British Council:

The British Council will continue to provide the bulk of its assistance to higher education. The key areas of British Council interest and planned assistance are listed below:

- University level Professor Exchange Programs
- Visiting Lecturers
- Technical Assistance in key education problem areas
- English Language Programs
- Award Schemes
 - 180 General Fellowships
 - 30 Commonwealth Education Fellowships
- Textbooks and reference books for Colleges and Universities
- In-Country Seminars on Education
- Development of Institutional Linkages
 - (a) Between Institute of Business Administration at Dacca University and one or two Business Schools in U.K.

(b) Between Dacca University and Center for South-East Asia Studies at Cambridge

- Training of University Laboratory Maintenance Technicians at Cambridge
- Observational tours in U.K. for Bengali Scholars and Educators

Asia Foundation:

The bulk of Asia Foundation's assistance will be in the form of textbooks and reference books for colleges, universities and public libraries. In addition, assistance will be provided for the activities listed below:

- In-Country Workshops on University Administration
- Assistance to the Department of Marine Biology and Oceanography at Chittagong University
- Assistance for library development in the form of overseas training and in-country seminars
- Overseas training in Public Administration and assistance to Department of Public Administration at Dacca University
- Development of Health Information Resources and Documentation Center at Tejgaon which will be used by all medical colleges and other medical facilities
- Provision of equipment and visual aids for nursing and para-medical education

UNICEF

UNICEF will continue to be concerned with adolescent welfare and education but plans in the future to allocate more of its resources on out-of-school adolescents. The specific activities which UNICEF plans to finance are listed below:

- Training para-medical personnel
- Assistance in upgrading the Primary Teacher Training Institutes and refresher training courses for in-service teachers
- Assistance in making school curricula more relevant
- Assistance for primary school teaching aids

S I D A

SIDA is considering assistance to IRDP in order to revitalize its rural training programs. Technical and participant training assistance are likely to represent the bulk of that assistance.

C A R E

CARE has been developing relevant printed materials and films to be used in IRDP training programs. CARE recently produced a pamphlet on rice cultivation to be used by TTDC officers and literate farmers. A few agricultural films have been produced which are intended for broad rural use.

CARE has also developed a low-cost jute/resin school house model which is currently being subjected to a series of durability tests. If the test results are encouraging, CARE may provide technical assistance to local private entrepreneurs in the manufacture of the necessary physical components for the fabrication of this low-cost school model.

I B R D

The IBRD has brought in a number of teams to explore the possibility of assistance for rural training activities. Two different proposals are now under the Government's review. One proposal, called the 9-Thana Project, proposes an intensive development program in 9 thanas in an effort to demonstrate the relationship of agricultural inputs and other services to increased production. The other IBRD proposal broadly addresses agriculture extension and rural education. The proposal includes assistance to the Government to consolidate its agriculture extension and training infrastructure, some technical assistance and funds for construction in an effort to revitalize the country's rural training, and extension systems.

Ford Foundation

Ford Foundation will continue to allocate the bulk of its assistance for the Bangladesh Rice Research Institute. It

will also provide funds for renowned consultants (e.g., Dr. Philip Coombs, Dr. Norman Borlaug, etc.) to provide short-term assistance to various Bangladesh institutions and for overseas training of key educators and managers. It is also assisting the Bangladesh Social Science Research Council and the Bangladesh Institute of Development Studies.

Analysis of the Government's Current Educational Strategy:

As expressed in the Bangladesh First Five-Year Plan (1973-78) the developmental strategy adopted for education can be described as:

gradualist-transitional aimed at balancing what has gone before in the country's education development with new orientations built into the system.

What are the new orientations to be? While the following does not constitute an exhaustive listing of the answers supplied in the Plan, it provides a sense of what the planners and educators thought important. This list includes:

- Since Bangladesh is to be a socialist society, the former role of philanthropists and private school-for-profit as significant supporters of the secondary and college levels will diminish and be substituted both by State and local community contributions.
- All children must be assured basic formal education at the primary level. To achieve this, and for purposes of economy, the necessary schools must operate on double-shifts with total teaching staffs per school increased by an average of 30%. In an effort to meet the inevitable increased demand for teachers it was suggested that teacher qualifications be lowered in general and that qualified retired persons and women be encouraged to join or rejoin the teaching profession. Any necessary school construction should be based on local materials used by local communities for their own housing requirements.
- Female participation in the entire school system, both as teachers and students, should move upward as a general average from about the 12% level to 25%.
- At both primary and secondary levels the education provided must be improved in content and diversified

where appropriate. Diversification should be aimed at making the schools responsive to rural needs and the labor market.

- The growth rate of secondary schools and colleges should be limited and their courses oriented towards vocational, industrial, science, and agricultural subjects.
- Vast expansion, by 1,860%, of facilities for the production of skilled workers.
- Introduction of a variety of non-formal education systems including: People's Schools, Youth Camps, Literacy Schools, Women's Education Centers, Feeder Schools, Workers' Schools, and the adoption of radio and T.V. as basic teaching tools.
- Expanded emphasis upon educational planning and management, and social science research.

How to organize, staff, and finance the elements of this new orientation while, at the same time, balancing these against the expansionist demands built into the conventional educational system proved to be the pivotal question when implementing this Plan. At the beginning of the new Plan the projected annual investment cost for the adopted strategy was estimated at \$83,600,000. This estimate matched neatly with the projection contained in the much more conventional, never-implemented, Fourth Five Year Plan for Pakistan (1970-75) in which an annual investment of \$78,000,000 in East Pakistan education had been planned.

Outstanding differences between these two projections are reflected with particular reference to the Bangladesh First Plan's cutbacks and expansions of various items as compared to Pakistan's Fourth Plan for East Pakistan. The pivotal cutback was in allocation of funds for investment in colleges. Here, the Bangladesh government's assessment that something must be done to slow the rate of college expansion is evident. On the expansion side, the need to push growth of technical education is reflected. Similarly, introduction of non-formal education on a large scale, and emphasis on buildup of educational planning, management, and related social science research skills are all emphasized. Similarities between the two plans, in terms of balancing

for conventional educational systems development are notable in teacher education, university expansion, and public administration training.

A budgetary comparison illustrates these differences:

	Projected Annual Investment: 4th Five-Year Plan, East Pakistan	Projected Annual Investment: 1st Five-Year Plan, Bangladesh
Primary	\$ 15,400,000	\$ 13,780,000
Secondary	\$ 16,600,000	\$ 14,400,000
Technical Education	\$ 6,650,000	\$ 12,230,000
Colleges	\$ 8,600,000	\$ 3,120,000
Universities	\$ 6,000,000	\$ 9,100,000
Teacher Education	\$ 3,200,000	\$ 3,960,000
Non-Formal Education	-	\$ 5,000,000
Public Admin. Training	\$ 2,200,000	\$ 1,820,000
Social Sc. Research	\$ 50,000	\$ 600,000
Educ. Planning & Mgt.	\$ 700,000	\$ 1,000,000
Totals -	\$ 78,000,000	\$ 83,600,000

One year of experience in implementing the Bangladesh First Five-Year Plan has begun to demonstrate the gaps between what is possible under current conditions and what the Plan strategy emphasized. Invalid Plan assumptions, poor project design and development, inadequate or slow exploitation of foreign donor and loan assistance, inefficiencies in the educational policy and management systems, and the need to divert resources to care for other aspects of the limping economy are all factors in creating the gaps.

These gaps are quantitatively reflected in the projected Annual Development Plan (ADP) for 1974/75 and are best

illustrated in a comparative table:

	Projected Annual Investment: 1st Five-Year Plan, Bangladesh	Projected Annual Investment: 74/75 ADP, 1st Five- Year Plan, Bang- ladesh	% Change Plus or Minus Against Plan
Primary	\$13,780,000	\$ 6,500,000	- 53%
Secondary	\$11,400,000	\$ 4,963,000	- 66%
Technical Educ.	\$12,230,000	\$ 6,679,000	- 46%
Colleges	\$ 3,120,000	\$ 5,720,000	+183%
Universities	\$ 9,100,000	\$ 6,500,000	- 29%
Teacher Education	\$ 3,960,000	\$ 1,625,000	- 59%
Non-Formal Educ.	\$ 5,000,000	\$ 130,000	- 97%
Public Admin. Trg.	\$ 1,820,000	\$ 600,000	- 68%
Social Sc. Research	\$ 600,000	\$ 912,500	+152%
Educ. Plan & Mgt.	\$ 1,000,000	\$ 1,200,000	+120%
Total -	\$83,600,000	\$40,093,000	- 52%

Trend indications drawn from the above figures plus a comparison with the overall sector budget allocations for the First Five Year Plan show the following:

1. Total funds to be invested in the education sector for 1974/75 vis-a-vis other development allocations have declined from 8% of the Plan projection to 6%. Diversions from this sector as well as the sectors of Agriculture, Water and Rural Institutions have gone to the sectors of Industry; Power and Natural Resources; and Transport.
2. This cutback in the Education Sector now results in an allocation for 1974/75 which is somewhat less than the annual investment levels of the Pakistan Third Five-Year Plan for East Pakistan (on a price-adjusted basis) for 1965-70.
3. Since the number of students and teachers in the system have increased by more than 35% over the past five to eight years, this cutback in development resources allocated signals a slowdown if not stoppage of all planned reorientation efforts.

and a continuing deterioration in the quality of conventional education offered.

4. Planning and education officials are trying to allocate (as much as possible under increasing money shortages) a proportion of the remaining developmental budget what they regard as the most critical elements of the system related to the new orientations described above. These are: technical education; educational planning and management; and accompanying social science research.

5. In some instances, such as non-formal education, the proposed reorientation remains of high priority interest; but, to date, there has been insufficient Bengali and foreign donor planning development to justify allocation of slashed resources on any scale to this subject.

6. Plan strategy assumptions concerning the Ministry of Education's ability to slow down secondary school and college expansion have proven invalid. As pointed out by the Planning Commission:

"....Establishment of colleges under the initiatives of local leaders and philanthropists continue without any effective check. Every thana of Bangladesh by now has more than one college teaching humanities and commerce only... At least 1,500 secondary schools and 200 colleges were opened during 1973-74. If this mushroom growth of educational institutions cannot be checked and the whole system of education evaluated....the strategy of balanced educational development will be frustrated...."

The net result, today, of all these circumstances is continued operation and expansion of the existing academically oriented, urban-access, conventional school system at all levels. Planners and educators, as noted above, continue to cling to what they regard as potentially key points for affecting change in the whole system; but, in general, their high hopes for gradually attaining a reorientation in the system are weakening.

Implications for AID Strategy:

Evidence cited in this paper indicates that the present educational system is not responsive to the rural populace except the more advantaged. Given continuation of present policy and financial constraints regarding the system, it also appears that efforts to achieve an orientation toward serving the disadvantaged will encounter much difficulty.

