

Country Development  
Strategy Statement

**FY 91-95**

**BANGLADESH**

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February 19, 1990

**USAID/DHAKA**



Agency for International Development  
Washington, D.C. 20523

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**COUNTRY DEVELOPMENT STRATEGY STATEMENT**  
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Bangladesh: Country Development Strategy Statement

FY 91-95

Executive Summary

Bangladesh is one of the poorest of the least developed countries. It is also a young nation in which democratic institutions are not yet firmly established. Nevertheless, Bangladesh has achieved some very significant accomplishments over the last 19 years. GNP growth has averaged 3.25%, poverty incidence has declined from 80% to 52%, there has been significant improvement in almost all socio-economic indicators, new export industries have been established and Bangladesh has aggressively privatized over 1,000 industries nationalized in the pre and post liberation period. Bangladesh has also responded to frequent natural disasters with resilience and fortitude and has established an exceptionally effective food security system.

The principal constraints on economic growth in Bangladesh are: a slow agricultural growth rate; a high population to natural resource ratio; a low level of private savings and investment; widespread poverty and hunger; an unacceptably high child mortality rate; a weak educational system and low levels of literacy; a degraded and dwindling natural resource base; and the isolation of women from the mainstream of economic growth. These are the key problems of Bangladesh's two major resources - its land and people.

Considerable opportunities exist for providing US assistance which will produce significant results. In agriculture, a combination of positive price policy, input privatization and deregulation of groundwater has in the last year unleashed a major expansion of agricultural production and shown the way for a sustained expansion of agricultural output over the medium term. In the area of family planning, Bangladeshi couples actively desire to significantly limit

family size, but are frustrated by generally inadequate service delivery. In the private sector, the reforms now just starting on the banking sector and the strong interest by Government in private investment and deregulation are opening up major opportunities for expansion of private sector growth and strengthening of market forces. With the agricultural sector only able to provide new jobs for about one third of the million or more annual new entrants into the labor market, the private non-farm sector has to take on an expanded role in output and employment.

Likewise, there are opportunities for doing more to involve women in the mainstream of economic activity, to improve natural resource management, to decrease donor dependency and improve sustainability. There are other sectors which are important but which, because of AIDs own resource constraints and the availability of resources from other donors, are not taken up in this strategy. Education and urban development are among these.

The goal of USAIDs assistance to Bangladesh is to promote increased economic growth that contributes to the alleviation of poverty and places Bangladesh on a longer term sustainable growth path. The leading edge of the strategy is to achieve a sustainable balance between population and the country's productive resources. Progress in foodgrain production, fertility reduction, and private sector expansion will contribute to short term gains of GDP growth of 5% per annum (2.5% per capita) and lay the basis for longer term economic transformation over the next two decades.

USAID's strategy in agriculture is to increase foodgrain production through open market price policies, input privatization, improved resource management, technology development and transfer and rural infrastructure. In fertility reduction and child survival, USAID will replicate proven successful service delivery systems to underserved areas through increased outreach to rural

clients via satellite clinics, through promotion of greater efficiency and coordination between the private sector, NGOs and Government in program management and through increased cost effectiveness. For the expansion of the private sector, support will be given to encourage development of competitive markets. Improved financial markets, better policy formulation and implementation, and deregulation of the private sector are some of the principal interventions. The Mission will also foster improved disaster management through support for preparedness and mitigation. The entire strategy will be supported and implemented by three cross cutting themes: sustainability, involvement of women and open markets/open societies.

The results that are expected from this strategy are significant. They include: a 36% increase in foodgrain yields; a 22% increase in the contraceptive prevalence rate and a doubling of urban immunization rates for children; and a 39% expansion of the share of private sector investment in GDP. These results are achievable and measurable.

The new resources that are needed to implement this strategy over the next five years are \$280.5 million in development assistance resources and \$300 million of new Title III food aid and \$100 million of Title II. This is a continuation of current food aid levels and a 17% decline in DA resources as compared to the last CDSS. We propose to use Title III local currency to stretch DA resources and to support our objectives in agriculture and family planning. We will, wherever possible, divest to other donors the high cost of commodity procurement. The Mission will need to maintain a quality staff at its present level, adequately supported with OE funds, in order to implement this ambitious strategy in an accountable manner.

## LIST OF ACRONYMS

AAFLI	Asian-American Free Labor Institute
ADB	Asian Development Bank
AID	Agency for International Development
ANE	Asia, Near East
BADC	Bangladesh Agricultural Development Corporation
BASC	Business Advisory Service Council
BAU	Bangladesh Agricultural University
BDG	Bangladesh Government
CDSS	Country Development Strategy Statement
CIDA	Canadian International Development Assistance
CPR	Contraceptive Prevalence Rate
CPS	Contraceptive Prevalence Survey
CY	Calendar Year
DA	Development Assistance
DANIDA	Danish International Development Agency
DMT	Development Management Training
DOE	Department of Environment
EEC	European Economic Community
EEPA	Enterprise Employment Policy Analysis
ENRA	Environmental and Natural Resource Assessment
EPI	Expanded Program of Immunization
FAO	Food and Agricultural Organization
FPMU	Food Policy Monitoring Unit
FRG	Federal Republic of Germany
FSC	Financial Sector Credit
FSN	Foreign Service National
FY	Fiscal Year
GDP	Gross Domestic Product
GNP	Gross National Product
ICDDR,B	International Center Diarrhoeal Disease Research, Bangladesh
IDA	International Development Assistance
IEC	Information, Education and Communication
IESC	International Executive Service Corporation
IFDC	International Fertilizer Development Corporation
IMF	International Monetary Fund
IPP	Industrial Promotion Project
IRRI	International Rice Research Institute
ISNAR	Institute for the Support of National Agriculture Research System
ISPAN	Irrigation Support Project for Asia Near East
IUCN	International Union for the Conservation of Nature
MCH/FP	Maternal Child Health/Family Planning
MIDAS	Micro Industries Development Assistance Society
MIS	Management Information System
NDI	National Democratic Institute
NGO	Non-Government Office
NIP	New Industrial Policy
ODA	Overseas Development Assistance
OE	Operating Expense
ORS	Oral Rehydration Solution

PRIP	Private Rural Initiatives Project
PSC	Personal Services Contract
RIP	Revised Industrial Policy
SIDA	Swedish International Development Agency
SME	Small Medium Enterprises
SMP	Social Marketing Program
SPARRSO	Space Research and Remote Sensing Organization
TA	Technical Assistance
TCN	Third Country National
TRP	Technical Resources Project
USDH	United States Direct Hire
UNDP	United Nations Development Program
US	United States
USAID	United States Agency for International Development
USIS	United States Information Service
USPSC	United States Personal Service Contract
WFP	World Food Program
WID	Women in Development

## I. BANGLADESH: THE DEVELOPMENT CONTEXT

Bangladesh is an extremely poor least developed country with most of the structural and institutional weaknesses that underdevelopment implies. Any consideration of the prospects for future development in Bangladesh must focus on the severe imbalance between the country's population and its limited resource base. This imbalance is most acutely seen in the unending need to expand domestic food production to feed an ever growing population and the continuous struggle to create sufficient new jobs for the accelerating number of new entrants into the labor force. Population and resources are at the heart of poverty and growth in Bangladesh. In this section, we will provide a brief overview of the context in which U.S. development assistance is being supplied to Bangladesh and of the not inconsiderable successes that Bangladesh has had in initiating the long process of economic transformation.

U.S. Interests and Objectives. U.S. interests in Bangladesh are primarily developmental and humanitarian. Our development interest is in achieving rapid economic growth and the transformation of Bangladesh into a more diversified, resilient and internationally competitive economy. Our humanitarian interest is in the alleviation and elimination of poverty, hunger and suffering (including provision of relief and rehabilitation assistance in times of natural disasters), the promotion of child survival, and the opening of economic and political choice to people that currently have little or none. U.S. private as well as public assistance to Bangladesh has contributed substantially to humanitarian as well as developmental objectives in Bangladesh.

U.S. economic assistance has been provided to Bangladesh since 1972 (and previously to East Pakistan) and is the principal means of supporting these interrelated objectives. The current annual level of assistance is some \$55 million in DA (down from \$80 million in 1980) and \$80 million in food aid.

Political Development. Bangladesh, was born in 1971 in a savage war of national liberation. The conflict destroyed the country's industrial and commercial infrastructure, devastated many of its financial and other assets, and killed three million of its citizens -- including many of the intellectuals, managers and technicians. Although the infant nation evoked the world's sympathy, Bangladesh was quickly dubbed a "basket case." In 1974, widespread famine struck as a result of the destruction of purchasing power combined with a major flood, one of the frequent natural disasters to which Bangladesh is prone. Poor communications and transportation infrastructure also hindered national political integration.

In both 1975 and 1981, political leaders were assassinated in military coups d'etat. The early political development of Bangladesh has thus been described as a "Legacy of Blood." The current president of Bangladesh, retired Lt. General Hussain Muhammad Ershad, seized power in a bloodless coup in 1982 and proclaimed martial law. Ershad held local elections in 1985, and parliamentary and presidential polls in 1986. He lifted martial law in late 1986, after his election as president. Once political activity was again permitted, questions about the legitimacy of the Ershad government and the fairness of the elections conducted under the regime inspired several major opposition parties to challenge Ershad's right to govern.

Bangladesh is still in the infancy of its political development and democratic institutions are rudimentary. The country had been under military or single party rule for much of its short history. When elections are held, ballot rigging, strong arm tactics and confrontational politics have been employed by opposition and ruling parties alike. Nevertheless, during the eight years of the Ershad government, Bangladesh has had its longest period of political continuity and relative stability. The Bush Administration has endorsed the democracy initiative

of Congressman Solarz (as has the House of Representatives) which links the provision of U.S. developmental assistance to progress in achieving a credible electoral process, an effective legislative, a free press, an independent judiciary, and responsive local government. The United States Mission, under the leadership of the Ambassador, vigorously conveys this message to all levels of Bangladesh society and energetically encourages the development of democratic institutions leading to an open, pluralistic society. U.S. assistance is used to foster democratic values and the choice and voice of the citizens of Bangladesh. Local government elections are scheduled for March 1990 and the Government of Bangladesh has declared its intent to make these freer, fairer and less violent than in the past.

Poverty. Per capita income is a mere \$180 per annum--about 1% of the per capita income of the United States. The quality of life for almost all Bangladeshis is extremely low. For example, average life expectancy is only 51 years and Bangladesh is one of the few countries in the world in which female life expectancy is lower than that for males. A full 68% of the population is functionally landless i.e. have landholdings of less than one acre (at current levels of technology it takes 2.5 acres to feed an average family). Population density of over 1,700 persons per square mile is among the highest in the world. The Bangladesh population of 112 million is growing at 2.5% per annum, at which rate it will double every 28 years. Severe or moderate malnutrition affects 61% of children and 41% of the population under fifteen. Infant mortality is 118 per thousand and almost a quarter of Bangladeshi children do not survive to their fifth birthday. Literacy is only 29% (18% for women). Access to clean water, adequate medical care and quality primary education are beyond the reach of most Bangladeshis. Urban slums, shanty towns and substandard housing are commonplace. Urban populations are growing at 9% per annum creating major problems of urban

governance and service delivery. Only 18% of Dhaka households are connected to central sewage and only 26% have access to tap water. The face of poverty in Bangladesh is universal.

Social and Economic Institutions. Bangladesh is predominantly Muslim (85%) and has recently declared Islam as the state religion. Although there are important ethnic and religious minorities (notably in the Chittagong Hill Tracts), communalism is not as severe as in some other parts of the subcontinent. Bangladesh is a remarkably homogeneous state linguistically, ethnically and culturally. It has a strong sense of national identity if not yet of national destiny. Bangladesh is still a predominantly rural society (agriculture accounts for 46% of GDP) and some 80% of the population lives in rural areas. Competition for resources is ferocious and patron client relations between more affluent and politically powerful individuals and tenant farmers or the landless are universal. Informal markets for credit and labor are established and maintained through these relationships, frequently reenforced by kinship ties. The powerlessness of the poor leaves them vulnerable to exploitation and physical violence. Legal rights are weakly enforced and corruption, as in many developing countries, is endemic. The rights of women are weak and abandonment and domestic violence are distressingly high.

Economic institutions are also fragile. The banking system has been severely weakened by nationalization and political interference. Market information is rudimentary and grades and standards absent or unenforced (adulteration of products is rampant). Infrastructure development is still in its early stages—roads, bridges and rural electrification are needed throughout Bangladesh (about 30% of Bangladesh's villages are electrified). Despite significant progress towards privatization in the last few years, large portions of the textile, jute and other heavy industries are still in the public sector. Tax

administration is poor. The bureaucracy is bloated and inefficient. In sum, Bangladesh is still a least developed country.

Disasters. Bangladesh is one of the most disaster prone countries in the world. Principal hazards are monsoon flooding, cyclones (and tidal waves), drought and earthquakes. These natural disasters cause increasing damage and suffering as population expands. By the use of satellite technology, major improvements have been made in cyclone early warning systems and efforts are underway to improve flood preparedness and disaster management. Plans have also been laid to improve flood control by selected use of embankments. Nevertheless, natural hazards will continue to be part of the environment in Bangladesh and will cause economic loss by damage to infrastructure and economic assets and increased risk for investment. Disasters are particularly damaging to the poor who not only suffer the most, but are frequently forced to sell their few remaining possessions in order to survive.

Achievements. Despite the considerable difficulties that Bangladesh faces, the achievements of the first 19 years since independence have been remarkable. There has been significant and measurable progress in almost all socio-economic indicators. For example, the rate of population growth has declined from 3.2% to 2.5%. Infant mortality has declined from 130 to 118 in the last decade and the incidence of poverty has been reduced from 80% to 52%. Famines are virtually a thing of the past due to an efficient private sector supported by a functioning public sector food security system. The food gap has been contained and a record foodgrain harvest achieved in 1989. Growth of GDP in the 1980s has been a respectable 3.7% and Bangladesh has been characterized as a world "champion performer" in the area of divestiture and privatization (over 1,000 state owned enterprises have been divested to the private sector). The private sector has been the leading edge of Bangladesh's explosive growth over the last five years as

a major exporter of garments. Bangladesh has not incurred an onerous foreign debt burden and has also been widely praised for its implementation during the 1980s of IMF conditionality on structural adjustment and monetary and fiscal reforms.

As a consequence of this performance, Bangladesh has been able to attract substantial aid flows from a wide array of donors. Aid to Bangladesh is now about \$2 billion per year. The World Bank and ADB have been the dominant multilaterals and Japan is now the leading bilateral (displacing the United States in 1986). Donor coordination in Bangladesh is exceptionally close. There is widespread agreement between donors (and with Government) on the challenges that Bangladesh faces and on the basic policies and programs required for Bangladesh's future economic growth.

Against this background, the prospects for future sustainable economic growth in Bangladesh are extremely positive. The constraints are not insignificant (see Section II), but the opportunities for making a significant difference to the rate and pace of economic growth in Bangladesh are real and substantial (see Section III). This CDSS provides the framework for an effective, efficient and results oriented contribution by the United States to that process.

## II. THE CONSTRAINTS TO GROWTH

Bangladesh Economic Performance in the 80s. Bangladesh's economic performance in the 1980s was above average in terms of growth, economic management and overall policy reform as compared to other least developed countries. This substantial achievement occurred despite three major flood disasters during the decade.

Nevertheless, like all least developed economies, the Bangladesh economy is structurally weak. The economy remains substantially dependent on jute for employment and export earnings; the tax system is highly inelastic and dependent on import-related taxes; the public enterprise sector is still excessively large and inefficient; and the financial system is weak and underdeveloped. The performance of the economy over the last decade is summarized below.

GDP growth slowed in the 1980s relative to the 1970s with real GDP dropping from an average annual rate of 5.8% between Bangladesh FY73 and FY80 (the Bangladesh fiscal year runs from July 1 to June 30) to an average annual rate of 3.7% in the 1980s. Record floods in 1987 and 1988 and a depressed jute market caused GDP growth to fall to 1.8% in FY88 and 2.5% in FY89. GDP growth is expected to rebound in FY90 with a rate in excess of 6% on the strength of agricultural and nontraditional export performance. Due to an average population growth rate of 2.5%, this translates into an average annual per capita income growth of only 1.2% during the 1980s, with negative income growth in FYs 83, 88 and 89. Indices of real monetary wages and of wage goods have trended upward during the 1980s, showing increases of between 20 and 50% over the decade.

Stagnation in domestic investment since 1983 has helped keep growth below its potential level. Both public and private investment were punctuated by a marked upsurge of investment in 1981 followed by a leveling out from 1983 onward. The

ratio of private investment to GDP has hovered around 6% since 1981 while public investment has declined from near 10% of GDP in 1981 to 6% in 1988. The decline in public sector investment is partially explained by the BDG's choice to reduce public investment as a means to stay within budgetary expenditure targets under the IMF structural adjustment program while accommodating increases in recurrent cost expenditures. It is also the result of poor revenue mobilization and growth of recurrent expenditures. Public investment through the annual development plan has also suffered from a lack of clear investment criteria. The stagnation in private investment means that incremental private earnings that could have been invested are instead being directed into other economic activities such as trading, smuggling, and capital flight. Such behavior reflects a rational economic response by entrepreneurs to an inconsistent and cumbersome policy environment and an unpredictable regulatory environment, but use of capital for these purposes does not appreciably increase productivity or add to output.

Domestic savings have been insignificant, running less than 2% of GDP through most of the 1980s in a slight upward trend. Real interest rates on bank deposits have tended to be moderately negative for short term deposits and moderately positive for long term deposits. Depending on the method of calculation, lending rates have been near zero to substantially negative. Major reforms in the financial system were introduced in 1989 and early 1990 to address interest rate policies and related financial market problems.

Over the course of the 1980s, Bangladesh performed reasonably well in controlling budget deficits, money supply growth and inflation. During the decade, government budget deficits declined from 10% of GDP early in the decade to between 7-8% in the latter 1980s. In FY84 and 85 total domestic credit and the money supply (M2) expanded substantially faster than growth in real output.

Inflation, which had been averaging about 11% in the early 1980s, accelerated to 15%. In response to the resulting economic instability, the BDG adopted and implemented a medium-term adjustment program in FY87 supported by a three-year IMF Structural Adjustment Facility. As a consequence, the average annual rate of domestic credit expansion declined to 4% in the latter half of the 1980s, growth in M2 fell from 42% per annum in FY84 to 16% in FY89 and the inflation rate declined to a manageable 10%. Some signs have emerged of some reheating of the economy in late 1989 and early 1990.

Bangladesh has had a chronic shortfall in its rate of economic assistance utilization. The total aid opening pipeline more than doubled from \$2.4 billion in FY81 to \$5.2 billion in FY88. The buildup of the pipeline is almost entirely attributable to slow disbursement of project aid. Food and commodity aid disbursements have tended to match commitments, but project commitments were roughly double disbursements in most of the early 1980s. Despite a fall in project commitments to the approximate level of disbursements in the latter half of the 1980s, the project pipeline rose to \$4.4 billion by FY88, equivalent to five years of project disbursements at the FY88 rate. One reason for the slow rate of aid utilization is the lack of local currency for counterpart funds for donor-assisted development projects. This "taka gap," as stated earlier, reflects poor performance in government revenue collection and rapid growth of current expenditures (propelled by public sector wage increases and subsidies to state owned industries). These two shortcomings are the manifestations of economic policy and structural weaknesses. Carry over from the stabilization program of the mid-80s makes the BDG reluctant to borrow from the banking system for development investment purposes in spite of the large leverage factor.

There is much less of a problem for AID project disbursements because AID can program counterpart funds generated by the PL 480 program. For AID, the project pipeline is on the order of 2.5 years.

Historically, Bangladesh has had a structurally weak balance of payments because of the high degree of dependence on a few products for foreign exchange. The situation started to improve for the first time in the 1980s. In FY81 exports were concentrated in four product categories constituting 82% of total exports; the share of these four categories decreased to 46% by FY88. The current account deficit declined from 10% of GDP in 1981 to average less than 6% for FY87 through FY89. Foreign exchange reserves tripled from a level of 1.2 months (\$251 million) in FY81 to 4.8 months by late 1988, but fell to 1.8 months by the end of 1989. The annual current account deficits were more than offset by donor aid disbursements with balance of payments surpluses occurring in five of the six years between FY83 and FY88. Bangladesh's external public debt was \$8.96 billion in FY88, equivalent to 47% of GDP. Although not inconsequential, the debt servicing burden, as measured by the ratio of interest and amortization payments to exports, has been manageable. Bangladesh's debt service ratio during the decade has averaged 23% and is projected to decline to a level of 21% through FY94.

Bangladesh has exhibited a fairly typical sectoral growth pattern with services and industry growing at faster rates than agriculture. Real agricultural GDP averaged a disappointing 1.6% per annum between FY82 and FY88; the services sector grew at 4.8% and industry expanded at an average annual rate of 4.7%. The more interesting story is found in developments at the subsector level. Average annual growth in exports through the 1980s exceeded GDP growth by about 4 percentage points in spite of the fact that for traditional exports average annual growth was less than one percent; non traditional exports--ready

made garments, urea fertilizer, shrimp and leather products--averaged 30% growth per annum. Garment exports have been the prime mover. Starting from a virtually zero base in 1980, Bangladesh is now the fifth largest exporter of ready-made garments to the U.S. market, moving up from 28th position three years ago. Gross foreign exchange earnings from garments exceeded earnings of jute/jute goods in FY88 and continue to pull away.

In summary, the economic report card is a mixed one. Some of the major factors that have influenced economic growth in Bangladesh over the last decade have been: a favorable macro-policy environment combined with a strong commitment to privatization; low factor productivity, but high production potential in agriculture; a cumbersome and inconsistent regulatory environment and poor policy execution at the sectoral level which frustrates private sector initiative and incentive to invest; poor utilization rates of donor project aid; and a narrow export base, but with strong performance in nontraditional exports. In the remainder of this section, we give a closer look at some of the more important sectoral constraints on economic growth.

Agriculture: Stagnant Production and Low Productivity Bangladesh is still a predominantly rural economy. Agriculture accounts for 46% of GDP and employs about 58% of the labor force. Rice and jute production from Bengal's fertile deltaic plains have been the backbone of the economy and the principal contributor to the historic wealth of this part of the subcontinent. However, with rapid acceleration of population growth during the second half of this century, the agricultural sector has had increasing difficulty in meeting domestic food demand. Since the birth of Bangladesh, there has been a structural food deficit of 2-3 million metric tons per annum and, despite repeated Government declarations of the importance of achieving food self-sufficiency, Bangladesh has remained heavily dependent on food imports.

The farm economy is dominated by numerous small (and scattered) farm holdings and by an alarming increase in the functionally landless. The average size of farm in Bangladesh is 1.7 acre and the cultivated land per capita is .02 acres. Yields are low and have grown only 1% a year during the 1980s. At current levels of productivity and family size, it requires a farm of about 2.5 acres for family food self-sufficiency. The rural landless and near-landless now account for 68% of the rural population. The competition for natural resources in Bangladesh is ferocious and the pressure of population on the environment creates great concern about the sustainability of current agricultural resource use systems and for Bangladesh's dwindling forest and biological resources.

During the 1970s agricultural growth in Bangladesh was a relatively respectable 3.4% per annum, all the more remarkable in light of the widespread devastation of the War of Liberation and the statist policies of the Mujib period. However, in the 1980s agricultural growth declined to 2.25% per annum or less than the population growth rate of 2.5%, resulting in an increase in the level of food aid imports. The reasons for this decline in the agricultural growth rate have been extensively analyzed by the recent UNDP Agricultural Sector Review and USAID's own Agricultural Sector Assessment. Excessive regulation of water use, restrictions on the role of the private sector (especially in input delivery) and poor research technology delivery were identified as major causes of agricultural stagnation. When a number of the constraints were addressed in 1989, there was a dramatic surge in production and record rice crops were achieved. This creates confidence that continued pursuit of relaxation of these constraints will yield sizeable productivity gains in the future.

The Pressure of Population Growth Bangladesh's population density is equivalent to locating the entire world's population in the United States.

Today's population of 112 million people is putting an intolerable pressure on Bangladesh's natural resources. And the population is continuing to grow at a rate of 2.5% per year.

As a result of population growth, the positive GDP growth in the 1980s of 3.7% per annum became a minuscule 1.2% on a per capita basis. Population growth also siphons off scarce investment and management resources to cope with ever expanding numbers of claimants on needed social services (such as more schools and hospitals) and chokes off equally needed quantitative improvements in them. Unfortunately population growth simply cannot be dramatically slowed in Bangladesh in the near term. The challenge is to bring down total fertility as rapidly as possible and to avert the nightmare scenario of a population of 690 million people by the twenty-second century (rather than the 330 million which would result if a fully successful family planning program is implemented). The social, economic and environmental consequences of the pressure of a near seven fold increase in the number of people living in Bangladesh is almost impossible to comprehend. Nevertheless, the relentless arithmetic of uncontrolled population growth has to be at the heart of any considered effort to put Bangladesh on to a sustainable growth path. Without a major and successful family planning program, economic growth is simply unattainable.

Poverty and Hunger Poverty in Bangladesh is synonymous with hunger. By convention, the poverty line in Bangladesh is defined as a household income to purchase a basic diet of 2,122 calories per person per day. Based on the latest available World Bank analyses, as of 1986, poverty incidence in Bangladesh is estimated at 51% in rural areas and 56% in urban areas, or 52% nationwide.

The data on poverty in Bangladesh do indicate that some progress in poverty alleviation has occurred over the past decade, with the incidence dropping from over 80% in 1974 to 52% in 1986. The decline is attributable to increased rural

wages (which began rising from 1980/81 after declining in the 1970s), changing of diets to lower cost foods, and the increased efficiency of the Public Food Distribution System, specifically food subsidy targeting. Malnutrition rates fell from almost 78% of the child population in 1975/76 to 64% by the mid-1980s. The considerable success of Bangladesh in avoiding famines in the wake of major floods, droughts and cyclones over the past decade is also testimony to open market policies supported by PL 480 Title III food aid which stabilized prices during crises - vital to the poor who spend 90% of their income on food, primarily on foodgrains.