Evidence suggests that a number of planning and educational officials perceive what needs to be done if the system is to be "opened up" to the disadvantaged. They are aware that changes in the formal system's priorities and effectiveness plus introduction of non-formal systems are both required. But experience earned under the First Plan to date suggests that erection and maintenance of a balance between conventional systems and new orientations is the most troubling to initiate and sustain.

This problem becomes most critical when considering the educational needs of rural families. Insofar as education is considered as a major element contributory to rural development and agricultural growth, it has to be conceived and implemented in terms which are much broader than those usually applied. At least four types of education are required. They include: general or basic education; family improvement education; occupational education; and community improvement education.*

How to get these four types of education effectively deployed at low cost is a major portion of the problem of new orientation. When it is realized that the target audiences for these types of education number three and not one, the problem assumes even more intractable dimensions. The target audiences which must be reached are: (a) persons employed directly in agriculture; (b) persons in rural areas engaged in non-farm artisan and entrepreneurial activities; and (c) rural administrators and planners.

Given these circumstances, if AID is to have any effect upon educational opportunities for the rural disadvantaged, certain exploration and test activities are strongly indicated as an initial strategy.

*P.W. Coombs with Manzoor Ahmed "Attacking Rural Poverty - How Non-Formal Education Can Help.", May 1974.

These explorations and tests could include the following:

1. The Government wishes to minimize the unit cost of formal education and optimize it's effectiveness. One means chosen, and supported, is through allocating a portion of it's strained resources for educational planning and management.

In this context AID could explore the desirability and feasibility of supporting in-depth education sector analysis either as a limited-term exercise helpful to government on immediate planning problems or as on-going systems built into new educational planning and management operations. Alternatively, there are sub-sector needs for analysis such as the formal rural school systems or educational cost/effectiveness and others which might be examined either as limited-term studies or as continuing operations built into the economic and education planning activities of the Government of Bangladesh.

In this connection, USAID herein proposes a broader perspective regarding formal education systems than that contained in the Education Section of the IRBD report.* The IRBD report does not entertain the possibility of using the formal system as a supportive tool in achieving the Bangladesh Government's national development goals. The Government and donors are painfully aware of the inadequacies in the formal education system which will not disappear and will continue to deplete the nation's limited budgetary resources, leaving very little for new orientations as proposed in the Plan. A more basically sound reason to examine the formal system in-depth for potential development investment components is that the rural formal school system despite its skew toward the advantaged does provide access to education for more rural inhabitants than any other source. A review of statistical data and training and education records at thana level reveals the following regarding rural sources of education and percentage of coverage:

*Bangladesh - Development in a Rural Economy, IBRD,
July 31, 1974.

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<u>Source of Education/Information</u>	<u>Percentage of Rural Population Reached</u>
Model Farmer Training Program	5%
Family Welfare Workers	2%
Formal School System (Rural)	35%
Agriculture Radio Program	.3%
Agriculture Extension Agents	8%
IRDP Cooperatives	10%

2. The Government continues to be interested in non-formal education, but lack of intensive study of what is practicable concerning this subject in rural Bangladesh coupled with increasing formal school demands against declining resources have stultified potential development of non-formal education.

Nevertheless, a Non-Formal Education Commission has been formed under the Chairmanship of the Vice-Chancellor of Jahangirnagar University. Representatives of all key nation-building Ministries sit on the Commission. The Commission conducts monthly meetings. Progress achieved to date has been limited to defining alternative learning systems for priority target audiences. So far, the priority audiences suggested by the Commission for preferential attention are: the landless, out-of-school youth, and fishermen.

The Commission has received some limited external support from the Ford Foundation in the form of short-term technical assistance supplied by Drs. Philip Coombs and Manzur Ahmed. But such is the magnitude of need for development of this field that AID might quickly contribute to the mounting of exploration and design/execution of tests in non-formal education. These might include a series of projects of which the Rural Information Service proposal is the farthest developed at this time. Others could be linked into Family Planning, rural-youth employment, the development of skills for rural market town growth centers and increased education/information access for women. Assistance might be considered for the priority target groups already identified by the Non-Formal Education Commission.

3. The government's expanded and continuing interest in social science and educational research also provides possible opportunities for testing of models. These could be turned to advantage both for supporting various elements of study in sectoral or sub-sectoral analysis exercises and in developing baseline data as well as evaluating what happens in tests designed to provide types of education to the rural disadvantaged.

There are institutional structure and trained staff already in place to support some elements of the necessary research. Two are comprised of the Institute of Education and Research of the University of Dacca (IER) (See Annex 4), and the Bangladesh Institute of Development Studies (BIDS). The former was developed as a result of AID assistance in the 1960's and the latter is now receiving limited assistance from the Ford Foundation. Both institutions are relatively well staffed and competent and offer opportunities for strengthening.

Similarly, though with less developed institutional structure now in place, the recently established Social Science Research Council has potential. It is a possible means of convening Bengali research talent and focusing the same on some of the special studies and evaluations required in sector and sub-sector analyses and in designing/monitoring non-formal and educational and rural development projects. AID might explore the possibility of providing assistance for the development of this Council and the necessary research skills.

4. How the government's current emphasis on expanded technical education might usefully be related to rural market town growth and the expansion of employment opportunities for rural youth would appear to be another avenue for exploration. This might again require the design, test, and evaluation of pilot models. It could also require exploration of how certain educational technologies might best be adapted at the least cost for rural vocational skills training applications.

Project Proposals:

Given the AID Implementation Strategy in the preceding section and on the basis of currently available data and information, there are a number of potential project activities in the education sector in which AID may want to invest. These are listed below on a project-by-project basis.

Education Sector Survey and Analysis

In general, an education sector survey and analysis should be thought of as a continuous process by which the government examines its stated goals and objectives in the light of shifting priorities, successes, and delays in plan implementation. Only in this manner can the Plan be a responsive, flexible instrument, sensitive to the actual performance of the sector.

In this paper the process which is the sector survey and analysis is considered within the framework of a project proposal. This approach has merit, particularly in view of the apparent short-comings of the Plan. Further, it appears that few education decision-makers within the government of Bangladesh are familiar with the instrument of sector survey and analysis, and would therefore likely consider its application as a new activity or project.

"The primary objective of sector planning is to supplant the project-by-project approach, and thus to provide a comprehensive view of all education and training activities and their inter-relationship in order to identify the most strategic projects for national investment and possible external assistance. The sector approach requires wider ranges of data and more sophisticated analysis in order to formulate broad strategies of human resources development and utilization. Its objective, in essence, is comprehensive and rational planning of all education and training activities. The sector approach, moreover, goes far beyond the traditional boundaries of formal education; it encompasses training and human resources development in other sectors such as agriculture, industry, health, nutrition and public service. Thus, unlike other sectors, education or the nationwide learning system is not a relatively self-contained system. It has multiple inter-sections with almost every facet of national development. In

reality, the sector approach involves a comprehensive analysis of national development from a human resources perspective.** An added attraction to the sector survey and analysis, aside from the development of broad sector strategies, is that it will be extremely valuable in providing the data and justification for donors to eventually consider providing assistance for those activities which are at this time inadequately defined or focussed.

It is suggested that this project be implemented in two phases. Phase I would be a sector survey which is simply a descriptive profile of part or all of the country's system of education and training. This phase may take from six months to a year to complete. The initiation of Phase II is contingent upon the completion of Phase I. Phase II would be a sector analysis which involves a study of the dynamics of the sector's operations in producing outputs, the analysis of alternative policies for achievement of specified goals, an evaluation of constraints and feasibility of various courses of action. It is evident that Phase II involves a more in-depth analytical approach; thereby taking longer (from 12 to 18 months) than Phase I and requiring a different mix of technical expertise. Estimated costs of Phases I and II are given below:

Phase I - Sector Survey

12 mo. - Full-time Expatriate Consultant	\$ 60,000
6 mo. - Short-term Expatriate Consultants	\$ 30,000
Local Consultants (e.g. IER, etc.)	\$ 10,000
Other Local Costs	\$ 15,000
Total -	\$115,000

Phase II - Sector Analysis

18 mo. - Full-time Expatriate Consultant	\$ 90,000
18 mo. - Short-term Expatriate Consultants	\$ 90,000
Local Consultants (e.g., IER, etc.)	\$ 20,000
Other Local Costs	\$ 30,000
Total -	\$230,000

*F.H. Harbison, Education Sector Planning for Development Nationwide Learning Systems, Overseas Liaison Committee, American Council on Education 1973, PP 7-8.

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Rural Information Service

1. Introduction:

Bangladesh has a number of existing channels for dissemination of information to rural inhabitants. At this time little useful information is flowing through these channels and the information actually delivered does not reach a significant percentage of rural inhabitants. The more noteworthy existing channels for rural information dissemination are: the Model Farmer Training Program, the formal school system, the Agricultural Radio Program, agricultural extension assistants, family welfare workers and cooperatives. A number of cursory studies have revealed that these existing channels often deliver outdated, misdirected and irrelevant information. However, there are information materials currently available, which if slightly improved and made more relevant, could be used in a coordinated information dissemination system. The Government believes that information coverage to rural inhabitants can be increased by using all information dissemination channels in an integrated system, and that the impact on rural inhabitants can be substantially increased by delivery of coordinated themes.

The Government indicated in the Plan that there are serious information gaps in rural Bangladesh, and that steady flow of timely and relevant information in an integrated way is a critical ingredient in closing this information gap in an attempt to achieve stated national development goals. The Government recently demonstrated its commitment to addressing this gap by marshalling its limited staff resources to design a pilot rural information dissemination project.

2. Brief Description of Pilot Rural Information Service Project:

There will be two distinct phases to this pilot activity. The two phases will have the same set of sector goals but different project purposes, and each will require a different mix of technical, commodity and participant training assistance. For illustrative purposes, Phases I and II are briefly described below:

- a) Phase I - Develop an effective information system by demonstrating and testing the coordinated use of

existing channels for relevant information flow to rural inhabitants. This phase will require a heavy technical assistance emphasis on the systems analysis side. Insofar as necessary, multimedia themes will be used to test the integrated system.

- b) Phase II - During this phase relevant multimedia materials will be demonstrated and tested in the integrated rural information dissemination system developed in Phase I. Phase II will require a heavy technical assistance emphasis on the multimedia side.

This pilot activity will focus largely on existing, useable formal rural information dissemination channels. There are also a number of informal information channels (e.g., rumor, cultural drama groups, village notables, etc.) that may be considered if they can be easily exploited and will reinforce the more formal channels. The most cost effective and coverage model will be developed through a series of programmed information campaigns. Various themes (e.g., wheat cultivation, vegetable gardening in backyard, etc.) will be adopted for dissemination through all channels simultaneously in a campaign formulation. The methodology to be used in developing the maximally effective channel mix, and the desired types and amount of information flow within a channel will be as follows: (a) select a number of controlled thanas (probably four) on the basis of well defined criteria, (b) provide different treatments to each thana, and (c) initiate post dissemination surveys on coverage. An example of the different treatments to be given is below:

Controlled Thanas:

Thana No.1 - No treatment whatsoever

Thana No.2 - Receives all possible treatment, i.e., complete blast of information through system

Thana No.3 - Receives all possible treatment, except radio

Thana No.4 - Receives only radio channel treatment.

The duration of the pilot rural information service activity will be 2 crop years. It is estimated that the total cost of initiating the Phase I pilot project will be about \$350,000. USAID may provide assistance for the following

components of the project:

48 man/mo. Expatriate Consultants	\$ 150,000
Commodities (radios, tape cassettes, etc.)	\$ 50,000
Participant Training	\$ 15,000
Local Consulting Services	\$ 20,000
	<u>\$ 235,000</u>

The Government would contribute the remaining equivalent of \$115,000 for the costs of 23 Bengali professionals to be assigned to this activity, and also for some other local costs.

Adaptation/Revision of Textbooks and Other Printed Materials

Many of the history and social studies textbooks currently used at primary, secondary and college levels were inherited from Pakistani days. Independence naturally necessitated a revision of these textbooks, but generally a western and urban orientation has remained throughout. USAID assistance could be provided on a pilot basis to adapt/revise textbooks, placing more emphasis on current needs, in particular agriculture and population education. A pilot activity consisting of 12 man-months of technical, commodity and participant training assistance may be considered. (\$100,000)

Population Education

To generate more interest in population education throughout the country, AID may wish to explore, with other donors and the Government, the possibility of financing the costs of seminars and discussion groups for key educators at all levels within the nation's education system. In addition, special attention may be given to adaptation/revision of textbooks and other printed materials to reflect the over-population reality. (\$150,000)

Entrepreneurial Training

As the Government increases its emphasis on domestic production, the number of entrepreneurs required to run small scale agro-industries and rural businesses will also expand. It will be necessary to train new entrepreneurs to fill this manpower gap in the rural areas. New behavioral technologies related to rural entrepreneurship have been developed over the past ten years with assistance from UNIDO, Ford Foundation and USAID. AID may be interested in exploring with the UN and others the possibility of providing technical assistance to the Government to develop entrepreneurial training programs. (\$75,000).

Background Data and Notes: Formal Education Systems

The Physical State of System:

The average primary school building is of concrete-brick construction, is 15 - 20 years old, and is in serious need of repair. Perhaps fifteen percent of the schools are little more than bamboo shelters, with bare earthen floors and thatched roofs, constructed with slight regard for light and ventilation.

A rural primary school may have a chalkboard - often a portion of a wall painted black - and apart from this teaching aid, little else is routinely provided by the government. Globes, maps, wall charts and the like are seldom seen, and if available, are out of date. Although a donor made a package of materials (e.g., a football, blackboard and chalk, bell, pencils and paper) available to all primary schools during the reconstruction period, a recent survey of schools in Chittagong and Mymensingh Districts revealed that these materials have been subject to pilferage, later to reappear for sale in the local market.

Wooden benches and desks of local manufacture may be provided, but costs and the crowded conditions of many schools often result in students sitting on mats on the floor.

In the majority of schools washrooms and toilets do not exist; luncheon (tiffin) or school-feeding facilities are not available; sports and recreational equipment and facilities are the exception and not the rule.

The war of independence exacted a toll on the schools of Bangladesh, and UNICEF, USAID, and other donors have contributed sizeable amounts for the rebuilding of damaged units and the construction of entirely new facilities in some localities. Of about \$8 million earmarked by UNICEF for primary school construction only a relatively small amount has been expended. Of the \$3.8 million of USAID funds programmed for secondary school reconstruction only \$800,000 has been expended and it is likely that the remaining \$3 million may be reprogrammed for other faster moving activities. Material shortages, especially of bricks and cement, also

slowed the reconstruction program. With about 32,000 primary schools and 7,000 secondary schools, Bangladesh in any case has a herculean task to put even a small fraction of schools in better order.

Cost and Efficiency Considerations:

There are many ways to review the financial investment a nation makes in formal education. The listing below summarizes the situation for Bangladesh.

Investment in Education

1. Percentage of GDP (1970, E.Pakistan)	...	2.3%
2. Percentage of First Five Year Plan (1973-78, Bangladesh)	...	8%
3. Percentage of Recurrent Budget (1973-74)..		20%
4. Per Pupil Recurrent Expenditures (1970):		
Primary Schools	...	\$ 2.50
Secondary Schools	...	\$12.50
5. Per School Development Expenditures (Non-recurring, for 1970)		
Primary Schools	...	\$150.00
Secondary Schools	...	\$915.00
6. Portion of Recurring Expenditures for Teachers' Salaries	...	85-90%
7. Portion of Recurring Expenditures for Purchases of Teaching Materials, Equipment and Supplies.		
Primary Schools	...	1%
Secondary Schools (mostly science)	...	6%

8. Average Monthly Teacher Salary

Primary Schools	...	\$ 27.50
Secondary Schools	...	\$ 40.50

9. Investments by Level (Figures for the end of the Plan Period).

<u>Level</u>	<u>Percent of Total Student Enrollment at the end of the Plan Period</u>	<u>Public Investment in dollars (Millions)</u>	<u>Percent of Total Formal Education Investment</u>
Primary	72.4	67.12	23
Secondary	25.4	70.50	25
Degree College	1.3	27.47	10
University	0.3	43.75	15
Technical Education	0.4	58.55	20
Teacher Education	0.2	20.00	7

Item six above clearly indicates that much of the public education budget goes for teachers' salaries; nearly all of recurrent expenditure falls into this category. Item 7 is an "educated guess" and probably is an overstatement of the funds committed to teaching materials, equipment and supplies. Most of such funds in the secondary schools go for purchase of science equipment and supplies. Only the barest minimum of government money is used for library development, for example.

Item eight indicates that the average primary school teacher makes about \$27.50 per month and the average secondary teacher \$40.50. While in terms of annual per capita income such salaries may appear quite attractive, the average teacher finds he cannot manage on this income. The demands on his salary tend to be substantially higher than those of rural poor farmers. According to a 1968 survey by the IER, the average teacher will usually send all of his children through primary school, and will try very hard to see them through secondary school. This, as we have pointed out, requires a considerable commitment of private funds.

Item nine of the preceding list indicates current thinking about where development investment ought to go within formal education. By the end of the Plan period, about one-fourth of the total monies will go to primary education, the sub-sector with the greatest number of schools, teachers, and students. Another quarter will be committed to secondary education, which by 1978 will still enroll only one-fourth of the age-group. Another quarter will be expended on less than two percent of college and university-age students, and a final quarter or so will be spent on technical education and teacher education, each enrolling a very small fraction of students.

Technical Education:

Three levels of technical training are available: at the degree, diploma, and certificate levels. Degree courses are given in Rajshahi and Chittagong, and soon will be available in the new college at Khulna. Currently some 3000 students attend the two operating degree-granting technical colleges. The diploma level is composed of technical and commerce programs, and some 2800 graduates are produced annually, in twenty polytechnics and a like number of commercial institutes and vocational training centers.

At the certificate level, although 3400 places are available for this kind of training in 22 vocational training institutions and thirteen polytechnics, only about 1500 complete training each year for employment in the agricultural and water sectors as pump operators, tractor drivers, and mechanics.*

Higher Education:

There are six Universities: Dacca, Rajshahi, Chittagong, Jahangirnagar, Mymensingh Agriculture University and Bangladesh University of Engineering and Technology. University enrollment was 23,700 in 1972-73.

* For further information regarding the state of vocational training institutions in Bangladesh the reader may refer to Mission Report: Vocational Training, SIDA/ILO, March 1973.

In that same year, 120 intermediate and fifty degree colleges received government recognition, bringing the total to 34 government and 592 private colleges - an increase of nearly 30 percent in one year. Enrollment in these institutions in 1972-73 was estimated to be about 200,000.

Because the private return on tertiary education is relatively high, there is considerable public pressure on the government from the mostly urban, middle class for continued expansion of higher education - a political force that is difficult to withstand.

The Methodology and Technology of the Education System:

A 1968 IER survey reported on the work of the classroom teacher and even certain conclusions concerning the methodology and technology employed:

1. Almost one-fourth of all teachers make no use of any type of lesson planning for classwork; another quarter use only a bare outline. In other words, nearly one-half of all teachers come to class in a state of unpreparedness. They basically focus on the "syllabus", have little time for personal or vocational guidance (and are unprepared in this direction in any case), and rely heavily on corporal punishment--the cane--to maintain discipline and order.

2. Eighty-nine % of primary teachers and 71% of secondary teachers are simply unable to secure the teaching supplies and equipment they feel is needed for a minimum instructional effort. Although the government makes a "contingency allowance" of Tk.15 - 20 (about \$1.80) available to each school for supplies and materials purchases; this is woefully inadequate. The average primary school in 1970 had about 200 students; the average secondary school 300.

3. Typically teachers make little use of any sort of audio-visual adjunct to teaching, whether commercially produced or of their own fabrication. As noted, the money is not available for purchases of equipment (except in the case of a small amount for science teaching in secondary schools), and teachers are not trained or encouraged to manufacture their own instructional aids.

4. The Inspectorate Division of the Directorate of Public Instruction (DPI) provides little supervision and specialist assistance to classroom teachers. Primary schools are supervised by Thana Education Officers (TEO), at least they are assigned this task. TEOs tend to be overworked and according to a recent survey in Chittagong District, spend perhaps as much as one-half of their time in such activities as conducting elections, helping with consul and similar assignments in relief work, and so forth.

Secondary schools are supervised by Inspectors of the District Office of the DPI, but have the same problems of too little time and too many duties. Although an acceptable minimum would be a monthly inspection visit to each primary and secondary school, the norm is closer to once or twice a year. Some schools in outlying, inaccessible areas have not been visited by inspectors for years.

5. The supply of textbooks continues to be a problem. In spite of recent external donor assistance in supplying books and other materials aimed at stimulating their indigenous production and distribution, many school communities do not receive their allotment. In Chittagong District the Bangladesh School Textbook Board (BSTB) authorized agents, together with local market book dealers, compel students to purchase note books (prep notes) at a premium along with the officially-approved texts. This practice apparently goes relatively unchallenged; Thana Education Officers, for example, have no administrative control over BSTB agents. On the other hand a non-Government source reported that even if Thana Education Officers could have administrative control over BSTB authorized book agents, the demand for note books would continue until DPI de-emphasized the importance of the annual, Government approved standard examinations. If more emphasis could be placed on creative thinking, rather than rote-learning, the demand for note books would naturally diminish.