However, the battle against poverty and hunger is not won. There are still some 59 million Bangladeshis living in poverty. Moreover, as a result of population growth, the access by the poor to food producing resources is dwindling. For example, landlessness and near landlessness (i.e., households owning one acre or less) has increased from just over half the rural population in the mid seventies to over two thirds by the mid-eighties. Also worrisome is the fact that, although average calorie intake in 1986 was about 10% higher than in the post liberation period, there appears to be a decline in protein, fat and micronutrient intake. Surveys also show that approximately 300,000 children are blinded each year due to Vitamin A deficiency and 85% of the entire population suffer from iron deficiency anemia.

Addressing the twin faces of poverty and hunger is amply justified on humanitarian grounds. However, failure to alleviate poverty and hunger will also make growth and universal participation in a productive open economy impossible. Sustaining Bangladesh food security-i.e., the ability of families and the nation at large to command an assured and adequate daily foodgrain supply is one of the major keys to poverty reduction.

Education: The Need for Literacy and Skills Achievement of basic literacy and numeracy remains beyond the reach of most Bangladeshis. While 71% of all children are enrolled in primary school (56% male, 44% female), only 30% complete grade 4. Adult literacy is estimated at 29.2% (39.7% male and 18.0% female). Although literacy has not been a barrier to acceptance of new agricultural technology or of family planning, these low levels of literacy are constants on long term growth and productivity of the economy.

The efficiency of primary education in Bangladesh is extremely low. In addition, while the primary school age-group has increased in size by 38% over the past decade, the number of schools has increased only 10.5% and the number of teachers by 12%. Most of these increases have been the result of non-governmental schools starting or expanding their operations. At the other end of the spectrum, there are serious deficiencies in highly-trained manpower due to the low quality of university and college instruction and constant campus unrest. The higher education system is turning out graduates with technical and managerial skills inadequate to support a growing, more technologically complex economy. There is strong interest in the Government to reform specialized higher education institutions (e.g., agricultural colleges) to address these constraints, and U.S. and other donor experience suggests there are worthwhile opportunities. There may also be broad scope for using informal education mechanisms to make up for deficiencies in the formal system to impart selective training in new technologies to farmers, social service providers and private business.

Although BDG investment in education is one of the fastest growing budget items in the Annual Development Plan, (8% of which is allocated to basic education), Bangladesh still spends less per capita on education than any other country in South Asia. However, the key to addressing the sector's constraints

is more than financial; changes in management of the education system are fundamental to strengthening public education. A World Bank sector review in 1989 cited severe institutional constraints to improving efficiency of the education system. Curriculum development and teacher training were two areas identified as fundamental to improving educational quality and student retention. Realistically, the public education system may not be able to address these problems rapidly enough to meet the demand for primary schooling, meaning that the private sector and NGO schools will be increasingly relied upon to plug the gap.

Natural Resource Degradation 1/ Bangladesh is facing a rapid assault on its scarce and fragile natural resources. Two thirds of the total tree cover has been lost since 1960 and only 6% of the land area remains under forests—down from 20 percent in 1960. The remaining forests are under relentless pressure from an encroaching and expanding population. Poor timber pricing policies, corruption, weak regulation and enforcement are also contributing to this decline. Bangladesh is almost totally dependent on biomass for its household energy. The burning of all available wood, leaves, crop residues and animal dung is polluting the air, reducing soil organic matter and nutrient availability, contributing to desertification in the northwest and accelerating soil erosion in the Chittagong Hill Tracts. Rural households spend ever increasing amounts of time in search for fuel - up to 30 hours per week per household, mainly by women.

Biodiversity is also being threatened. Three species of rhinoceros and two species of deer have become extinct during this century in the unique mangrove

1/ For further details, see Annex 1, Biodiversity and Tropical Forests, and USAID, Environmental and Natural Resource Assessment, (1990)

swamps of the Sundarbans. Indiscriminate conversion of fragile coastal areas to shrimp farming, unchecked industrial and urban pollution, poor regulation and farmer knowledge of pesticides and poorly planned construction of rural roads and flood control embankments are threatening the viability of Bangladesh's prolific freshwater and marine fisheries which provide 80% of the protein consumed by the rural poor. Fish catches have declined by 20% in the last several years. The sustainability of long established rice based monoculture and of the uncontrolled use of groundwater is being questioned and, in this and many other areas, information and institutional capacity to monitor environmental degradation are weak or absent.

The competition for scarce resources in Bangladesh is truly overwhelming as increasing numbers of people, most of them poor, seek to survive on whatever resources can be garnered from a shrinking natural resource base. This is indeed a fundamental constraint on economic growth in Bangladesh which threatens long term sustainability.

High population growth is part of the problem. There is also a need to develop alternative sustainable production systems for the long term in agriculture, fisheries and forestry. Solutions will require not only better utilization of existing resources, but the development of alternative income producing activities which are less dependent on national resources and, utilizing Bangladesh's abundant labor, draws on international markets for expanded inputs and products. The competition for resources will also intensify as incomes grow and Bangladesh moves further up the consumption scale. Although Bangladesh has important alternative energy resources in natural gas and, although still unproven, coal it will need to be able to access, through expanded international trade, other and cheaper resources for much of its expanding consumption of non-energy raw materials.

Isolation of Women The condition of women in Bangladesh, according to the Population Crisis Committee, is the worst in the world. In terms of life expectancy, education, participation in the work force, child survival, economic empowerment and legal protection (against male desertion, divorce and physical abuse) Bangladeshi women have to bear great burdens. There have been some improvements in certain indicators such as mean age at marriage (rising since 1975 by 1.8 years to 19.2 for urban women and by 1.7 years to 17.8 years for rural women), literacy (from 12% in 1970 to 16% in 1985) and female participation in the labor force (up from 5.1% in 1981 to 9.6% in 1985). Nevertheless, numerous studies show that women are most severely affected by poverty and that a growing and disproportionate number of female headed households are found in the ranks of the landless and the truly destitute. The feminization of poverty is occurring in Bangladesh as in so many other parts of the world.

The poor condition of women has its impact on economic growth in many ways: lost productivity from an undertrained and underutilized female work force, high personal and social costs of unavowed pregnancies and early female death, and increased child mortality from isolated and undereducated mothers.

#### SUMMARY

In this section we have highlighted some of the principal constraints to accelerated economic growth in Bangladesh. The principal factors shaping the future of Bangladesh are its two major resources—its people and its land. These are the issues we have chosen to highlight. In developing our response we have to be conscious of other constraints—many of which can be overcome by promoting open markets and open societies—but unless the problems of low agricultural output, population growth, poverty, sustainable resource management and more effective utilization of human capital (both men and women) are addressed, we do not believe that Bangladesh can be successful in seeing through its own structural transformation. In the following section, we examine the opportunities for AID assistance which can achieve useful results directed at these problems.

### III OPPORTUNITIES FOR RESULTS DRIVEN ASSISTANCE TO BANGLADESH

The challenge for the CDSS is to select areas in which AID can make a significant difference to accelerating sustained economic growth. In this section, we identify those priority areas in which AID's relatively modest DA and Food resources can best support market driven development and produce significant and measurable results for Bangladesh. There are many areas which we, sometimes reluctantly, have decided to leave unaddressed or in which we have concluded that the payoffs to AID interventions are insufficient (see Roads not Taken in this section). Following this discussion, we will lay out in Section IV the details of our strategic and interventions and the specific results expected from them.

Agriculture: The Potential for Growth in Foodgrain Production Despite the lackluster performance of the agricultural and foodgrain sectors during the 1980s, there is significant reason to think that sharp increases in agricultural production and foodgrain output are achievable during the CDSS period. The recent UNDP Agricultural Sector Assessment, the World Bank funded Bangladesh Water Development Master Plan and USAID's own Agricultural Assessment confirm that there is considerable excess capacity in the sector over the short and medium term. This is derived from an underutilized groundwater resource which is easily exploitable by the private sector through simple shallow tubewells and low lift pumps. The recent liberalization of the irrigation sector (decontrolled placement of shallow tubewells, deregulation of imports and spare parts) resulted in 60,000 new wells being dug in 1988/9. USAID's recent successes in privatization of the fertilizer sector resulted in an explosion of pent-up demand for fertilizer, a 35% increase in 1989. Most importantly, as a result of USAID's Title III program, a favorable price regime has been put in place. As a consequence of these developments, coupled with favorable weather, there was an unprecedented surge in production in 1989 with record Boro and Aman rice crops.

The success of 1989 shows that, with an appropriate incentive regime, a sustained commitment to deregulation of the private sector agricultural input, production and marketing industries, and with technology in the hands of farmers, foodgrain output can expand dramatically.

Increased foodgrain production will contribute to Bangladesh's overall development by: 1) expanding employment on the farms and in agribusiness industries (inputs, processing, marketing) and, by stabilizing wage rates and dampening inflation thereby increased labor demand in other sectors; 2) increasing food consumption (as a result of stable or declining real prices for food) with particular benefits for poverty alleviation; 3) increasing rural incomes and expanding effective demand for nonagricultural goods and services; and, 4) by protecting Bangladesh from famines induced by natural disasters. In other words, Bangladesh has a major opportunity to realize the benefits of rapid agricultural growth that have been achieved elsewhere on the subcontinent and, thereby, to lay the foundations for future sustained growth of the entire economy.

USAID is an established player and an acknowledged leader by other donors and BDG in the areas of price policy, private sector agribusiness, technology development and rural infrastructure. The challenge for the CDSS will be to combine these with other strategic interventions to ensure the sustained growth of the foodgrain economy. Expansion of foodgrain production is a high priority for the BDG and is being supported by other donors, particularly in the areas of needed, but expensive, infrastructure development (irrigation, rural roads etc).

The Desire for Fertility Reduction and Increased Child Survival It is not overstating the case in Bangladesh to assert that reducing population growth is the sine qua non of sustainable economic development and poverty alleviation. It is encouraging that this priority is recognized by the BDG through its public support for the national family planning program (public, NGO and private) and

that family planning and child survival are priorities for the next Five Year Plan.

Equally encouraging is the documented evidence that the opportunity for making a significant difference in population growth is immediately available. Average desired family size is only 2.9 children whereas average completed fertility is 4.9 children; 55% of couples in their reproductive years already want no more children, and another 22% would like to delay the next birth by two years or more. However, only about 30% of rural women have access to contraception. It is indisputable that there is a huge unmet demand for contraception. By addressing that demand, it is possible to increase the contraceptive prevalence rate (CPR) from its current 33% to over 50% without substantial change in incomes, social values or other socio-economic variables.

Contraceptive use is already high where there is access to quality services, extending to as much as 55% of all eligible couples in urban Dhaka and in some rural areas with more intensive NGO and government service delivery programs. However, service coverage in many rural areas remains poor and it is there that most of the unmet demand for contraception lies. Supply constraints in Bangladesh are formidable. The sheer size of the population to be served makes family planning a major logistical challenge. Added to this is the lack of infrastructure, the physical inaccessibility of many rural areas and cultural barriers (e.g. purdah) which prevent women from travelling to static service centers. Despite all these difficulties, Bangladesh has managed to transform itself in the space of a decade and a half from a country in which family planning was virtually unknown (contraceptive prevalence of 7%) to one where awareness is almost universal and fully a third of all couples practice contraception. In fact, Bangladesh managed to achieve a larger fertility decline (30% in a decade compared to 26% over two decades) in about half the time taken by AID's 20 largest family planning programs worldwide! The challenge is to extend these achievements

to still unserved rural areas and to begin to tackle the difficult issues of increased financial sustainability, cost recovery and cost effectiveness.

A critically related area where major improvements can be made is in child survival. Not only does family planning and associated birth spacing significantly increase child survival, but there is also major opportunity to expand the coverage of immunization against preventable childhood diseases which are major factors in child mortality in Bangladesh. For example, urban immunization rates have been increased in the last five years from nearly zero to 20% and can be doubled over the next five years. In turn, of course, increased child survival reinforces the desire to limit family size.

USAID is a principal donor in the population area and exerts a disproportionate influence in the policy formulation of BDG and other donors by virtue of its sustained and highly regarded presence in country, long established operations research systems and the high quality technical services that we can mobilize. Moreover, USAID provided critical leadership during the 80s in laying the foundation of a major national family planning program. For example, the Ministry of Health and Family Planning, has begun nationwide implementation of a management information delivery service system developed and field tested with USAID assistance. USAID has also helped establish the beginnings of a reliable national logistics system. We have also created one of the world's largest and most successful social marketing programs and developed an extraordinary network of NGOs which deliver a major portion (nearly a quarter) of all family planning services in Bangladesh. USAID's family planning and child survival programs have unequivocally made major contributions to the more than four-fold increase in contraceptive prevalence over the last 15 years.

Expansion of a Competitive Private Sector The private sector is well established in Bangladesh in production, commerce and trade. The recently completed (and AID

assisted) Census of Industries has documented that there are over 1.25 million small scale non-farm, non-household businesses in Bangladesh. Bangladeshis enjoy a reputation as aggressive salesmen, traders and entrepreneurs overseas as well as in Bangladesh.

The record of Bangladesh in undoing the statist policies of the Pakistan and post-Independence period has been remarkable. Over 1000 State-Owned Enterprises have been privatized including 650 industrial enterprises and several Banks. The share of industrial assets owned by the Government fell from 94% in 1975 to about 40% in 1986. The process of privatization started in 1975 and reached its peak in the 1980s as Bangladesh instituted a New Industrial Policy (NIP) in 1982 and a Revised Industrial Policy (RIP) in 1986. The BDG has further ambitious plans to privatize the Bangladesh Telegraph and Telephone Board and transform publicly owned petroleum, fertilizer and natural gas companies into public limited companies (i.e., 49% of share capital sold to the private sector) in addition to the ten such companies already created.

The new industrial policies also introduced substantial progressive liberalization of the trade regime to the benefit of private industry. Tariff structures have been simplified (e.g. the number of tariff rates reduced from 24 to 11) and access by exporters to imported raw materials eased. A Board of Investment was set up in 1988 with representatives from both the private and public sectors in order to streamline approval of private sector investment projects. Since 1988, only 4 strategic goods have been subject to monopoly price controls: fertilizer, sugar, paper and newsprint. As a result of USAID's fertilizer project fertilizer is now in large part deregulated. Promotion of small scale industries has been undertaken under the Bangladesh Small and Cottage Industries Corporation and a variety of policy measures put in place to encourage these industries (e.g. income tax exemption for handicraft exports).

Bangladeshi entrepreneurs have responded aggressively when presented with a stable, predictable regulatory regime. For example, the deregulation of the fertilizer distribution industry has allowed 60,000 new private sector dealers to emerge and, despite protests from the old state monopoly (BADC) that the private sector could "never" produce a businessman that could finance and manage direct lifting from factories in loads of several hundred tons, nearly 200 such dealers have emerged in the last year and the number is still growing!

Likewise, the meteoric expansion of private sector non-traditional exports in such products as garments, shrimp and frog legs was also from a competitive private sector operating in a reasonable policy environment. Private sector garment exports in 1979 were \$0.1 million; in 1988, they were \$434 million, surpassing jute, the traditional export leader. These new industries have also shown that the Bangladesh private sector can compete in open international markets and that Bangladesh can capture the benefits of trade.

The private sector in Bangladesh is not without its problems. Some of the privatized companies have never been returned to profit making status. Credit and financial markets for the private sector are weak. Smuggling across the rather porous borders with India diminishes markets for domestic producers and the standard claim is that Bangladeshi businessmen prefer trading and commerce over longer haul industrial investments—probably where risk and uncertainty (including that from sudden BDG policy changes) is greater and profits lower. Private sector business management needs strengthening. Implementation of public policy on private sector deregulation has also lagged behind policy declaration.

The challenge for Bangladesh in the future is to enable the private sector to expand at a sufficiently rapid rate to absorb new entrants into the labor force. Agriculture has been the traditional principal employer (60% or more) but is only expected to provide employment for one third of the million or more annual new

entrants into the labor force. Current BDG policy commitment, the continuing support of other major lenders to Bangladesh for future private sector policy reform and the successes of the 1980s are ample grounds to think that private sector expansion and its attendant job creation has significant promise for the future.

USAID has nearly a decade of experience in working with the Bangladesh Central Bank and is well positioned to provide support to major financial sector reforms which will return the non-commercial (state owned) banks back to profitability (to the benefit of private sector borrowers) and eventual privatization. We also have close working relations with the Ministry of Industries and the Board of Investment (which have requested USAID assistance in accomplishing deregulation), we are supporting the Dhaka Stock exchanges and have been active in small scale business promotion and development both at the policy level and the individual firm level. We are leaders in the privatization of the fertilizer industry. In short, there is a major opportunity to accelerate the creation of new private sector enterprises and of urgently needed new jobs by promoting competitive markets.

Involving Women The status of women in Bangladesh, described in the previous section, is abysmal and a significant deterrent to long term growth and development. Obviously, an effective and widespread population and child survival program is an indispensable prerequisite to enabling women (in a society of nearly universal marriage) to participate more fully in the economy by gaining control over their own fertility. Our family planning program therefore is on the front lines of supporting greater social and economic involvement of women.

There are encouraging signs that the BDG, with the active support of donors, is willing to take a more aggressive stance on women's participation. A separate Ministry of Womens Affairs has been created and universal free primary education

for rural girls (not boys) has recently been declared. New primary school teachers are being hired with a 60:40 female male split. The BDG has embarked on an ambitious program to employ an additional 10,000 female family planning workers, bringing the total female work force to more than 20,000 in the Government system. In addition, 10,000 women family planning workers are being employed in NGO programs. The explosive growth of female employment in the modern garment industry, although at very low wages, has broken new ground for the future expansion of female participation in economic activity outside the household.

We see significant opportunities to accelerate the integration of women into the economy of Bangladesh. Support for women's entrepreneurial activity, the rights of marginalized women under the law, improved female access to credit, managerial training and support for women's secondary education are some of the current activities in our portfolio. Open market/open society development in Bangladesh and support for the primacy of the private sector can draw women into the mainstream of economic activity to a far greater extent than in the past.

Enhanced Sustainability Sustainability in Bangladesh has significant environmental, financial, managerial and institutional dimensions. All of these represent major challenges for the future and for the overall success of development efforts in Bangladesh.

The conflict between finite natural resources and the demands of a growing population are as acutely posed in Bangladesh as anywhere on the planet. The needs for improved natural resource and environmental sustainability have been identified by our Environmental and Natural Resource Assessment as have a number of actionable suggestions for mitigation (see Annex). The increased awareness in the BDG, among individual Bangladeshis, NGOs and other organizations as well as among other donors - of the critical nature of environmental issues gives some optimism that improvements can be realized. Bangladesh has created a new Ministry

of Environment and Forests and, in the wake of the 1987 and 1988 floods, established a new International Institute for Environmental Studies and Disaster Management. Bangladesh is also well aware that it is very much at risk from rising sea levels as a consequence of global warming. According to one estimate, Bangladesh may have as many as 40 million environmental refugees in the next century.

The importance of environmental issues (e.g. effect on fisheries, aquifer recharge and soil fertility) has also been recognized by BDG as well as by donors in the context of the Flood Control Action Plan. The linkage between reduced fertility and environmental sustainability is also widely recognized. There are also opportunities for environmental policy reform including energy pricing, which could substantially restructure demand for scarce natural resources (e.g., reduce forest and fuelwood use and increase alternative energy resources such as natural gas or coal). Moreover, as economic growth takes place in Bangladesh and there is growth in incomes and in open market trade regimes, new opportunities will emerge for developing a more diversified and environmentally sustainable agricultural production system than the present dominant monocrop rice system.

With regard to financial, managerial and institutional sustainability, Bangladesh currently has an undesirably high level of donor dependency (for example, some 85% of its annual development program is donor financed) and has only just started the long process of structural transformation of the economy that is needed to put it on a fully sustainable growth path. To promote financial sustainability, it will be necessary to raise incomes, transfer service delivery where possible to the private sector and to promote greater efficiency of public sector administration (e.g., tax collection) and service delivery. Public sector administration is out of date, literally suffers from redtape and needs greater decentralization and delegation. Management sustainability, both public and

private, requires institutional development and reform in the formal and informal education sectors and development of domestic in-service training capacity. Priority areas for developing institutional sustainability in Bangladesh are in policy formulation and implementation, technology development and transfer systems and in improving public and private accountability.

The problems of sustainability in Bangladesh are legion and the obstacles to efficient orderly implementation of well thought out policies and programs are endemic and the reason that donors continue to provide expensive technical assistance. An assistance strategy which is to produce results has to take these issues into account. Development of institutional pluralism, support for democratic institutions, promotion of open markets and open societies and acceleration of structural transformation are part of the response. Careful project and program designs which address sustainability issues in those strategic areas in which we provide assistance are also part of the response. Bangladesh is still a young country which has been absorbed by its past and present. Bangladesh has done well in establishing systems of public and budgetary allocations and administration and in encouraging the private sector. Bangladesh has shown itself to be far more sustainable than its early critics ever thought possible.

Open Markets and Open Societies The level of development of democratic institutions in Bangladesh was described in Section I. They are still weak and fragile. Nevertheless, there are major opportunities for broadening and deepening the voice and choice of individuals and organizations in such areas as national and local priority setting, or in consumption and investment (including alternative education) which will improve the accountability and transparency of public institutions. Interventions are frequently in themselves rather modest; collectively however, they can make a major difference in encouraging the growth and development of alternatives in Bangladesh. For example, USAID is currently

providing one third of its entire DA assistance through NGOs. We are also providing support to civic participation, voter rights education, legal aid societies, organizations for the suppression of narcotics, chambers of commerce and manufacturing associations, judiciary training, employment of women, NGO networks, user participation in utilities management, and to efficiency, accountability and transparency in local government. These opportunities can be enhanced and enlarged in the next five years.

In addition, our private sector program is aimed directly at promoting open competitive markets. We see numerous opportunities to deepen government policy commitment and implementation of deregulation which will unfetter the energy of the private sector e.g., in fertilizer and input distribution, in Social Marketing of contraceptives and in private enterprise development, as has been described above.

Roads Not Taken The challenges and opportunities for USAID to make positive contributions to Bangladesh's economic development are numerous. As part of our CDSS preparation, we made a conscious effort to inform ourselves about other sectors other than those in which we have historically worked and to examine the coverage of other key areas by BDG and other donors. For example, we specifically looked in some depth at education, urbanization and natural resources. In this section, we briefly summarized the involvement of other donors and the reasons for largely closing the door on direct support to education and urbanization activities in this CDSS.

Through the local consultative group mechanism, USAID coordinates sectoral emphases for our investments with other bilateral and multilateral donors. We work in parallel with other donors in the area of agricultural research (IDA, ADB, UNDP and CIDA), in rural electrification (IDA, ADB, CIDA, and EEC), agricultural education (Japan), family planning (UNFPA, FRG, CIDA, and IDA), rural roads (WFP),

and water sector development using Title III resources (IDA, ADB, and others). In these areas, we provide primarily grant TA and training and focus on policy dialogue and institutional development issues. We also use our resources to complement and leverage larger policy reform packages of multilateral donors, such as the World Bank's financial sector credit reforms. In several areas, we are actively recruiting other donors (particularly Japan) to take up the burden of some of our increasingly expensive project activities. These include: family planning contraceptive requirements, female secondary scholarships, rural electrification commodities, and fertilizer commercial credit requirements.

There are a number of sectors which because of other donor's comparative advantage and USAID resource and staff constraints we leave to other donors. Education is one of these. Despite the seriousness of the problems we do not believe that we can make a significant difference with the resources available to us. Moreover, IDA is leading the development of a major multi-donor sectoral investment in basic education which should satisfy the need for financial and technical support for the next 4-5 years. Consequently, if somewhat regretfully, we have decided to make no investments in primary and secondary education (apart from ensuring that our highly successful Female Secondary Scholarship pilot program is phased over to the BDG and/or other donors). Our sole foray into formal education will be targeted support to higher agricultural education as part of our private sector/technology emphases in that sector.

In urban development, the UNDP, IDA, ADB and Japan, have major infrastructure programs devoted to urban water and sanitation, roads, and housing. In addition, the World Bank is considering a major municipal development loan to improve planning and financial management capabilities for smaller towns and cities, while at the same time addressing some of the country's major urban infrastructure requirements. AID is supporting small-scale infrastructure and services for

development of rural towns into commercial and business centers through rural roads, bridges, and electrification, and is strengthening urban bases for economic activity and service outreach (i.e., support for immunization programs, small-scale industry, and family planning). We do not propose to develop stand-alone urban development projects. However, UNICEF is conducting a major study on urban development problems (scheduled to be completed in 1991) which may provide options for improving the urban focus of AID activities.

In other major areas, Denmark and IDA are devoting both technical and capital assistance to the water transport sector, and a number of donors, among them ADB, IDA, SIDA, DANIDA, UNDP, ODA, and CIDA, are working in livestock, fisheries, and forestry. Our assessment is that they should remain the primary donors in these areas although USAID interest in flood plain agriculture, farming systems, and environmental management will complement these efforts in some areas.

In short, given the limited future levels of financial resources (about 6.5% of total ODA to Bangladesh) and staff available to us, we must be ruthlessly selective in the use of those resources. We are obliged to seek ways to stretch our dollars and food aid resources by outloading wherever possible high cost inputs while concentrating on lower cost but high quality grant funded activities which complement the large loan volumes of other donors. In this process we will also seek to draw these other donors into supporting our policy and reform agendas.

The Prospects for Sustainable Economic Growth In summary, it is our belief that Bangladesh can reach a sustainable 5% real GDP growth rate over the next ten years. Such growth will no doubt create sizeable strains on the economy. For example, the balance of payments will be difficult to manage in the short run as the demand increases for import of intermediate goods for industrial expansion. Private investment and savings will need to increase and donor aid utilization will have to improve. Exports will need to expand, particularly nontraditional

exports, and new export lines will have to be developed. But with our assistance supporting key areas of agricultural production, population and mortality reduction, and private sector expansion, these strains can be managed, structural changes achieved and the beginning of sustainable growth made a reality.

The key to realizing Bangladesh's full growth potential rests on promoting market driven development through continuing liberalization of the economic policy and regulatory framework and by relying on open market forces and democratic decision-making as the fundamental tenets. This must be complemented by a sustained longer term effort at reducing fertility and managing the country's increasingly strained natural resource base. Our optimism that Bangladesh can meet this challenge is based on the record of substantial economic reform measures that have been implemented since Liberation and genuine interest by BDG officials in continued liberalization; the strong potential for and commitment to family planning; the demonstrated growth ability in export manufacturing and agriculture; strong interest at the highest policy levels in environmental management; and the reasonably large aid flows that can be mobilized by the BDG from other donors. It is within this framework of challenging opportunities that we have formulated our selective and focused strategy for the first half of the 90s and to which we now turn.