Background Data and Notes: Non-Formal Education Systems

This Annex is intended to serve as a supplement to references made in Chapters 5 and 7 regarding the non-formal education system.

A. Bangladesh Academy for Rural Development:

Relatively wide use of non-formal education technology in support of broad based rural development began in Bangladesh in the 1950's. The main institutional locus for this non-formal education activity was the Bangladesh Academy for Rural Development (BARD) established by Dr. Aktar Hameed Khan. The funds to establish BARD came largely from the then East Pakistan Government, Ford Foundation and USAID. But BARD was largely an indigenous idea conceived out of Dr. Khan's conviction that human resources could be marshalled for the cause of broad based rural development through training and leadership. The initial experiments in the surrounding area of Comilla town in Kotwali Thana were very encouraging. The then East Pakistan Government decided to learn from these successes and continued to experiment with a number of training and rural organization treatments. Eventually, a number of relatively effective rural development and training models were developed and tested. The three most noteworthy models are described below:

Thana Training and Development Center

The purpose of colonial government representation at thana level was for revenue collection and security. Rural attitudes toward thana government officers did not significantly change after the independence of Pakistan in 1947. Therefore, Dr. Khan thought that a government complex apart from thana tax collection and security personnel may change rural attitudes toward the government. It was also felt that the thana was the most practical and effective level for an interface between the government and the people. Thus the birth of the Thana Training and Development Center (TTDC).

The TTDC complex housed representatives of all key nation building ministries who were to be available for extension assistance and training programs. The TTDC concept was rigorously tested in Kotwali Thana and the results were extremely encouraging. The TTDC concept was then replicated in 20 additional thanas and the results were again encouraging. Subsequently, it was decided that the TTDC concept would be replicated throughout the former East Pakistan. Construction of TTDC's in most of the thanas began in the 1960's and some construction is still going on. However, in all thanas there are functioning TTDC's although in some thanas the physical plant is not fully completed.

Two-Tier Cooperative System

This model was developed in an effort to arrive at the most effective rural organization network to mobilize farmers. Sheer numbers dictated that it was not possible for the TTDC to service all farmers individually. Subsequently, the two-tier model was conceived whereby farmers at village level would form primary cooperative societies and these societies in turn would be federated at thana level in an organization called the Thana Central Cooperative Association (TCCA). Theoretically, the village level societies would make their material and training or extension requirements known to the TCCA which in turn would compile a thana-wide requirements list before approaching the TTDC. TCCA's are currently operating in 152 Thanas of Bangladesh.

Model Farmer Training Program (MFT)

The MFT program was developed as a mechanism for flow of technological know-how and new information to the lowest levels. The procedure for gaining access to the MFT was and still is for the village level societies to nominate a "model farmer" and elect a manager for its cooperative society. These two men then attend on a weekly basis the MFT programs conducted at the TTDC on a variety of subjects, e.g., use of fertilizers, wheat cultivation, cooperative management, etc. The trainers in this MFT are the TTDC officers (representatives of key nation building ministries). The average duration of instruction usually is four to five

hours a day once a week. The model farmer and manager receive per diem at a rate of less than \$1.00 a day to defray travel and food costs.

After the model farmer and manager finish the weekly training courses, they are supposed to pass on their newly gained knowledge to other members within their primary cooperative society in a weekly session at village level. In addition, the model farmer is supposed to set-up demonstration plots or use his own land for demonstration purposes with the assistance of the Thana Agriculture Extension Officer.

Since Independence, BARD has not managed to undertake new or innovative activities nor has it managed to refine old concepts or adapt old ideas within the framework of a changed socio-economic system and a new set of national development priorities. BARD has almost come to a complete standstill, except for some on-going training programs for TTDC officers being conducted on the BARD campus. The reasons for this stagnation are probably budgetary constraints, lack of guidance from national government and lack of leadership and dynamism among the depleted staff of the Academy.

B. Integrated Rural Development Program (IRDP):

IRDP was organized largely for the purpose of promoting the rural development concepts developed at Comilla and to replicate the two-tier cooperative and the rural training

models. IRDP first started in 33 Thanas and has since expanded to a total of 152 Thanas. (There are 419 thanas in Bangladesh).

IRDP has a total field and national staff of about 300. Activities in the field are coordinated by the Thana Project Officer (TPO). The TPO may have 2 or 3 assistants. At national level there are separate technical divisions for credit, cooperatives, marketing and training. Recently, with AID funds from the Relief and Rehabilitation Grant, IRDP established curriculum and evaluation cells.

The IRDP training programs have been poorly attended over the last year. In many instances less than 30% of model farmers invited to attend training programs at the TTDC actually

attend. A recent analysis* of IRDP rural training programs reveals that very little new information is being presented and the information actually presented is not sufficiently attractive to encourage greater attendance. The lack of visual aids, poor teachers and little or no demonstration activities contributes to the unattractiveness of IRDP training.

C. Other Non-Formal Education Activities:

Apprenticeship Training - Many private businesses in Bangladesh meet their manpower requirements through apprenticeship training. As a matter of fact, it is estimated that more manpower enters the private sector labor market through this mechanism than through the various vocational and technical schools supported by the Government. In a number of interviews with private entrepreneurs a question was asked regarding qualifications required of employment seekers. The qualifications cited most often were interest, motivation and some inherent ability to develop skills. The entrepreneurs stated that they almost never hire graduates from the government vocational, technical and polytechnical institutions because these graduates do not have an appreciation for the traditional increased-work-increased-pay incentive.

*Miel Goldman, "Training and Extension: An Observer's View", September, 1974.

Breakdown of USAID and Other Donor Assistance
to Education Sector Since Independence

During the liberation war educational institutions were damaged; textbooks were lost or destroyed; science equipment was stolen or damaged and many teachers, professors and students lost their lives. Since independence USAID and other donors have provided almost \$30 million to assist the Government in rehabilitating the education sector.

1. USAID Assistance by Activity and Amount:

- Bangladesh School Textbook Board (BSTB)	\$ 5.7 million
- University Textbooks ...	\$ 500,000
- University Science Equipment ...	\$ 850,000
- Technical Assistance to BSTB ...	\$ 560,000
- Secondary School Reconstruction..	\$ 3 million
- University Reconstruction ...	\$ 300,000
- Integrated Rural Development Program	
- model farmer and manager training	\$ 780,000
- thana officer training ...	\$ 1.2 million
	<u>\$12.890 million</u>

2. Other Donor Assistance:

Since independence foreign donors have provided the following forms of assistance to the education sector:

- British Council - 18,000 university textbooks	\$200,000
- UNICEF	
- Construction of 8,000 primary schools	\$ 8 million
- Danish Aid Mission	
- Replacement of damaged polytechnical equipment	\$500,000
- Asia Foundation - Textbooks for colleges and universities	\$600,000

- International Rescue Committee - Stipends for students at Rajshahi University \$100,000 (AID Grant)
- CARE - Assistance to IRDP for non-formal education activities \$100,000
- SIDA - Assistance to IRDP -

Description of Institute of Education and Research
(IER) of the University of Dacca

The IER was established in 1959 as one of two sister institutions (the other at the University of the Punjab, Lahore), charged with a double assignment: to provide graduate training for teachers who would then be prime candidates for positions in the country's teacher training colleges; and to conduct research into matters of high priority related to the operation of educational programs of all types. The Second Five Year Plan of Pakistan suggested the following areas for research emphasis: critical observation and analysis of the learning process; controlled experimentation in instructional methods; study of the sequential relationship between the primary, secondary and higher educational stages; research into methods of measuring results within the educational process; study of careers and performance in relation to educational attainment; and investigations in educational theory, child growth and development, supply and quality of textbooks and instructional aids, curriculum, educational administration and management, and the economics of education.

An AID-financed contract between the government and Colorado State College (now the University of Northern Colorado) provided for master's and doctoral level training in Colorado for IER faculty, the assignment of successive teams of American educational specialists to work in Dacca, and the construction of the IER building and a laboratory school on the University of Dacca campus.

The contract was phased out in 1969 with the departure of the final group of U.S. advisors. Dr. Md. Selim became the Institute's first Bengali Director. At that time, a full graduate training program was established, with course-work available in primary and secondary education, curriculum, manual arts, science teaching, psychology, arts and crafts, educational research, and school administration. A fully equipped library was in place and a curriculum materials laboratory and Research Services Center were functioning. The latter began in 1967, with a two-year descriptive study of the country's educational system. The report* of this

*"The 1969 Education Research Project", IER, May 1970.

project, financed under a special AID Grant, was published in May, 1970, and is the only comprehensive source of information about the formal education system in this country.

To date, IER has turned out several thousand graduates, and has completed a number of smaller research projects, including a study of the salary structure and incentives of agricultural graduates. It is currently working on a survey of the curriculum of the Teacher Training Colleges, and has staff engaged in a population education research project being financed by the Ford Foundation.

IER has remained dedicated to the cause of improving the quality of education through training and research, and thereby has played a very important role in assessing the needs and constraints of the country's educational programs. Its faculty and staff have been called upon to participate in a wide range of assignments as consultants and committee/ commission members. Dr. Selim serves on the Non-Formal Education Commission as Executive Secretary; Dr. Mazharul Haque, Chairman of the Department of Education Research, was appointed to the recent National Commission on Education; and a number of IER's staff form the core of a new foundation recently organized with Government support to undertake a series of studies into non-formal education possibilities. Dr. Manzoor Ahmed, former Chairman of the Department of Educational Administration, is currently Assistant to the Director of the International Council for Educational Development, Philip Coombs. Ahmed was joint author with Coombs of the World Bank financed study of non-formal education, Attacking Rural Poverty.