#### IV STRATEGY

The goal of AID assistance to Bangladesh is increased and sustained economic growth that contributes to the alleviation of poverty and places Bangladesh on a longer term sustainable growth path.

The leading edge of our strategy is to confront the challenge of achieving a sustainable balance between population and the country's productive resources. We link progress in three sectors - agriculture, fertility reduction and child survival, and private sector expansion - to the achievement of both short-term gains and to the laying of the permanent foundations of economic transformation and sustainable growth. Without progress in both long term fertility reduction and in natural resource management, durable growth and poverty alleviation in Bangladesh is not achievable. They are prerequisites for achieving the structural transformation of the economy and establishing Bangladesh as a more diversified, resilient and internationally competitive economy. These longer term objectives require a planning perspective of at least two decades. Consequently, our strategy operates at two levels. A short term five year horizon in which measurable results are achieved and a longer term period in which investments now will assure for larger and more durable payouts. Although this strategy (and in particular the Results section) focuses on the shorter term period of the CDSS, it is important to place the choice of strategic objectives in this CDSS in that longer context.

In the near to medium term, the strategy relies heavily on the growth potential of the agricultural sector to generate additional output and incomes and on expanding non-farm private sector output and employment. It also integrates three cross cutting themes - enhanced sustainability, involving women and open markets/open societies into the implementation of the strategy.

## OBJECTIVE 1: INCREASE FOODGRAIN PRODUCTION ON A SUSTAINABLE BASIS

The goal of USAID's agricultural strategy is to assist Bangladesh to increase foodgrain production over the next five years by 6.0 million metric tons and to cut Bangladesh's food deficit from 2.6 million metric tons to 1.0 million metric tons by 1995. These targets are achievable. They will contribute to enhanced collective and individual food security and poverty reduction. The increases in agricultural growth are also the linch-pin of our short term growth strategy for Bangladesh.

Our agricultural strategy focuses on achieving major short run increases in food grain production through increased yields and cropping intensity. For the longer term, USAID will lay the foundation for more diversified and sustainable management of the country's agricultural resource base. The five elements of our agricultural sector strategy are 1) open market price policies 2) input privatization 3) sustainable resource management 4) technology development and diffusion and 5) rural infrastructure. Each of these strategy elements and the programmatic resources USAID will mobilize to influence them are discussed below. This strategy is entirely consistent with the agricultural strategies of the Agency and the Bureau.

### 1. Open Market Price Policies

Through our PL480 Title III program USAID has successfully established the primacy of the private sector and of the market mechanism for the procurement and marketing of grain. Regulations preventing the movement and holding of grain by the private sector have been abolished or suspended and 90 percent of the internal marketing of foodgrains is in private hands. Nevertheless, the Government continues to play an important role in price stabilization for both producers and consumers through the Public Food Distribution system. Our policy dialogue has been directed at making this system more effective and shifting its

emphasis to more efficient targeting of food aid and to the truly needy (e.g., by elimination of subsidies in market channels, expansion of non-monetized food programs and establishment of the rural rationing scheme).

As we look to the future, USAID's Title III policy work will continue to be critical for ensuring positive price incentives to producers to invest in new inputs and technology. It will be important to ensure that a balanced relationship between producer and consumer interests is maintained and that spreads between farm gate and retail prices are adequate to allow private traders to operate efficiently. Finally, it will become increasingly important as Bangladesh moves from a subsistence rice economy to a more market oriented and diversified agricultural system that prices of rice and wheat are kept in line with international prices to allow for development of Bangladesh's considerable comparative advantage in agricultural production. Open market price policies will play a critical role in linking domestic and international markets for foodgrains to ensure that Bangladesh stays on an efficient agricultural growth path.

The PL480 Title III program is our principal tool for supporting policy dialogue and policy reform. The program will continue to support the work of the International Food Policy Research Institute in the Ministry of Food. The team will develop research based policy recommendations in such areas as stock management and price stabilization, domestic foodgrain marketing efficiency, and the comparative advantage of Bangladesh foodgrain production. USAID will incorporate policy recommendations into annual Title III policy agreements. This work will also build institutional capacity for policy work in the Food Policy and Monitoring Unit in the Ministry of Food, strengthen private consulting and academic based food policy research (supported by the Winrock Human Resource Development program) and, potentially, with the recently created

## Agricultural Prices Commission.

### 2. Input Privatization

As a consequence of USAID's Fertilizer Project, a revolution has occurred in the last 18 months in the emergence of the private sector as the dominant force in the distribution of fertilizer in Bangladesh. The monopoly of the old parastatal, which has existed for more than 30 years, has now been broken. As a consequence, in 1989 more fertilizer was sold to more farmers at a lower price than ever before, contributing substantially to record Boro and Aman crops. New opportunities now exist for expanding the role of the private sector agribusiness in fertilizer importation, in the provision of technical advice to farmers and in the provision of production increasing technology in irrigation equipment and seeds. These inputs, produced and distributed principally by the private sector, will be a major source of increased foodgrain yields and productivity over the CDSS period. For example, in 1989-90, the parastatal which currently has a quasi monopoly on improved rice and wheat seed production and distribution was able to provide only 8% of the national requirement. Private seed producers and distributors already have a dominant role in vegetable and jute seed sales. USAID will support expanding the role of the private sector agribusiness in the multiplication and distribution of foodgrain and other seeds while protecting the recent gains made in private sector fertilizer and irrigation equipment distribution.

The USAID funded International Fertilizer Development Center (IFDC) team has recently been transferred out of the old parastatal (BADC) into the office of the Secretary of Agriculture with a broadened mandate to work on policy issues related to improved private sector provision of a range of agricultural inputs---principally fertilizer as well as seeds. IFDC will continue to promote policy reforms which encourage free and open competition for the private

fertilizer sector. This will expand the recent gains in urea to other fertilizers, to private sector importation and a far greater role for the private sector in compounding and importing fertilizer formulations best adapted to local conditions. Working through our Agricultural Research project, IFDC activities, and a new private sector seeds project, USAID will support policy analysis and other initiatives directed at establishing a broadened role for the private sector in the provision and distribution of new improved seeds for rice, wheat and corn. USAID will also continue to encourage the principal multilateral development banks to incorporate our private sector policy agenda into their own program and project loan conditionality. The effectiveness of our TA and policy dialogue can in this way be greatly strengthened.

### 3. Sustainable Resource Management

The recent expansion of agricultural production in 1989 was derived from private sector, groundwater based growth in foodgrains. These groundwater resources are still largely untapped and further expansion of foodgrain production from ground water development can be expected for the next 5-10 years.

Over the longer term, the challenge is to sustain these production gains, capture the benefits of the next generation of irrigation development (from far more difficult surface water or floodplain agriculture), and ensure sustainable development of Bangladesh's associated fisheries and forestry resources as identified in USAID's Environmental and Natural Resource Assessment. These concerns require USAID to take actions in the current CDSS in order to lay the ground work for a more diversified and sustainable agricultural system.

USAID, following the recent London Conference on the Flood Control Action Plan, agreed to take a lead role in the four of the major studies of the Plan including the important assessment of the significant environmental impacts (fisheries, biodiversity, etc.) and of the socio-economic dimensions of flood

control projects. Under the ISPAN project USAID will field a full time irrigation advisor to work with the Ministry of Agriculture and liaise with the Water Master Plan Organization. This will be USAID's first DA direct programming in the water sector in nearly a decade. In addition to positioning us to monitor the implementation and environmental soundness of the Action Plan, it will also allow us during the CDSS to design a new DA project directed at policy and technical issues in support of improved private sector water utilization monitoring and related policies that encourage growth of private sector import, distribution and servicing of irrigation equipment, and to identify investment opportunities for private sector manufacture of such equipment. This project will also explore new strategies for longer term development of sustainable floodplain agriculture.

USAID's major Environmental and Natural Resource Assessment will be published in April 1990. It will provide the focal point for organizing support to NGO, Government, universities, local resources organizations and other donor efforts for enhanced environmental education, civic participation and action plans to conserve biodiversity and tropical forests. Likewise, USAID will conduct a major environmental assessment and redesign of its CARE Food For Work rural roads program. USAID will also examine support for a number of discrete actions directed at environmental sustainability either under existing project activities (e.g., TRP or DMT) or as a stand alone project

#### 4. Technology Development and Diffusion

Given Bangladesh's heavily stressed natural resource base, technology development and diffusion is critical to expanded foodgrain productivity. USAID has a longstanding and successful involvement in agricultural research and the development of new yield-increasing technology. That involvement will be sustained and expanded by incorporating far greater attention in our program to

farming systems work to make technology appropriate to farmer needs. Recent good crops have demonstrated that when price incentives are in place and deregulation occurs, the private sector can be a major vehicle for technology diffusion (e.g., spread of new shallow tubewells and pump sets in 1989). As technology becomes increasingly sophisticated in Bangladesh, there will also be an ever-growing need to upgrade the human resource skills in those sectors and industries which service a modernizing agriculture. This will require new and improved training of existing and future agricultural technicians in both the private and public sectors who can utilize and transfer this more sophisticated technology and provide needed services.

Our principal intervention will continue to be the Agricultural Research project. This project is addressing the problems of research management and the sustainability of the agricultural technology development system. Unlike predecessor projects, it is not focusing primarily on scientific capacity but on research priority setting and the diffusion of results to farmers. Drawing on a number of international research centers, and particularly on the Institute for the Support of National Agricultural Research Systems (ISNAR), the project is supporting a farming systems approach which will ensure the selection of priority problems and the development and diffusion of appropriate technology for Bangladesh's highly diversified farming systems. In order to provide for upgraded technical and managerial skills to support technology diffusion, USAID will provide assistance to the two premier institutions of graduate, undergraduate and continuing agricultural education in Bangladesh (IPSA and BAU). These projects will ensure that adequate and appropriately trained (or retrained) technicians and middle level managers in private sector agribusiness and the public sector are available to support Bangladesh's increasingly complex and input intensive agricultural sector. The private sector will utilize these

technicians to also take on an expanded role in technology development and diffusion. For example, private sector fertilizer and seed dealers will be assisted to give farmers better advice on optimal fertilizer applications. We also see possibilities for supporting greater NGO participation in the dissemination of new technology. The public will be retrained for their changing role in supporting private sector growth and in those tasks still best carried out by government e.g., applied research.

#### 5. Infrastructure

USAID has conducted several major evaluations that show that investments in rural roads and in rural electrification have significant positive impacts on agricultural productivity. Infrastructure provides farm to market linkages, increases the efficiency and competitiveness of the private sector, decreases the cost to farmers of acquiring new technology and inputs and, through many indirect effects, promote the dynamism of the agricultural sector. Investments in rural infrastructure promote rural and off farm employment and incomes and are a necessary requirement for increased foodgrain production in Bangladesh. USAID has been a leader in rural infrastructure development through its Title II Food for Work and its Rural Electrification programs. During the CDSS period, we will continue to exercise leadership in improving the developmental (and environmental) impacts of Title II Food for Work rural roads and in achieving a sustainable rural cooperative system to provide reliable electricity at reasonable cost.

USAID will support rural infrastructure development through a new Title II Integrated Food for Development program and the Rural Electrification programs. The current Title II Food for Work program is being redesigned to increase its developmental impact by ensuring that roads are selected and designed to link high priority areas and to improve the mitigation of environmental effects

associated with impeded drainage. We will also experiment with improved upazila planning techniques and alternative road technologies which lower both the construction and maintenance costs associated with roads constructed under the program. In addition to its infrastructure objective, the wheat supplied through the Food for Work program makes a major contribution to poverty alleviation by providing some 21 million days of work to the poor during the lean season. (We will also seek to diversify the Food for Work program in selected innovative areas such as forestry and womens income generation projects.) The Rural Electrification program will continue its work of bringing power for irrigation, rural industries and domestic use through sustainable client-managed cooperatives which also promotes pluralism in the rural areas of Bangladesh. USAID will shift a greater share of the financial burden for capital inputs to the BDG and other donors and carefully reduce its involvement to providing the TA to ensure that our prior investments and the increasing investments of other donors are properly supported. By the end of the CDSS period, this program will be in the final phase of closeout. These programs will not provide all the resources needed to support the development of rural infrastructure, but will leverage substantial investments of other donors and ensure that the quality and sustainability of rural infrastructure programs are maintained.

OBJECTIVE 2: REDUCE FERTILITY AND IMPROVE CHILD SURVIVAL

USAID's strategy for reduced fertility and improved child survival is to expand proven successes in service delivery to underserved areas as rapidly as possible and at the lowest possible cost. Contraceptive prevalence rates of 55-60% have already been achieved in selected areas of the country with USAID assistance and we have supplied much of the operations research needed to strengthen the entire national program (Government, NGO, and private sector) to

meet the demand for family planning services. Likewise, USAID has contributed to a functioning urban immunization system. We now need to replicate these successful models to expand the coverage of the Government service system (much of which is clinic based) and by broadening NGO outreach in underserved areas. The major components of this strategy are to increase outreach through satellite clinics which move clinical services closer to clients (rather than vice versa), to promote greater efficiency in the national program by installing Management Information Systems, to ensure greater coordination between NGOs and Government programs and, by carrying out cost effectiveness studies with BDG and other donors, to sharpen the focus of the national program on family planning and child survival interventions that work the best.