Illustration

VII-1

Enrollment and Retention
(By Classes, I-X)

<u>Class</u>	<u>I</u>	<u>II</u>	<u>III</u>	<u>IV</u>	<u>V</u>	<u>VI</u>	<u>VII</u>	<u>VIII</u>	<u>IX</u>	<u>X</u>
<u>Enrollment(thousands)</u>										
1949-50	1134	490	329	237	86	79	55	48	42	36
1954-55	1106	542	349	250	179	94	73	64	51	48
1958-59	1528	618	400	298	232	114	93	77	62	53
59-60	1664	658	406	308	235	121	97	84	66	63
60-61	1744	688	434	320	247	125	102	88	70	50
61-62	1719	736	468	342	258	137	110	92	71	60
62-63	1762	801	488	377	297	166	133	109	93	66
63-64	1742	829	568	462	353	183	154	133	103	80
64-65	1724	853	608	534	437	201	163	149	117	99
65-66	1632	902	707	565	474	237	197	173	131	107
66-67	1749	977	783	606	488	252	209	181	150	124
67-68	1979	1151	856	679	529	288	250	230	163	133
68-69	1973	1115	896	723	583	321	268	236	199	173
69-70	2015	1209	916	755	601	334	281	263	211	190
<u>Retention per 100 students starting in class I</u>										
1958-59	100	-	-	-	-	-	-	-	-	-
59-60	100	43.1	-	-	-	-	-	-	-	-
	100	41.4	28.4	-	-	-	-	-	-	-
61-62	100	42.2	28.1	22.4	-	-	-	-	-	-
62-63	100	46.6	28.0	22.7	19.4	-	-	-	-	-
63-64	100	47.0	33.0	26.5	21.2	12.0	-	-	-	-
64-65	100	49.0	34.5	31.1	25.1	12.1	10.7	-	-	-
65-66	100	52.3	40.6	32.1	27.6	13.6	11.8	11.3	-	-
66-67	100	59.9	45.4	34.8	27.7	14.7	12.0	10.9	9.8	-
67-68	100	65.8	52.5	39.4	30.4	16.3	14.5	13.2	9.8	8.7
68-69	100	56.3	51.2	44.3	33.8	18.4	15.2	13.7	11.4	10.4
69-70	100	61.3	46.3	43.2	36.8	19.4	16.1	14.9	12.3	10.9
Average Retention (1967-70)		61	50	42	34	18	15	14	11	10

Source:

Directorate of Public Instruction, The East Pakistan Education Week, Feb. 1970.
East Pakistan National Commission on Manpower and Education, Selected Studies.
"Statistical Information on Education in East Pakistan".
Institute of Education and Research, University of Dacca, Technical Study No. 5

Illustration

VII-2

Development of Formal Education in Bangladesh

	<u>1949/50</u>	<u>1954/55</u>	<u>1959/60</u>	<u>1964/65</u>	<u>1969/70</u>	<u>1972/73</u>
<u>Primary (Class I-V)</u>						
Enrollment (million)	2.58	2.73	3.27	4.16	5.50	6.00
Percent Increase over previous period		5.8	19.8	27.2	32.2	9.0
Age Group 6-10 in population (million)	6.0	6.9	7.8	9.6	10.4	10.8
Percentage of age group in schools	43	40	42	43	50	56
<u>Secondary (Class VI-X)</u>						
Enrollment (million)	0.26	0.33	0.43	0.73	1.28	1.70
Percent increase over previous period	-	26.9	30.3	69.8	75.3	32.8
Age Group 11-15 in population (million)	4.6	5.1	5.6	7.7	9.4	9.8
Percentage of age group in schools	6	6	8	9	15	17
<u>Higher Secondary/Intermediate (Class XI-XII)</u>						
Enrollment (thousand)	17.9	17.4	34.2	75.5	200.0	230.0
Percent increase over previous period	-	-	96.5	120.7	164.9	15.0
<u>College</u>						
Enrollment (thousand)	3.4	4.8	16.5	27.0	65.0	98.0
Percent increase over previous period	-	41.2	243.7	63.6	140.7	50.8
<u>University</u>						
Enrollment (thousand)	2.9	2.9	3.8	6.6	13.9	23.7
Percent increase over previous period	-	-	31.0	73.7	110.6	70.5

Source: Ministry of Education

USAID Financed Participants by Field and Level of Training

From 1951 to 1970 over 1500 participants from East Pakistan received training under USAID financed participant training programs. Many of these participants have moved into senior positions in the Bangladesh Government. The impact of participant training activities is difficult to measure. However, many USAID financed participants who held senior positions during the Pakistan Era still hold influential positions in the Bangladesh Government. Below is a recapitulation of USAID financed participants by field and level of training from 1951 to 1974.

	Totals		Diploma/Degree Received					Totals
	1951 - 1971		1951 - 1971					1972 - 1974
	Percent		B	M	D	ND	TNC	
Agriculture	37%	556	8	177	69	287	15	20
Health	19%	279	8	54	4	206	7	21
Education	18%	277	17	103	47	104	6	23
Administration	11%	166	1	27	1	135	2	46
Public Safety	5%	73	-	-	-	73	-	0
Labor	4%	63	-	-	-	63	-	3
Communication (HWY, Railway & Telecom)	3%	38	-	-	-	33	5	29
Planning	2%	27	-	5	2	20	-	1
Industry	1%	21	-	-	-	21	-	15
	100%	1500	34	366	123	942	35	158*

Recapitulation - Level of Training for 1951 - 1971

B	=	Bachelor	34	2%
M	=	Master	366	25%
D	=	Doctor	123	8%
ND	=	Non-Degree	942	63%
TNC	=	Training Not Completed	35	2%
			1500	100%

*68 participants of this total are still in training and will return by 1975. All 158 participants are/were in short-term training programs, except for 23 participants at the American University of Beirut who will receive master degrees.

Chapter 8

Conclusions

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Chapter 8

Conclusions

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Chapter 8

Conclusions

Summary - Prospects for Achieving Plan Objectives

It is apparent from this analysis that we do not provide a clear path to the fulfillment of Five Year Plan goals. In fact, what data are available from the 1960's strongly suggest that agricultural production growth rates and those of employment creation will not be sufficient in coming years to maintain present per capita income levels. However, because the former East Pakistan was not mobilized to expand agricultural production rapidly, past rates may not be a good indication of what an independent Bangladesh can do on its own. Emphasis on increased production, utilizing the nation's annual three crop seasons, could have results in a matter of months. The many rural institutions, most notably the Integrated Rural Development and Rural Works Programs, give encouragement that efforts to stabilize the distribution of income and assets can be achieved with existing institutions.

Except for a large natural gas reserve, and the possibility of oil, the prospects for national self-reliance are not encouraging. Even assuming the availability and rapid exploitation of these resources, they have to be translated into improved individual welfare which would take some time. For the short-term, it would appear to us that resource savings payoffs - as

a step towards national self-reliance - can be achieved through the reduction of the still-large agricultural input subsidies and the careful control of foreign exchange and domestic budgets.

We believe that a focus on broad rural participation does provide efficient solutions to broad Plan goals even if the prospects for their fulfillment are not encouraging at the present time. Nonetheless the model as developed in Chapter IV is useful for several reasons. Its emphasis on the new seeds technology, Rural Works, and market town growth, helps to focus development resources on efficient methods for the improvement of agricultural production and individual welfare in a rural context. It is an answer to the least cost solution of Plan objectives. In this regard our priorities support the Plan in many, but certainly not all sectors. Other Plan sectors that, in our view, do not strengthen the model, are set aside.

Our theoretical analysis provides a unity of purpose for what would otherwise appear to be unrelated sector programs. This unity makes it easier to determine sector priorities and to focus on important projects within these sectors. The model places the population-resource dilemma in a context that clearly indicates the burden of an unchecked population growth rate. The model highlights the importance of rural stability vis-a-vis the growing problem of landlessness. It also helps to focus the country's education resources on alternative aspirations, on rural development, and provides practical reasons for the economic participation of women. In short, the model opens the door for the rural population for their own improved welfare as an end in itself, and as the means to promote efficiently achieved economic growth for all sectors. This strategy highlights the point that resources and institutions are not the crucial bottlenecks; the problem is one of perspective and political resolve.

We also need to reiterate the model's assumptions. Increased agricultural production is the key, and this is predicated upon the seed-fertilizer revolution. Massive amounts of modern inputs are implied in this growth process. And it is upon this growth that improved income distribution and possibly the small family norm depend. Employment can be expanded by some change of policies and institutions, but the ability to

create millions of new jobs required in coming years depend singularly upon massive amounts of inputs and the institutional promotion of broad participation. In addition, the macroeconomic conditions mentioned in Appendix A are central to this model, particularly the supply of non-agricultural wage goods, and the removal of all capital subsidies.

Sector and Project Priorities

The utility of this model is to be judged by its ability to focus the reader's attention on a broad development perspective, and upon both the inter-sector allocations of resources and intra-sector priorities.

With reference to a broad developmental perspective, the Model argues for a strategy which accords primacy to the two major developmental needs of Agriculture, Irrigation, and Rural Institutions as comprised in one package and Population Planning in the other. Education and Training are accorded importance in so far as they contribute to the objectives of these two packages. All other sectors are viewed as being complementary, but secondary to these primary sectors.

How does this conform to or disagree with the contents of the First Five Year Plan and the FY 75 Annual Development Plan? The answer is that both great similarities and variances are apparent.

- The Five Year and FY 75 Annual Development Plans

One-third of all development expenditures in FY 75 is programmed for the package represented by Agriculture, Rural Institutions and Irrigation. (33% of the ADP or approximately \$220 million per year. The reader is referred to Tables II-2 and 3 on pages 10 and 11 respectively.) It is difficult to say with precision, but this proportion and absolute amount represent, in our view, an underinvestment in terms of the Model's emphasis. Population Planning is allocated \$11 million or 1.6% of the ADP; this is at great variance with the Model's

priorities. Both of these sector allocations need to be increased; and particular stress is needed on project studies to further expand absorptive capacity. Education and Training as a sector is given a bit more allocative emphasis in the Annual Plan; \$47 million or 9% of the development budget. Nutrition, as a distinguishable project entity, received \$115,000 in FY 75 but this by itself underestimates nutritional activity in other sectors.

Those sectors which are not stressed in the Model receive as a group over half of the total development budget. These include, in order, Transportation and Communications; Power, Natural Resources, and Technology; and Industries. With the possible exception of Transportation, the Model's emphasis would indicate that such a large allocation (approximately \$310 million per year) should probably be reconsidered in terms of favoring further Plan allocations to Agriculture, Irrigation, and Rural Institutions. Similarly, while the absorptive capacity of Population Planning may be very limited at this point, some rate of escalation should be targeted now so that by the time of the Second Plan in 1978 the sector might effectively use at least 3% to 5% of the total Plan allocation of that period.

Judgements on the internal allocations of each sector of the Five Year and FY 75 Annual Development Plans are also useful. The intrasector allocations within Agriculture, show a high degree of congruence between Government Plans and the Model. The reader is referred to Table V-10 on pages 80 and 81, and the FY 75 ADP Abstract. In both cases, emphasis upon inputs, notably fertilizer, pesticides, and seeds is very high. Similarly, both the Plans and the Model stress agricultural research. However, in this case, a very high percentage of the Annual Plan's funds are allocated for fisheries, forestry and livestock, and not the major crops.

Because of the lack of emphasis upon institutional and physical infrastructure during the days of East Pakistan, absorptive capacity is a constraint. As a consequence, the Government must try to remedy such deficiencies as rapidly as possible. A start in this direction is reflected in the 1974/75 ADP where development budgets for institutional growth in agriculture have been increased by over 100% for such matters as (representative sample only):

- Reorganization and expansion of the Agricultural Economics and Statistics Division;
- Establishment of a Soil Survey Interpretation Division;
- Expansion of the Agriculture Information Service to the Sub-Divisional level; and the
- Establishment of the Bangladesh Agriculture Development Corporation Staff Training Institute.

These and other activities, many of them essential to future growth, are important investments in priority processes which the Model supports.

Not quite the same degree of general congruity exists between the Irrigation and Rural Institution sectors of the Annual Plan and the Model. Where the latter places much emphasis on assistance for low-lift and shallow well irrigation, the ADP continues to emphasize major works. The ADP, as does the Model, places a great deal of stress on Rural Works as a part of rural institutional development, but the Works allocation is a fraction of what is needed simply to maintain the present rural infrastructure.

Only in the area of Nutrition is there a wide discrepancy between what is contemplated by the Plan and signalled in the Model. Virtually no resources are allocated within the Annual Plan for this subject. However, emphasis upon crop diversification, agricultural research and fisheries development in the Annual Plan may have some effect on malnutrition, particularly if guided by a national nutrition strategy and disseminated by agricultural extension and information channels.

The differences are marked between the Model and the Plans concerning intra-sector allocations for Population Control. The Model points towards a need for widespread supplies of contraceptives, expanded family planning and para-medical field workers, greater employment opportunities for women, and a rural bias in favor of family planning services. The Plan allocates funds which are low per capita, thoroughly intermixed with health and preventive disease programs, and which provide for only the limited build-up of training capacities as well as

village-level delivery systems. Instead, resources are turned towards infrastructure development and institutionalization of broadened population planning education capacities in largely urban-serving Ministries and Departments such as Labor and Information. As a consequence of this emphasis, which is useful in itself, there is insufficient support for the Plan's own rural delivery system targets for Population control. These differences in population control strategies may signal important policy implications for AID.

Education, both in the Five Year Plan and in the Model, is to be redirected by innovative programs. Both non-formal education and the reorientation of the formal system are to provide the rural population greater access to a relevant education. But the ADP for FY 75 shifts ground on this point. It allocates resources largely to colleges, universities, and technical schools in much the same pattern as in pre-Independence Plans. This alteration may represent only delays in planning non-formal and rural-oriented formal school systems. We are hopeful that the FY 75 budget allocations within the Education sector do not represent a major policy shift.

- USAID Projects

In light of the foregoing comparison, it is worthwhile to evaluate the allocation of AID's assistance to Bangladesh. We recognize that AID, as a single donor, need not address all resource requirements of the economy, and therefore this comparison is made only in the context of our Model's priorities. (The reader is referred to Chapter 5 pages 98-100, Chapter 6 pages 135-136 and Chapter 7 pages 169-174 for a review of our specific activity.)

The first two years of our assistance were devoted to helping the Government with economic recovery. Of the total \$423 million allocated in FY 72 and 73 for this task, much of it was spent in the areas of agriculture, nutrition, population, health and education. Sixty-nine million dollars, or 16% of this total, were spent on agricultural project; \$156 million, or 37%, on food imports; and \$20.8 million, or 5%, on nutritional food commodities. Two million dollars were committed for population control. Six point four million dollars, or 1.4%, were spent on health programs; and \$14.1 million, or 3.3% of the total, on education.

In FY 74 we committed a total of \$86.0 million, including \$27.0 million, or 31%, for agricultural inputs (\$25.0 million) and project studies and training. Fifty point four million dollars, or 58%, were committed for food commodity imports. We committed \$7.7 million, or 9%, for population control. No funds were allocated for education and \$.7 million was committed for the Cholera Research Laboratory.

In FY 75 we continue to focus our resources on few activities. Of a total estimated allocation level of \$210 million, \$60 million or a third will be for a fertilizer plant and fertilizer imports. A fourth of the total will be for food commodity imports; and \$.2 million, for a rural education pilot project. The remaining funds are for project studies and training to improve the economy's absorptive capacity.

Looking ahead to FY 76 we plan a similar level of assistance for fertilizer imports. We will continue to assist population control, project development studies and the rural education pilot project. We may diversify our assistance to include the Rural Works Program, small-scale irrigation, polder agriculture development, and nutrition. While the exact amounts have to remain illustrative they do signal the importance we attach to these particular areas. Funds are also earmarked for the erection of the third unit of the Karnaphuli hydroelectric power station using equipment purchased under a prewar AID loan.

In summary, it is clear that much of our assistance is for food commodity imports, which for reasons discussed in Chapters 4 and 5, is only weakly related to our developmental priorities. This assistance which has totaled \$260 million, or 42%, of all of our assistance (FY 72-75), has tended, in our view, to delay rather than speed the Government's focus on agricultural production and procurement. The lack of data on production in the country, on smuggling, and on food consumption needs by regional and income group, make a realistic Government analysis of food requirements very difficult. Short of such an analysis, or the willingness to focus our food assistance on those who need it, we suggest the direct tying of our food assistance to a possible three-part formula. We could tie our annual commitment level to: (1) domestic rice procurement for the ration system; (2) to free distribution for the very poor

and those in flood or drought affected areas; and (3) to Rural Works expenditures. The continued import of food for the urban oriented ration system delays the day when the Government will focus on its singlemost important asset - rice production. Such a formula - however defined and weighted - would provide a link between food aid and increased domestic production.

On the production side our fertilizer assistance is well placed. The same is true of our agricultural research funds in support of the Government's research initiatives. We have increased the level of technical assistance to improve sector planning, and project design in recognition of the fact that we are contributing to processes, not just projects. In addition, our grant assistance to voluntary agencies contributes to the rural experimentation of technical and institutional innovations.

The weakest aspect of our assistance would appear to be that involving rural institutions. While the increased supply of agricultural inputs does help to improve farmer participation in the new seeds revolution, we have not been able to satisfactorily design projects with the Government for the improved functioning and expansion of the IRDP, and other rural programs. Aside from some rehabilitation funding, we have not committed new funds in this area. A Rural Works grant-loan program may be our next major involvement in rural institutions.

Our nutritional assistance has been traditional - specific foods for special targets - a high cost solution. The Nutritional Research and Planning Grant in FY 76 should open project possibilities.

The population program continues to be limited by the lack of the Government's commitment to population control, which inhibits developing effective absorptive capacity for new and existing population programs. Better coordination of donor population advice and project activity is definitely needed. In addition, we need to explore new approaches with the Government to emphasize the vital nature of the population problem.

Education will require much larger amounts of money but it will take time to develop the absorptive capacity of an altered perspective. Our education project proposals are designed to do this.

We have also included a previously financed AID Project - the third unit of the Marnaphuli Power Station - which remained incomplete at Independence. While the developmental justification for this project is weak in light of our model, its completion will speed negotiations with the Government on pre-Independence project debts.

One key area that has not received any AID attention, as urged by our model, is that of market town growth. The project studies grants, and AID technical assistance from Washington offer ways to start this process. Other areas also need to be explored: examples include rural electrification, regional transportation and low-cost education technologies (e.g. rural radio).

Looking beyond these years, our assistance will continue to focus upon the priorities detailed here, but with due regard for project evaluation and studies.

Planning and Implementation

This paper has had to consider several kinds of project implementation problems facing this country. These problems have not been so severe as to prevent emphasis upon our Model's priority areas, although the consideration of some projects, that would otherwise receive high priority, has been delayed. The following paragraphs review implementation processes and problems that warrant special mention.

It is notable that most of the projects emphasized in our three sector chapters are predicated upon effective rural delivery systems, and these systems appear to have much in common. Family planning services, agricultural inputs and information, nutrition and health, and non-formal education, all depend on functioning delivery systems. In fact, what we seem to have is a de facto three-tiered system that at the village level is predicated upon the farmers' willingness to act in their own self-interest and to meet rural delivery systems half-way if the materials and information are relevant and take cognizance of their situation. The top tier - the traditional

institutions of health, education, agriculture, nutrition, and training - has not been meeting the needs of the rural population; and if these institutions were to be replicated throughout the whole country, the cost could be prohibitive. In recognition of this cost and past ineffectiveness, the village health worker, the model farmer, and other non-formal education channels are being developed as a middle level-second tier link between the formal centralized system at the top and the rural population at the bottom. We mention these rural delivery systems to highlight our view of the villager and to emphasize the importance of a working delivery system in the bureaucratic sense. We recognize that at the present time these systems confront difficulties and to that extent our Model's assumptions are weakened.

Functioning delivery systems are only one requirement for successful project implementation. Project identification and design delays within the Government continue to act as a brake upon the flow of assistance funds. This often causes the Government to de facto alter its short-term developmental priorities. Inadequate commodity supplies also affect project priorities. In the case of Rural Works programming, for example, severe shortages of cement and building materials are said to adversely affect expenditure rates. Funds, then, are often diverted elsewhere and are lost to the planned programs.

Much of what our model emphasizes are long-term processes. Budget cycles, among other things, tend to force us into an annual and therefore an artificial perspective on these processes. Often detailed investigations are needed to set special sector, and then project priorities. In addition, while the ultimate objective of many of these projects is rural welfare, the first steps - and years - often have to be devoted to capital-intensive projects with little or no outreach element. Examples include agricultural research institutions, the formulation of nutrition and education materials and channels.

In fact we often need to take the project design process a step back. So much of the present development thinking is so new that proceeding directly into project design often ignores the data and analyses needed for establishing a properly informed starting point. For example, although many rural strategies (including the one reflected in this model) depend implicitly on private sector multiplier effects for the expansion of

secondary and tertiary sources of production and employment, little empirical policy work is taking place on this subject. Other needed studies for Bangladesh include those mentioned in various chapters and in Appendix B. There is an immediate need for sub-sector and specific problem-oriented studies on a number of subjects related to the model's assumptions and components. (We feel our assistance recognizes this necessity, and provides the Government flexibility in this regard.) Despite these many research needs, broad sector studies had best be delayed or minimized because the present economic situation in Bangladesh is so uncertain.

Project evaluation has not received adequate emphasis to date because of time spent on the implementation side. Nevertheless priority projects only rate their priority provided they make an impact. While we have a general impression of our projects' effectiveness, and do design evaluation into all projects, we need to systematically evaluate all ongoing and future projects.

We admitted at the beginning of this paper that our thoughts have not benefited from discussions with the model's principal participants - the people of rural Bangladesh. While we have individually benefited from many field trips we have yet to systematically discuss concepts and implementation processes with say, members of cooperatives, Works Program laborers, or rural women. Such a rural perspective however makes it immensely difficult to ignore the very challenging situations what will come to light. Such exposure is the acid test for the idealist. But more constructively, such a view from the bottom will make it apparent that broad policy and expenditure changes are needed if broad rural participation is to be a reality.