The elements to achieve this Strategy are:

1) Logistics and Commodities. A basic logistics system is already in place and operating to distribute family planning commodities in the Government and NGO systems. However, it is currently supported by extensive technical assistance since the BDG still lacks appropriately trained staff and management systems. AID-financed support and training will be used to allow the national program, utilizing the private sector where feasible, to assume full responsibility for logistics management, commodity forecasting and direct procurement by 1995. The single largest factor explaining method discontinuation in Bangladesh is interruption of commodity supplies. AID's objective, therefore, is to develop a capacity to ensure a sufficient uninterrupted supply of commodities in country of the appropriate mix at all storage and distribution points. Improved logistics management will increase contraceptive prevalence, and should reduce overall commodity costs over the long run by assuring that excess supplies of inappropriate contraceptives are not ordered.

As the number of contraceptive users increases, so will the demand for commodities. The growing cost of these commodities is the most significant financial issue the program will face in the coming decade. Foreign exchange support from other donors will be necessary for the foreseeable future to finance the growing needed imports of contraceptives. While USAID will be eliminating its support for condom procurement, we will maintain limited other commodity support for the Social Marketing Program and for the Government and NGOs. This limited involvement in commodity supply will also position AID to work with the BDG and donors on more effective cost recovery methods through commodity sales/user fees.

2) Management Information System (MIS): The instruments and means are in place in the public sector to operate a family planning service delivery MIS. AID assistance has already helped to develop and successfully pilot a service statistic system which has been approved by the BDG. However, the Government's MIS unit requires additional staff, training and technical assistance to implement the system nationwide. USAID assistance will be used to operationalize the current MIS system nationwide, strengthen the unit's ability to train field personnel in its use, and teach staff to analyze the data gathered and translate it into policy recommendations for senior decision-makers. This will improve the Government's ability to evaluate program and worker performance, target resources to underserved/poor performing areas, estimate and project commodity and other resource needs, and thereby achieve significant cost efficiencies.

3) Decentralization of Family Planning Services: Currently, clinical services are available at static sites which are culturally and geographically inaccessible to the majority of rural women. To solve this problem, decentralized satellite services have been entertained. However, field workers

have difficulty reaching satellite sites due to lack of travel support and needed equipment is often not available. USAID will work with the BDG to fully operationalize these satellite services, improve field worker access to them, and promote home delivery of services via the field workers. This will involve, in addition to technical assistance, local currency support to improve field worker mobility and training to effectively serve as this link. It will also involve support to ensure that staff are properly supplied with essential commodities and equipment. Our assistance in this area promotes USAID's policy of offering the broadest range of service choice and allows our direct involvement in quality assurance for different methods used.

A vital element to assuring that clinical services are delivered efficiently is to improve the BDG's field operations. Our Title III local currency support will support BDG efforts to increase the number of female field worker staff (and improve associated logistics and supervision), and put in place a career path for them with suitable rewards to provide incentive to carry out their jobs effectively. USAID support to the innovative Upazila Initiative program will involve local political leaders in the design and implementation of locally managed family planning programs.

4) Research and Analysis for Policy-Making, (with special attention to cost management): With AID assistance, Bangladesh has achieved international renown for state-of-the-art population research. AID will continue to support demographic research which yields reliable indicators of program impact, and operations research to identify program constraints and to field test interventions, but with a new emphasis on mainstreaming such functions into the BDG. A Government institution with a mandate for population research and adequate staff exists, and the BDG has expressed interest in assuming increased responsibility for overseeing demographic and operations research and

contracting directly with existing, well-developed private sector research organizations. Institutionalizing research within the BDG will improve long-term sustainability of this vital program component and enhance the use of data by Government in policy-making. AID will help maintain research quality during the transition into the Government system and improve the public sector's ability to identify, develop and field test interventions, evaluate the results, and utilize findings to improve program effectiveness and cost efficiency.

A key research activity will be initiated at the start of the CDSS period to examine the cost structure of the national program and project future costs through the rest of the decade under various scenarios and assumptions. The findings of this study will form the basis for policy dialogue with the BDG in the next population project beginning in FY92 on allocation strategies to contain growth in costs while sustaining program achievements over time. These findings will also be discussed with other donors supporting family planning in an effort to influence their funding priorities.

5) NGO Service Delivery and Cost Recovery: USAID supported NGOs currently provide services to 20% of all modern method users in Bangladesh. As the contraceptive prevalence rate increases and the number of eligible couples also increases, AID support (supplemented by limited cost recovery), will be needed to enable NGOs to maintain this market share. However, the challenge for the future is to increase the effectiveness of the existing NGO field based service delivery system. Principal opportunities are in greater targeting of NGO services to more remote and underserved areas and in improved coordination to eliminate any duplication between NGO and Government services. At the same time, attention will be given to transfer and replication of successful program interventions piloted by NGOs to the Government program. There is also potential for an expanded role for NGOs in providing support to the Government.

program in such areas as training, technical assistance in program management and design of innovative programs. The mid term evaluation of the Family Planning and Health Services Project to take place in CY90 will address these issues. USAID will incorporate findings in these areas into its support for NGOs during the CDSS period and also begin to address long term NGO sustainability. Cost recovery, broadening of the NGO donor base and closer linkage to government funding are some of the principal opportunities for improved long term sustainability of the NGO program.

6) Social Marketing Program The Social Marketing Program is already a reliable, cost effective, private sector mechanism which is providing a steady supply of non clinical contraceptives through tens of thousands of retail outlets across the country. This component of the USAID population program has even greater potential now that it has graduated (January 1990) from a government controlled program to a fully private company with a Board comprised entirely of individuals from the private sector. USAID will assist SMP to establish itself as a private, independent company and the country's primary commercial marketing channel for non clinical contraceptives and ORS. We will seek improvements in efficiency of SMP's products, increased cost recovery through decreased product subsidization and market research which will increase the effective use of commodities. We will also encourage other donors to shoulder some of the financial burden of this successful program (particularly in financing of commodities).

7) Other Private Sector Family Planning Initiatives: USAID will provide both technical assistance and training to large private sector concerns to promote family planning and health practices among their workers. Based on initial contacts, we envision opportunities in tea estates, jute mills and garment factories, and rubber plantations. There is strong interest in private

sector industry to increase contraceptive prevalence among its workers, and USAID assistance can help companies incorporate family planning services into employee healthplans.

8) Child Survival In addition to family planning (in itself a child survival intervention) and the MCH services provided in conjunction with family planning by USAID NGOs, the Mission will promote enhanced child survival through; 1) development of a sustainable urban immunization infrastructure, focusing on making the current program more cost efficient and institutionally sustainable through improved targeting, mobility and scheduling of vaccination clinics and increased private sector involvement; 2) establishment of a health/nutrition surveillance system through a network of NGOs collaborating with the BDG Institute of Public Health Nutrition. The data generated will be used in planning and evaluating multi-sectoral interventions (health food and etc.) and on targeting relief efforts to those most at risk following natural disasters; and 3) social marketing of oral rehydration solution (ORS), in conjunction with our social marketing of contraceptives.

OBJECTIVE 3: EXPAND A COMPETITIVE PRIVATE SECTOR

USAID's private sector strategy statement of December 1988 addressed regulatory and policy constraints to private sector investment and open competitive markets. The emphasis in the CDSS period is in creating a predictable environment in which private sector and market-based decision-making can occur thereby leading to improved economic efficiency and employment. Our strategy is designed to strengthen the private sector's ability to take advantage of investment opportunities by enhancing business and managerial skills, improving the sector's ability to take advantage of international market opportunities, strengthening the financial system's role as an intermediary to finance private sector growth, and improve the role of private sector

organizations in defining and articulating public policy.

As private sector development is a relatively new area of strategic emphasis for USAID, we will put a high priority during this CDSS period on implementing a comprehensive program of action research on regulatory impediments and investment incentives. Also, given the limitations on our resources, we will employ a high level of donor coordination particularly to support our work in policy execution and deregulation and in strengthening financial institutions and capital markets.

The following are the principal strategy elements to support an expanded competitive private sector:

1) Liberalizing the regulatory environment. The Mission will complete the analytical work under the Employment and Small Enterprise Policy Project to identify those policies which impede the development of small and medium-sized industries. Recommendations from this project will form the basis for policy analysis by a new policy implementation analysis group in the Ministry of Industries under USAID's new Industrial Promotion Project. The results of this work will assist the Mission in addressing specific incentives for small and medium enterprise creation and expansion. It will also suggest regulatory changes that can improve the profitability of export and domestic industries and attract new entrants and follow-on activities that will test the effectiveness of selected regulatory reforms.

USAID will also place technical assistance within the macro-economic analysis unit of the Bangladesh Bank to assess the impact of macro-economic policies on private sector investment and export growth.

2) Strengthening financial markets. In 1990, USAID will embark upon a major reform effort intended to strengthen and reform financial sector institutions and policies that affect industrial term lending and agricultural credit. USAID

has collaborated with IDA, ADB and the IMF for two years on a major reform in interest rate structures and lending guidelines affecting both public and private financial institutions. The project effort, the Financial Sector Credit, is the first phase of a plan to establish a commercial banking system operating within a modern monetary framework. The program will substantially improve financial intermediation, facilitate competition, increase the size of the total lending market for private banks, reduce biases against private banks and ultimately extend privatization of nationalized commercial banks. It is also anticipated that USAID will help expand the Bangladesh financial market by assistance to develop the equities market. A pilot activity is already underway with the Dhaka Stock Exchange.

3) Providing financial and technical assistance to small and medium enterprises. USAID will gradually phase out of direct financial assistance to firms (having successfully piloted the MIDAS effort), but will continue support to business development by focusing on the generic needs of new and expanding small and medium enterprises (SMEs) for finance, management assistance and technology development. Areas of involvement include:

---Establish a loan guarantee "window" for SMEs using USAID and PRE resources and requiring market rates of interest. The purpose is to establish a competing loan mechanism, employing different lending criteria to demonstrate that higher returns are possible for public and private banks than using more conventional loan practices and subsidized interest rates.

---Develop new financial mechanisms such as back-to-back letters of credit and improve efficiency of duty drawback schemes to improve export efficiency.

---Create a Business Advisory Services Council (BASC) to provide product and market information to new and existing enterprises.

---Establish an office of the International Executive Service Corps (IESC) to provide firm-specific assistance in technology transfer, and to work with BASC on generic problems of SME access to and adoption of new technologies.

---Continue to support for specialized lending to female-headed and owned enterprises and explore ways to make this activity more sustainable by mainstreaming it more into the formal banking system.

---Select private sector chambers of commerce, relevant trade associations, and larger NGO intermediaries for management training to improve their effectiveness in representing member interests, and in articulating private sector interests to Government. Strengthening private sector interest groups will contribute to more open public/private sector policy dialogue.

4) Improving entrepreneurial skills in both private and public institutions. This intervention involves both training and technical assistance to help businessmen and managers recognize and exploit opportunities in new product lines and markets, with particular attention to exports. USAID will also devote training resources to public policy makers by supporting management training on private sector topics. Direct TA support to the Ministry of Industries and the Board of Investment should help upgrade analytical skills in those institutions for policy analysis and investment licensing. In the NGO sector, through the Private Rural Initiatives Project, USAID will work with indigenous self-help organizations to further strengthen to undertake community-based income generating projects and to improve the articulate of NGO interests in the public policy arena. The creation of new entities such as a self-supporting BASC that sells its services to the private sector, and a local office of IESC will provide new information for new and expanding enterprises.

These initiatives will also concentrate attention on the development of women entrepreneurs and on enhancing the participation and managerial ability of women

in both private and public institutions.

5) Action research on market behavior, investment incentives and entrepreneurial attitudes. It is essential that USAID improve its analytical understanding of those factors that explain market behavior in Bangladesh and influence private sector investment decisions. We propose to execute a research agenda that is "action-based" to meet specific policy or decision requirements of government and private sector bodies. USAID initiated such an effort in 1987 under the Enterprise Employment Policy Analysis project with the BDG Planning Commission. This project's results are already influencing the BDG's strategic priorities in its Fourth Five-Year Plan for these relate to private sector promotion. Some priorities for further policy research include: streamlining investment licensing process, studying impediments to female entrepreneurs creating or expanding businesses, analysis of impediments to foreign investment, and introduction of new technologies through licensing, joint ventures, etc.