Second Thoughts

We cannot rest easily with this basic strategy. It's technical feasibility depends upon political commitment. We are reminded of the following quote from Gunnar Myrdal: "Efforts to create machinery for self government, cooperation and popular participation without changing the basic social and economic structure are essentially attempts to bypass the equity issue." (Asian Drama, 1968, p. 883) This concern by Myrdal

may be interpreted as an **admonition** to governments to ensure that access to the means of production is dealt with directly, i.e. by a sweeping land reform. The rural institutions discussed in this paper should encourage but certainly do not force popular participation. Secondly, it is clear that a laissez faire reliance upon the private market also **by-passes** the equity issue as Myrdal has defined it. It is too early to judge whether the same criticism can be levelled against a broad activist strategy as spelled out in this paper.

Myrdal's observation is correct - but begs the question of how to achieve improved equity short of revolution. Some of our specific recommendations are directed towards enlarged participation: cooperative membership regulations; cooperative farming; smaller scale technologies; and information flows to improve at least the chance of broader participation. The complete removal of capital subsidies would also give labor a much better chance at productive employment. Considerable political and policy scope still remains, to speed implementation of an agrarian strategy. The institutions now in place are basically as good as any, under present political circumstances, for initiating the cumulative process of building new vested interests and broadening old ones.

We do recognize however that the population growth rate may remain sufficiently high that no quantitative expansion of existing strategies - no flood of resources - will meet this development challenge despite the optimism evidenced for such a strategy in this paper. We are concerned about two forces at work that are acting to compound the task ahead.

First: A trend about which the model says little is that of urban migration. To the extent that laborers drift to the cities, the urban situation will become more politically volatile. It becomes much more expensive to create employment and to provide minimum social service for these laborers. This migration should be controlled. There is some evidence that while the urban poor do not consider city life to be permanent, they know that the cities have food. There is also evidence that even new landless aspire to remain agricultural laborers. These twin factors suggest that the supply of rural food and employment can be increased to stem urban migration. Without positive

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actions there is every likelihood that the cities will become giant explosive slums.

Second: Double the present population will be striving for an existence on a similar resource base in 25 years. This doubling depends very directly upon whether it can be financed. Because the prospects for a high agricultural production rate are not encouraging, and maldistribution remains a serious problem, the scale of food imports and their targeting will become a prime determinant of the net population growth rate in the future. Because of this grim perspective it is all the more important that population control and agriculture production be given great emphasis.

The last year has made it clear that the urban-industrial economy is very dependent upon outside resources. This small world stagnates in direct proportion to a foreign exchange constraint. And remedial, even reform steps, are then immediately taken to ease the foreign exchange situation. We note this to highlight the point that rural institutions of land and production do not stagnate or die in the same way when people are pushed off their land and into starvation conditions. While remedial steps may be taken, reforms are not. As a consequence, a considerable amount of Government attention is paid to 5% of the population, and not to the rest.

Development Policies

Development is a difficult process for it implies that the present course is not adequate; that changes have to be made. Political systems, values, and actions are integral to development processes. In so far as donor assistance contributes to them, foreign prescriptions and projects are most often left to the staff-project level for design and implementation. It needs to be recognized that many project goals and assumptions cannot be met in a project context. Agricultural credit rates cannot be left to a cooperative project, nor can appropriate agricultural technologies be left to research institutions. What this model signals will be meaningless if the Government is unable or unwilling to make the necessary policy adjustments. In short no form of foreign assistance is a substitute for the

Government's own initiatives.

Recognizing this, but also the Government's reliance upon continued foreign assistance, we need to ask ourselves what are the kinds of relationships that can be developed to ensure the effective use of foreign assistance.

There has been a tendency since Independence to invest in "safe" projects, i.e. those projects with minimal policy and implementation problems because the Government has already made needed changes. (Fertilizer is a good but isolated example.) Another perspective has been that of planning large amounts of funds in specific areas in order to encourage phased policy or program changes. (Rural Works and irrigation have been considered in this light.) Under present conditions in Bangladesh neither of these approaches open broad areas for project assistance, as they do not in themselves establish the basis for a broad-based agricultural strategy.

As an alternative, and if per capita income growth is to have any prospect for improvement, we feel frequent dialogues are needed between the Government and donors to encourage an altered perspective of the development process. Consortium meetings offer one such avenue as do problem and sector oriented meetings with relevant staffs in Dacca. Development assistance in Bangladesh will not be contributing to the new development rhetoric until this bridge is built, or the Government steals the initiative.

It must be recognized that the poor countries of the 1950's and 1960's that are now well on the road to development have achieved this growth, not by the happy coincidence of foreign aid perspectives and funds, but because the recipients made up their minds to get after the task.

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Appendix A

Macro-Industrial Sector Policies

This paper would not be complete without a discussion of macro-economic and industrial sector policies, for though our model focuses on agriculture, it has a direct bearing on other sectors of the economy as well.

It is noteworthy that Rostow's fifth and last growth stage, that of high ~~mass~~ consumption, is by implication a first or second stage in the agricultural model described here. Mass consumption, generated by a public strategy of crop production and employment creation, and so income, is the engine of growth. The causal linkage is first public investment in new seeds, other agricultural inputs and institutions, then privately generated income and consumption growth from increased crop production, which in turn generate foreign exchange earnings (and savings in the form of rice) and nonfood investment opportunities. From these flow nonfarm employment growth and the domestic production of wage goods. Unlike many general development models, this one does not emphasize the savings rate as the key to growth. (It is assumed in this model that consumer demand is a better test of public and private investment opportunities than simply the supply of financial resources.) The contrary industrial - savings rate growth model is epitomized by the following quote: "It is well to recognize that economic growth is a brutal, sordid process. There are no short cuts to it. The essence of it lies in making the laborer produce more than he is allowed to consume for his immediate needs, and to invest and reinvest the surplus thus obtained The underdeveloped countries must consciously accept a philosophy of growth and shelve for the distant future all ideas of equitable distribution and welfare state. It should be recognized that these are luxuries which only developed countries can afford Historically, growth has never been 'balanced'. There have always been leading and lagging sectors as well as regions." (K. Haq. The Strategy of Economic Planning: A Case Study of Pakistan, Oxford, Karachi, 1963, p. 30) While we agree that growth may be a brutal process, and that there are certainly no shortcuts, the burden of this growth need not fall so directly on laborers in the sense described here. The fallacy of the above quote is that it does not recognize

that broad-based access to productive activities (self-generated welfare) is a substitute for the "welfare state", i.e. publically supplied benefits from the central government.

An important requirement of this model is the adequate supply of wage goods at stable prices for rural and urban laborers. Import and domestic manufacturing policies should ensure that the private sector supplies a positive list of basic consumer items and that the Government strives to work itself out of the ration business. The absolute cost of such goods, and of agricultural inputs, should be determined by international prices, and domestic labor-intensive manufacturing techniques. From these prices, the terms of trade between agriculture and industry can be determined. It is suggested that the use of the industrial sector for selected wage goods production take precedence over that of other industrial strategies, except that of jute.

Inherent in such a model is the rationalization of domestic prices to reflect relative scarcities. Policy and institutional reforms at a program-project level (such as those designed to promote the growth of market towns and rural credit) that attempt to correct or supplant prevailing market prices and conditions will be very costly or inefficient or most likely both. The price question is always a macro consideration and therefore cannot really be altered in a project context - a fact often missed or ignored by program designers. Be that as it may, the continued use of a consumer goods ration system (price control), subsidies on capital goods (encouraged and financed in part by donors), and an artificial exchange rate structure (which subsidizes urban-industrial imports), all have the effect of seriously inhibiting the search for less costly solutions to the goals of increased production, employment growth and national self-reliance. While the Government recognizes that several policy and institutional initiatives must occur concurrently with devaluation, these must not become an excuse for not addressing this fundamental issue. As an example of one such needed measure, the present public sector pricing policy of cost plus ten percent subsidizes a multitude of inefficiencies and should be replaced by decentralized profit and decision centers.

The manufacturing sector, both public and private, can play a greater role in employment creation by the use of multiple shifts, in redesign of plant layouts to make more efficient use of existing capital equipment, and in packaging. Some capital-intensive technologically rigid plants may have more potential

for efficient labor creation than is recognized, e.g. in the areas of raw materials processing and final product handling. More often than not, import regulations discourage multishifts because licenses are not granted for sufficient raw materials.

Export diversification in the areas of value-added goods may be difficult, as private interests may view labor to be both undisciplined and expensive. The experience in Mexico suggests that these problems can be overcome and that a low cost effective labor force can be created nonetheless. The implementation of a wage good policy can be the beginning of export diversification but these exports are not likely to be a "leading edge" giving rise to general economic growth, because the base is very small and capital-intensive. Delaying the emphasis on export expansion into new productions will better ensure that they are produced with more efficient labor intensive methods. Given the country's almost complete dependence on the import of raw materials, capital, and consumer goods, analyses are needed to determine what finished goods can best be manufactured domestically and which should continue to be imported. For the longer term foreign exchange and aid allocations for imports should emphasize raw materials and not capital or consumer goods.

The successful promotion of jute exports may require the re-integration of a now artificially divided industry between the Jute Industries Corp. and the Jute Export Corp. The aus-jute problem, like that of devaluation, is very complex and without shortcuts. Past studies on jute appear to concentrate on the trade perspective at the expense of the micro, or vice versa, and few recognize the jute farmer as being an economic man, i.e. to be analyzed in a term of trade context. Much of the jute solution lies in getting rice yields up and stopping jute smuggling.

The Government should increase its efforts to mobilize private resources for development; agriculture can contribute to the considerable cost of its modernization. Although rural taxes may be politically and administratively infeasible, subsidies can be reduced and even turned negative. We also have the impression that there is a great deal of private cash around; it may be considerably more efficient to encourage its investment in inter alia market town growth than to struggle futilely to tax it. As this model stresses, consumption and private investment, not just public savings, are engines of growth. The entrance of commercial banks into agricultural credit is excellent and should be rapidly expanded to help create an integrated rural capital market.

Savings interest rates - a macro decision - need to be dramatically increased.

The present rate of urbanization and its consequences are probably unappreciated. The Government's industrial, urban, housing and communications and transportation policies need to be differentiated according to an urban-rural criteria. The Government already provides some incentive for the decentralization of industrial firms. Urbanization policies and fiscal measures can be used to encourage the small family norm, and the channeling of private money into social overheads.

Proximity to India requires a careful analysis of Bangladesh's comparative advantage - principally between raw jute and jute manufactured exports. Of all the bilateral issues that need coordination, water is one area where donor assistance may be very useful.