#### DISASTER ASSISTANCE

An important component of our program is designed to assist Bangladesh in coping with natural disasters. We do not view this as a crosscutting theme but as a integral part of our sector strategies. Our disaster assistance strategy functions at three levels: preparedness, relief and rehabilitation. With regard to preparedness, AID was a key donor in the 1970s in establishing cyclone detection and early warning systems and in financing coastal embankments. We will continue to work with the Bangladesh remote sensing institute (SPARSSO) within the framework of our agricultural sector program and our support for the Flood Control Action Plan. Since the 1988 floods, we have championed the development of a national disaster preparedness program, under the auspices of the UNDP, to which we would be the largest single donor. Our NGO project (PRIP) is also providing assistance to NGOs to improve their disaster preparedness. In

addition we are associating ourselves with the major environmental and socio-economic studies arising from the Action Plan for Flood Control. These studies will help ensure that these flood control project provide worthwhile mitigation and are undertaken in a manner which is technically, financially, economically and environmentally sound. In disaster relief we have found from repeated experience that our ongoing programs in food security and child survival are our best responses to major disasters. The extraordinarily low death toll in the 1988 floods (estimated at 2,500 people out of a total of 30-40 million flooded out of their homes) was due in large part to the availability of food in country and the market and non-market mechanisms to distribute it. These mechanisms had been carefully developed with the BDG under our Title III food security program. Likewise, our longstanding support in diarrhoeal disease control played a vital role in averting deaths as a result of knowledge about, and availability of, ORS. Building on the success of the US relief effort during the 1988 flood, USAID has developed an up-to-date emergency plan which identifies food security and health as major areas of focus for AID. We are supporting an NGO network for famine early warning and targeting of food relief and have put in place a fast acting mechanism to channel OFDA disaster relief through reliable NGOs and the private sector. Finally, our principal response to rehabilitation will be to provide Title III local currency support to selected rehabilitation projects of other donors.

In short, our strategic response to disasters in Bangladesh is not simply to react to them, but to use our entire ongoing program to help create a sustainable national capacity in disaster preparedness, relief and rehabilitation.

## Cross Cutting Themes

Three crosscutting themes of sustainability, involvement of women and open markets/open societies will permeate our policy dialogue agenda, sector program/project design and implementation work during the CDSS period. It is not possible to detail all our responses within the confines of this document, but we outline below some of our principal approaches and interventions, particularly in regards to open markets/open societies. USAID/Bangladesh has a current and highly praised Women in Development Implementation Plan which, with the recently completed Environment and Natural Resource Assessment, provide greater detail on Mission intentions in these areas.

Implementation of our Open Markets/Open Societies theme will derive from policy dialogue, starting at the highest level of the United States Mission, on the establishment of democratic institutions; from our Civic Participation project (with its support for the judiciary and the legislature, for human rights endorsement, for voter literacy and open elections, etc.); from our widespread support for NGOs (about one third of all DA resources are channeled through NGOs) and leadership among other donors in policy dialogue with the BDG on voluntarism; from our support for consumer owned and managed rural electrification cooperatives; from our Private Rural Initiatives Project which supports the entire range of NGO efforts (e.g. in income generation) through improved NGO networking, cooperation and management; from our support for narcotics education under section 116e; from AAFLI's work on Trade Unionism; from our analytical work and advocacy in agriculture and industry on comparative advantage and open trade regimes; from our support for local level participatory disaster preparedness; from our redesign of the Title II food for work program to increase local government effectiveness and accountability; from our support (including that of USIS) for participant training and academic exchange; from

our Upazila Initiatives component of the Family Planning and Health Services project; from our support for the private sector in agriculture and family planning; from our advocacy with BDG and with other donors on pluralism; from our support to NDI for oversight of national elections; from Mission advocacy for human rights, from our support for private sector and their representative bodies (Chambers of Commerce and Trade associations). In short, the Mission has a wide range of instruments at its disposal to promote open markets/open societies. We will not be timid in using them.

In the area of Sustainability, we will implement the Action Plan proposed in the Biodiversity and Tropical Forests Annex to this CDSS. The Action Plan addresses short term needs to reduce further degradation of natural resources and to strengthen environmental analysis and policy formulation. It also addresses the medium and longer term need to build institutional capacity for resource management. In matters of financial management and institutional sustainability, we have identified numerous opportunities in our agriculture, family planning and child survival and private sector strategies to reduce costs, increase cost recovery and burden sharing, improve institutions, eliminate subsidies, privatize industry and services, reduce public sector payrolls, expand the role of NGOs, deregulate the private sector and improve the economic efficiency of infrastructure construction.

Finally, in the Involvement of Women we have incorporated gender concerns throughout the implementation plans of our three principal sectors. Control over fertility, women's education, support for women's entrepreneurship, farming systems research directed at homestead production and processing, targeted participant training, hiring of women family planning workers and health assistants and improved targeting of non-monetized food aid to women, are some examples of programmatic interventions which give substance to our desire to

support greater involvement of women in the economic and political future of Bangladesh.

## RESULTS

In this concluding part of the strategy section, we highlight three things: First, that significant and critical results will derive from the implementation of the strategy; second, that the results are interactive and supportive and not just additive, and third, that the results are measurable. The Mission will be submitting to Washington a separate "Contract" which proposes program performance indicators derived from our CDSS that can be measured on an annual basis. In this discussion, we focus on CDSS performance targets that are the principal results of our overall program in the next five years.

The goals of our first objective, Increased Foodgrain Production on a Sustainable Basis, is increased domestic production of foodgrain. Specifically, we expect to see, by 1995, a domestic harvest of 22.3 million metric tons (compared to 16.3 million tons 1985-89), a more than 60% decrease in food imports from 2.6 million to 1.0 million tons and an increase in foodgrain yields from 1.1 to 1.5 metric tons per acre.

Achieving these results will require meeting specific targets in each of our own strategy elements. For example, in the area of Open Market Price Policies, we will assure that margins between farmgate and retail prices are at a sufficient margin to ensure private sector marketing and profitability and hence a constant supply and stable prices to consumers. We will support increased privatization of importing, marketing and distribution of fertilizer and seeds so that the private sector by 1995 is providing 80% of market requirements for all fertilizers (2.7 million metric tons) compared to 5% over the last 2 years, and 20% of market requirement for high-yielding variety seeds. Through the combined resources of PL480 Title III local currency support and DA, we will

support an increase in the area under tubewell irrigation (principally private) by 30% from 6.1 to 7.9 million acres. Our agricultural research and professional education investments will result in increased average rice yields as described above. In the area of infrastructure, our Title II Food for Work program will construct/rehabilitate roads on continuous alignments that yield the highest possible economic returns, and our rural electrification project will establish 32 fully functioning and financially sustainable rural electric cooperatives providing power to 45% of rural consumers.

With regard to our second objective, Reduce Fertility and Improve Child Survival, our goal is to see by 1995 a reduction in total fertility from 4.9 to 4.4, an increase in contraceptive prevalence from 32.8% (1989) to 40%, an infant mortality rates reduction from 118 to 110 per thousand, a doubling of urban immunization rates (to 40%) and that 45% of child diarrhea cases nationwide (estimated 10 million per year) are treated with ORS in 1995 compared to 30% at present. The increase in contraceptive prevalence rates will come almost entirely from the use of modern methods. This will produce an actual increase of almost 50% in the number of contraceptive users (and hence commodities) from 6.7 million to 10 million people. Although this will decrease the total fertility rate by 1995 to 4.4 children, average completed fertility will still be almost 50% higher than the currently desired family size of about 2.9. This highlights both the need and the potential for Family Planning programs over the longer term.

The goal of our third objective to Expand a Competitive Private Sector is to contribute to an increase in private sector investments from 5.8% to 8% of GDP by 1995. As a result of our support for reform of the financial sector overall bank lending in Bangladesh will increase by 25%, private sector bank lending will increase from 78% to 86% of all lending and delinquencies will decline from

60% to 15%. Our support for policy analysis and deregulation and direct technical and management assistance to private sector firms will also impact on both the overall level of domestic private sector investment in the economy and the creation of new enterprises. Our action research program will produce implementable policy recommendations for private sector liberalization.

These results are significant in themselves. Taken together, we are confident that they will make essential contributions to Bangladesh's sustainable development and contribute substantially to putting Bangladesh onto a 5% (2.5% per capita) growth path. As a strategic whole, they lay the basis for longer term sustainability, growth, and structural transformation of the economy not only by accelerating the growth of per capita income, expanding the domestic market, and opening Bangladesh up to competitive international factor and product markets, but also by addressing the fundamental imbalance between population and the resource base of the economy.

Our confidence that these results are achievable is based on long standing experience, detailed analysis and objective verification. In our separate "Contract" with the Bureau, we will discuss the data and methodological requirements for the specific indicators of the contract. Through these indicators we will know what we have achieved and will be able to show Bangladeshi decision makers the benefits that are being realized from our program and its difficult policy and implementation requirements. Equally important, we will be able to show the U.S. Taxpayer what AID has been able to deliver. We are confident that these will be results of which the Agency can be proud.

## V. RESOURCES

In order to address the requirements for meeting our strategy objectives, USAID/Dhaka recommends a program of \$680.5 million in new resources for the CDSS period 1991-1995. This consists of \$280.5 million in development assistance, \$300.0 million PL 480 Title III food assistance, and \$100.0 million PL 480 Title II.

As indicated in Table 1, support for Increased Foodgrain Production will total \$464.5 million, or about two-thirds of the total resources proposed for the CDSS period. Support for Reduced Fertility and Improved Child Survival will total \$166.5 million, or about one-quarter of the proposed total program resources. The objective of an Expanded Competitive Private Sector is allocated \$49.5 million development assistance, or 7.3% of the total program resources. This latter amount excludes support for private sector marketing of inputs and commodities, and disseminate of technology and services in the agriculture and family planning sectors.

The \$280.5 million in development assistance proposed for the 1991-1995 period is 17% less than the \$336.8 million in DA resources provided to Bangladesh during the last CDSS period. The allocation of DA funds in the last CDSS and that proposed for this CDSS are shown in Table 2.

Table - I

FY 1991-1995 CDSS Estimate Of Resource Use

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(U.S.\$ Million)					
Program/Sector Objective	Development Assistance	PL 480 I Title III	PL 480 Title II	Total of Resources	Comment
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<b>INCREASED FOOD PRODUCTION ON A SUSTAINABLE BASIS</b>	93.5	76.0	95.0	464.5	
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Strategy Elements:					
* Open Market Price Policies	1.0	2.0		3.0	
* Input Privatization	19.0	56.0		75.0	
* Sustainable Resource Management	13.0	76.5	5.0	94.5	Includes potential support to Flood Action Plan Component
* Technology Development and Diffusion	30.0	40.5		70.5	
* Infrastructure	30.5	101.0	90.0	221.5	Includes Parallel TA to other Donor RE Projects
<b>REDUCED FERTILITY/ IMPROVED CHILD SURVIVAL</b>	137.5	24.0	5.0	166.5	
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Strategy Elements (Fertility):					
* Assistance to BDG (Logistics and commodities; MIS; Research; Decentralized services)	30.3	21.5		51.8	
* Non-Government Organizations	53.0		5.0	58.0	
* Social Marketing Project	34.2			34.2	
* Private Sector Initiatives	1.0			1.0	
Strategy Elements (Child Survival):					
* BDG Expanded Program of Immunization	1.5	2.5		4.0	
* Non Governmental Organization	10.0			10.0	
* Private Sector: Social Marketing ORT	7.5			7.5	
<b>EXPANDED COMPETITIVE PRIVATE SECTOR</b>	49.5	-	-	49.5	
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Strategy Elements:					
* Liberalize Regulatory Environ	6.5			6.5	
* Strengthen Financial Markets	18.5			18.5	Includes TA for IDA/ FSC
* Financial and Technical Assistance to Small Enterprises	17.0			17.0	
* Improve Entrepreneurial Skills	4.0			4.0	
* Action Research	3.5			3.5	Excludes PD&S Funds
<b>Total</b>	<b>280.5</b>	<b>100.0</b>	<b>100.0</b>	<b>680.5</b>	

\* Title III column represents new resources only, and excludes approximately \$100.0 million of local currency carried in from prior CDSS period. See USAID/Bangladesh 1991-1995 Program Proposal for complete Title III local currency budget breakdown.

TABLE 2

DA OYB ALLOCATION COMPARISON  
1986-90 AND 1991-95 CDSS PERIODS

<u>Strategic Objective</u>	<u>1986-1990</u>	<u>1991-1995</u>
	Mil \$ (%)	Mil \$ (%)
Increased Foodgrain Production	117.4 (34.8)	93.5 (33.3)
Reduced Fertility Improved	149.3 (44.3)	118.5 (42.2)
Improved Child Survival	28.5 ( 8.5)	19.0 ( 6.8)
Increased Employment (1986/90)	41.7 (12.4)	
Expanded Private Sector		49.5 (17.7)
Sector (1991/95)		
TOTAL	336.8 (100.0)	280.5 (100.0)

The Mission has reviewed its projects and pipelines in order to establish a program that accommodates a reduced level of DA funding even as it demonstrates effective progress toward achievement of strategy objectives. Over the CDSS period, we will maintain the relative proportion of investments in foodgrain production to the overall program, decrease the relative share of DA support to reduced fertility, and substantially increase our relative support to private sector activities. We will phase out some activities, for the most part large commodity, credit and construction components in fertilizer, rural electrification, and family planning so as to focus limited remaining funds on technical assistance and training where we can leverage major amounts of other donor resources. In addition, we will reduce direct lending support to private sector small firms, focussing instead on promoting a policy and regulatory

climate more supportive of private sector investment and enterprise creation. We will also focus on the establishment of information and service networks that will support this private sector growth.

By the end of the CDSS period, we will have phased out our involvement in fertilizer distribution, and agro-climatic environmental monitoring, and be near phaseout in rural electrification. In the population/health sector, we will substantially reduced support for family planning commodities, focussing instead on institutional development to replicate and expand existing successes from upazila-level pilots, support service expansion of the national program (including BDG and NGO/SMP channels), and strengthening the planning, monitoring and analytical capacities of Government.