It has been stated explicitly that this agricultural model provides less costly solutions to Plan objectives. This does not imply that any fewer development resources need be invested in agriculture and industry, but that more production and employment will be in evidence. While the evaluation of the industrial sector in terms of the above mentioned criteria may indicate room for the fruitful reallocation of public resources within industry, and possibly to agriculture, it is clear that Bangladesh's resource requirements are limited only by her capacity to use them efficiently.

Appendix B

Action Research Topics

Given the importance of the rural economy to the development of Bangladesh it is imperative that policies and projects be predicated upon quantitative analyses.

Population Control - Research is needed to estimate the perceived and actual costs and benefits of additional children for both farmers and landless laborers. This research is desired to develop inter alia mechanisms to equate the perceived (low) private cost of additional children to their actual (high) social costs. Research is needed to translate some of the successful incentive schemes from their essentially pilot context to larger population. Alternatively, under the severe conditions in Bangladesh, the family's capacity to support additional members may be breaking down which may be forcing an acceleration of migration to slums and into landlessness. We know nothing at all about people under conditions of extreme poverty and their willingness to accept the small family norm. Factors affecting the capacity of villages to "support" a doubling of the population need to be better understood.

Market Town Growth - To stem urban migration, create rural employment and investment opportunities (of a less capital intensive nature), and to promote industrial and urban decentralization, a great deal of policy-oriented field research needs to be done on the factors that stimulate (and retard) market town growth.

Cropping Systems - Realizing the potential for employment creation in agriculture cannot be guided until employment, irrigation and mechanization issues are analysed in the context of an annual - not single - cropping system. Only in this context can the benefits of production, and employment increases, and the cost of timeliness and power provided by mechanization be estimated.

Development of Rural Vested Interests to Speed Development Processes - In conjunction with production oriented agricultural strategies, more work is needed to speed the inclusion of presently

disenfranchised rural poor. Research is needed to guide a broadening of the rural elite's self-interest, and to ensure by fiat, institutional design, and technology, that the poor can participate in modernization processes. With pressures for foodgrain production increasing around the world (and rightly so) and with a growing frustration with small farmer programs, development practitioners must guard against the growing tendency to rely solely on the "trickle down" processes of the private market to spread the benefits of the new seeds technology.

Appendix C

Placing Relief Efforts in a Development Context

Each monsoon the rivers of Bangladesh swell many times over and flood about 30% of the country to a depth of from one to twenty feet. This is a normal occurrence. Cropping patterns and rural life have long since adapted themselves to this flooding. A bad flood (termed "unwanted water" in Bengali) occurs when larger than normal amounts of water flood the land to greater than normal depths or when the water rises faster or earlier, and falls later or slower than is usual. Higher or earlier than normal flooding can drown the standing aus crop, early flood waters and rains can cause boro grain stocks to rot and make sun drying of the remaining boro harvest impossible, and the delayed drop of flood levels can prevent the seed broadcasting and transplanting of the next aman. In addition to flooding, crop diseases and droughts can also occur, often in the same year. In winter months, Bangladesh is often frequented by the high winds and saline water of cyclonic storms. Grain losses which normally may average 5% can easily consume half a crop. It is small comfort to note that this grim picture very seldom characterizes the entire country at any one time.

In addition to natural causes, institutional and man-made factors also compound these problems. Population growth inter alia appears to be forcing more and more people from their land into landlessness and into urban slums; this frequently means movement to lower more flood prone land. The ration system is designed to serve the food needs of groups other than the poor. As a consequence the system is not set up to handle free food distribution in rural areas when and where it is needed. The poor's dependence upon the ration system or at least upon free food has probably grown because market prices have jumped, and there are fewer public sources of employment in the countryside. Real Rural Works and Test Relief allocations, as with other developmental allocations, have been drastically reduced.

The world community has responded generously to past disasters. The Government feels compelled, understandably, to maintain this record of response. Much publicity has been given to relief aid received from abroad, and the continuation of massive international responses to disasters in Bangladesh is widely assumed.

Over the years this has led to a relief mentality that encourages villagers to view all supplies from the public sector as gratuitous. This attitude has severely compounded the problem of institution building particularly where crop loan recovery is expected. In the same way that the promises and provision of relief have effected the expectations of villages, the Government also tends to look to others before turning to its own resources to help the destitute. More recently the occurrence of natural disasters has provided the Government with a vehicle for unrealistic appeals for general budget support. This has at times impaired the good relations between the Government and donors. More importantly, frequent disasters are severely curtailing the Government's ability to get on with the business of development. Relief threatens to become a full time activity involving several Ministries.

One problem donors face in a relief situation is that of information. Detailed field data are available from various Government Ministries on crop conditions and losses, rain and flood levels and on the ration food system. While the analysis of all these factors needs improvement, these data do provide the opportunity for the Government to establish credibility with the donor community when the occasion arises and to target appropriate relief responses. The frequency of natural disasters and the magnitude of the population-resources burden suggest that the Government cannot continue to interrupt or suspend its normal functions each time a disaster occurs. Development programs in themselves meet some of the needs of the destitute for they provide productive activity. This is not to say that disasters should be ignored but that the Government needs to pay closer attention to the specific targeting of humanitarian relief and to developmental responses where possible as determined on a case by case basis. There have been heartening signs in FY 75 that the Government and donors are prepared to tackle relief situations with development assistance.

The Government clearly should assist those who have been hit hardest by natural disasters. This generally is a far smaller group of people and more narrowly defined area than is at first reported. Donor humanitarian food assistance should be wheat and in food forms that are readily edible. Rice should not be provided because of its higher cost and lower nutritional value than wheat, and because it is most likely to be allocated through the ration supply to the urban middle class. Efforts at individual housing are very costly and do not contribute to the restoration of the recipient's productivity or income; these funds can be better spent in other ways. Feeding programs should stress maternal well-being and not directly that of infants for reasons that have been suggested in the population chapter of this paper.

Much of what the Government is already doing for agricultural development should be stepped up and targeted for disaster affected areas. Agricultural input distribution is an excellent approach but one that must be fully cognizant of local condition and timing. Also of importance is the targeting of public funds for Test Relief and Rural Works in order that the poor can purchase foodgrain.

Looking to the future it is clear that Bangladesh has to accommodate itself to the natural calamities that plague this region. River control will take decades and must be predicated upon close international co-operation. In the interim, there is considerable scope for mobilizing the nation to increase production and employment. The Rural Works Program, small scale irrigation schemes, and HYV (including deep water varieties), in expanded and integrated form, can tolerate if not shape the ever changing land and water resources.

Appendix D

The Utilization of Taka Proceeds

During the 1960s, United States P.L. 480, Title I food sales generated rupees which were programmed to specific agricultural development activities, particularly the Rural Works Program. USAID audited these rupee generations and negotiated their allocation for specific development projects. Other donors' assistance, in the form of food or general imports, also generated rupee revenues when sold domestically.

After Independence, it was decided by the UN and USAID among others to "untie" these funds in the sense of removing the previously established audit and programming requirements. Donor audits were no longer required and programming was very general. Although the UNROB foodgrain operation has since been discontinued, grant and concessional imports continue to create funds and their use remains programmed for Rural Works and for "..... other activities promoting longer term development." (see UN-BDG Letter of Understanding dated March 20, 1972) The first U. S. food shipment to Bangladesh was through UNROD and its Transfer Authorization (2627 - dated March 1, 1972) states that the proceeds can be ".... used for such relief and rehabilitation purposes as UNROD may determine." No mention was made of financial or program auditing. A second T. A. (2601 - dated June 1, 1972) signed with the Government states that the sale proceeds ".... shall be used for relief and rehabilitation projects mutually agreed to by the BDG and USAID." USG audit authority is noted in the Authorization but this may have since been amended. Mutual programming discussions are not required nor have they taken place; Bangladesh Government allocations for agriculture in their Annual Plans are deemed to be an adequate substitute. The Plans' allocations for agriculture have been larger than the proceed generations. All domestically sold grant and concessional imports generate taka revenues which become de facto general revenue support (unless tied to specific programs). Foodgrain imports alone generated \$150 million in CY 72 and possibly as much as \$300 to \$400 million in total since Independence.

The benefits of this untying to Bangladesh are clear. A large amount of resources are generated without the strings of foreign audit or developmental programming. This practice provides

de facto budget support to the Government for maintenance expenditures at a time when it is needed, and when donor auditing and programming could cause delays.

A case can be made however that the "untying" of these resources may not have been so beneficial. These foodgrain proceeds resources are thought by donors to have been allocated for the Works Program as before Independence. But because they are not being audited by donors, the Ministry of Rural Development, Local Government and Co-operatives has no leverage with which to disburse or even claim these resources. This Ministry does not continue to have the strength of bilateral project agreements to back its development programs. Public resource shortfalls have presumably forced the Finance Ministry to review all budgets for unexpended funds; because of disbursement problems caused by political, economic and bureaucratic factors unexpended proceeds have become reallocated for establishment expenses.

The budgetary reallocation of these proceeds is certain; their impact on rural development is a matter of conjuncture, but worthy of discussion nonetheless. There are at least two effects to consider:

- The economic cost of untying in terms of development foregone may be high. The removal of the leverage provided by tying may be a contributing factor that explains why disbursements for Rural Works and Test Relief have been so drastically reduced. Works Program actuals have dropped from Rs 200 million in FY 71, to Tk 80 million in FY 74 - in real terms this reduction is far greater. Not only is rural infrastructure not being built and staff not being trained, but rural incomes generated by public funds have probably fallen as well with consequences now obvious for rural well-being. Very high prices and lack of income put adequate daily grain consumption levels out of the reach of the poor.

- A second impact of this untying may be more political - and is certainly more hypothetical - in character. The 1960s saw a rather impressive and largely successful effort at political decentralization of development institutions to the thana level. Possibly because of the untying of these proceeds resources and undoubtedly other factors, which helped finance this decentralization process in the 1960s, the previous system of developmental patronage is now being curtailed. Rural politicians and bureaucrats now have far fewer resources at their disposal which may mean that they are less able to be responsible, and responsive, to their constituencies. This lack of resources, and certainly other factors, may have contributed to the marked reversal of the previous

decentralization trend. If rural institutions had had resources to disburse during the last three years, the present rural political and developmental scene might have been different. Because agricultural development depends heavily upon functioning rural delivery systems, and because a broadening of the development franchise depends upon a decentralized system, this reverse trend may have severe consequences for the future ability of development programs to reach a rapidly expanding population.

We could debate endlessly about the degree of cause and effect in the above speculative analysis. We do not recommend a retying of taka proceeds but we certainly do suggest a reexamination of the development potential of these massive generations of local currency and the problem of financing rural institution building.