Relationship with Other Donor and BDG Resources Average annual aid commitments to Bangladesh from all donors averaged about \$1.7 billion during the prior CDSS period, increasing to some \$2.0 billion by the end of the decade. Commodity aid (non-food) accounts for about 21% of the total, food aid 16%, and project aid 63%. The proportion of project to non-project aid in all donor programs has remained relatively steady over the decade.

The three major donors in Bangladesh are IDA, the Asian Development Bank, and Japan. The multilateral donors (including the UNDP and EEC) account for about one-third of commitments. Japan is the largest bilateral donor, providing one-fifth of the total aid received by Bangladesh (exclusive of debt relief); USAID is second with about 6.5% of annual ODA commitments. Next in line is Canada which is a major food, commodity and project aid donor, followed by the FRG, U.K., the Netherlands, Scandinavian countries, and Saudia Arabia. As many bilateral donors have experienced cuts in their aid budgets over the past one to two years, the relative importance of IDA, the ADB and Japan has increased.

Relative to the BDG budget, the value of AID resources is equal to about 7.5%

of the BDG annual development plan budget, and our Title III local currency underwrites about 10% of the Government's local currency allocations to development projects.

In the light of our own necessarily limited resources, we will increasingly seek to lever other donor funding in our three strategic areas in ways that will help ensure progress toward performance targets and strategy objectives. We will seek to reduce DA financing of local currency costs and one will use our DA funded technical assistance and training resources as parallel financing of other donor efforts that promote program implementation and policy reforms needed for realization of our CDSS strategy objectives. This process has already begun. ADB and IDA are projecting continued loan support of major sectoral programs in agriculture, industry, infrastructure, and finance. USAID is now reviewing requests for parallel assistance to multilateral soft loan activities valued at over \$600 million. The total cost to USAID to support these activities would be \$40 million (primarily for technical assistance services and training) or \$1 for every \$15 in other donors' monies. Of special note is our close collaboration with Japan in the areas of agriculture education and rural electrification and our growing joint policy dialogue with Japan to promote an atmosphere conducive to private sector expansion in Bangladesh.

#### Food Aid as a Development Resource

The \$300 million in PL 480 Title III food and local currency is a unique resource in Bangladesh. It provides a significant opportunity not only to sustain policy dialogue on agriculture price policy with BDG but also enables us, through its local currency component, to focus AID's dollar financing on foreign exchange costs and to complement major foreign exchange loans of other donors. USAID's new PL 480 Title III proposal (January 1990) seeks a 5-year program that coincides with the CDSS period and that will be closely tied to

CDSS objectives and DA resource flows. Approximately \$55 million per year in Title III generated local currency will be expended to support local currency counterpart costs of DA-financed projects during the CDSS period. An additional \$30 million per year will be allocated to those other donor projects which directly serve CDSS strategy objectives.

Title II will also continue to play an important role in the USAID program. In addition to supporting a revitalized and more developmental Food for Development roads program, we will also seek to diversify the use of Title II food resources (wheat) in such areas as minor irrigation and small embankment construction, agroforestry, and to provide incentives to attract women for skills training.

Management Implications of Proposed Strategy and Resource Levels Currently, USAID expends \$160 million per year in development assistance and PL 480 resources with a staff of 32 U.S. direct hires, 132 Foreign Service National Staff direct hire and PSC, four program-funded TCN PSCs and one OE-funded USPSC. In addition, eight institutional contract teams, most under host-country contracts, are resident in-country. Currently, Bangladesh ranks 15th in AID in terms of staff size but executes the Agency's seventh largest program (and the Agency's largest combined DA/food program). The management demands associated with a program of this size are substantial. The vulnerability of the Agency to fraud, waste and mismanagement in Bangladesh is particularly acute. Moreover, despite reductions in major program components over the next five years, several other factors will intensify our workload. The complex design and implementation requirements of the \$60 million annual Title III program and its local currency components will continue to demand a great deal of Mission staff time. The potential diversification of Title II resources, and their closer integration with the DA program, will also increase our monitoring

responsibilities. And, as USAID seeks greater involvement with other donors in our programs, the work load of sustaining a very high level of program and policy coordination, particularly with the IBRD, ADB, and Japan, is certain to increase.

USAID has already begun to address the Mission staffing implications of its proposed CDSS strategy. In order to reduce the management burden on U.S. direct hires, every effort is being made to transfer responsibilities to qualified local FSN staff. In order to more efficiently handle Food for Work, Title II programs were recently transferred from the Office of Food and Agriculture to a newly established unit responsible for infrastructure development, within the Office of Project Development and Engineering. Also, a new Office of Economics and Enterprise was established to function both as the Mission's economic analysis unit as well as the locus for other private sector development activities. This integration of economic analysis and enterprise promotion into a single office will improve the efficiency of program strategy development and implementation.

With present staff levels and with the recent organization changes in place, the Mission is well positioned to manage the proposed CDSS program. The mission cannot absorb any staff cuts without seriously affecting management performance of the program proposed by this CDSS. There will be, in addition, the ever-present possibility of a need to mount relief operations in response to the natural disasters that are a recurrent feature of life in Bangladesh. We have decided not to establish a separate disaster unit with its own staff within the Mission believing that our current and proposed development investments are the best disaster responses we can make. We have developed a detailed disaster plan, refined from two years of experience in 1987 and 1988, which draws Mission staff from regular duties as needed during disasters.

The Mission has maximized the potential for substituting contract assistance for direct-hire staffing and shifting USDH responsibilities to local and program funded staff. We strongly believe the current level and composition of professional and support staff is necessary to administer the current program and respond to Agency requirements for accountability.

Obviously the level of operating expense funding is central to maintaining optimal staff effectiveness and taking full advantage of these organizational efficiencies. We are pursuing increased Trust Fund allocations from the BDG and exploring use of local currencies generated from sale of DA-financed commodities to augment our increasingly strained OE dollar budget. However, a level of OE resources as identified in the May 1989 ABS is required to adequately support our staff and to deliver the results promised by USAID's strategy.

**BANGLADESH COUNTRY DEVELOPMENT STRATEGY STATEMENT  
1991-1995**

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BIODIVERSITY AND TROPICAL FORESTS ANNEX  
USAID/DHAKA CDSS (1991-1995)

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## 1. Introduction

This annex describes the status of tropical forests and biodiversity in Bangladesh (Section 2), summarizes conservation needs (Section 3), outlines the Mission's current/planned activities that address those needs and meet the Congressional Mandate provided in the Foreign Assistance Act, Section 118, Tropical Forests, and Section 119, Biological Diversity, as amended in 1986 (Section 4). This annex meets the country analysis requirements of the US Congressional Mandate. It is based on the Environment and Natural Resources Assessment (ENRA) carried out as part of the CDSS analysis process and supplemented by material from the 1989 UNDP Bangladesh Agriculture Sector Review and the ADB/UNDP Bangladesh Energy Planning Project Final Report.

Biological diversity (biodiversity) refers to the variation and variability among living organisms and the ecological systems in which they occur (i.e., genes, species, habitats, and ecosystems). Congressional concerns for conservation of biodiversity and tropical forests have been linked, because tropical forests are often rich in species. Congressional concern for tropical forests, however, extends beyond establishment and maintenance of protected areas. In Section 118, Congress has recognized the importance of forests and trees to developing countries and expressed concern over deforestation and loss of tree cover as it poses a serious threat to development through shortages of wood, loss of biologically-productive wetlands, siltation of irrigation systems, destruction of indigenous peoples, extinction of plant and animal species, reduced capacity for food production, loss of genetic resources, and effects on global climate.

Biodiversity and tropical forests are vital to the livelihoods of people living in the delta nation of Bangladesh. Population pressures brought on by a current population of 112 million, expected to more than triple in less than fifty years, will place enormous stress on the natural resource base. Future economic growth will come from increases in the stock of productive resources and from increased technical and economic efficiency in resource use. The options for future growth will depend on the way natural resources are exploited.

- o Over 500 native fish species provide approximately 80% of the protein consumed by the populace, and fishery exports rank second after jute as a source of foreign exchange.
- o The estimated annual production of fuelwood had a market value of US\$ 100 million in 1984; estimates of annual fuelwood production/consumption range to over 8 million cubic meters.

- o Bangladesh has been one of the world's leading exporters of reptile skins, although over-exploitation has led to efforts to institute a ban on the export of some skins. Management of reptile and frog populations could result in sustained production of valuable exports.
- o The substantial fertilizer value of the blue-green algae and other living organisms in floodwaters that annually renew agricultural lands has not been estimated.
- o Genetic diversity important for improving Bangladesh agricultural production includes some 10,000 local varieties of rice as well as local varieties of legumes, fruits, and vegetables cultivated for sale and household consumption.
- o Homestead forest production (based on a wide variety of annual and perennial species) contributes between one third and one half of rural family incomes.
- o Other minor forest products, such as bamboo and golpatta (nipa) palm, figure prominently in local trade.

Despite the importance of biodiversity and tropical forests to the Bangladesh economy, the area of tree cover has declined rapidly in the past thirty years (now only 0.02 ha of tree cover per person), and biological diversity has been correspondingly reduced. Overuse and destruction of natural resources is negatively impacting the welfare of millions of Bangladeshis and threatening their food security and quality of life. Over half of forested lands in Bangladesh have been cleared in the past 20 years, reducing tree cover to less than 6% of the total land area. 78% of the fuelwood consumed now comes from homestead forests in spite of their accounting for only 15% of the forested area. Despite the importance of these homestead forests as a source of income and "savings" for rural households, they are being overcut and depleted. Poor families now spend over 30 hours per week scavenging for twigs, leaves and other biomass fuels needed for cooking. One third of the cow dung which would otherwise be used to help maintain soil fertility is now burned as a household fuel. Fisheries have traditionally produced 70-80% of the protein consumed by Bangladeshi households and have provided seasonal employment for millions of households; in recent years, however, the catch of inland fisheries has declined by 20%.

60% of Bangladeshi households are without sufficient land to produce enough food for their families. 20% of Bangladeshi households do not even have enough land for a homestead. Some 60% of the total land area is cultivated, one of the highest percentages in Asia.

The total population is now over 112 million, up from 90 million in 1981, and some 44 million in 1951. The population is expected to reach 140-145 million by the year 2000, and may not stabilize before exceeding some 340 million persons. Already, Bangladesh is the most densely populated country in the world (with the exception of city-states like Singapore). If the contiguous United States were as densely populated as Bangladesh, the current world population would fit within its borders.

Population growth is putting increasing pressure on Bangladesh's resource base. There is now over 11 persons per hectare of arable land in Bangladesh. By the time the population stabilizes in the next century, there will be 38 persons per hectare of arable land. Sustainable management of soil, water, fisheries, and forests is critically important in the face of such population pressure and anticipated population growth. Even if the anticipated increases in the population could somehow be reduced, the demands of the current population on the natural resource base of Bangladesh are such that these resources are already being stressed, degraded, and depleted in many ways.

Concern over population growth, limited agricultural production, and resulting chronic food shortages has led to a preoccupation with increasing foodgrain production. The possible and likely impact of large-scale expansion of irrigated agriculture on fisheries, groundwater supplies and rural livelihoods has recently emerged as a major concern. Industrial development has also been encouraged for some time, with little regard in the past for the effective regulation of industrial effluents or development of waste treatment facilities.

Many of these problems are increasingly being recognized by the government and development organizations in Bangladesh, and general awareness of environmental issues is growing. However, government efforts are often constrained by a lack of operational means and adequately trained manpower. Many laws and policies are outdated, poorly enforced, and in need of revision.

Unlike the situation in many Asian countries, conservation of tropical forests and biological diversity has, until recently, received little sustained attention by the government, by the public, or by the international donor and conservation communities. A number of recent developments, however, suggest that the political will to address environment and natural resource issues is steadily growing. Within the past six months, a Ministry of Environment and Forestry has been established, and the mandate of the newly expanded Department of Environment has been considerably broadened. This increasing awareness and will to respond needs to be translated into improved natural resource management and sustainable development strategies that will protect long term economic productivity.

## 2. The Status of Biological Diversity and Tropical Forests in Bangladesh

### 2.1 Biological Diversity

Background. Based on current estimates, approximately 5,000 species of flowering plants and 1500 species of vertebrates, including some 750 species of birds and over 500 species of fish, are found in Bangladesh. The Royal Bengal tiger and estuarine crocodile are recognized as globally-endangered animals. Sixteen species of vertebrates, including ten mammals (among them wild buffalo, rhinoceros, swamp deer, gaur, and hog deer) and one reptile (the mugger crocodile), are known to have become extinct in Bangladesh.

Biodiversity depletion is not yet perceived as a major issue in Bangladesh, and as a consequence, the institutional base for biodiversity management is undeveloped. Institutions for gathering information about the status of biodiversity exist, but they are underfunded. There is no central coordinating body to direct biodiversity research activities of these institutions. Nonetheless, there does exist a small core of qualified and dedicated individuals capable of gathering information if given the opportunity. While there are no private sector institutions devoted to biodiversity concerns, NGOs are beginning to address some issues. Conservation of biodiversity requires that long term planning be institutionalized as biodiversity-related institutions are strengthened in other ways.

Biological diversity is threatened by deforestation, forest conversion, agrochemical and industrial pollution, large-scale development projects such as irrigation and flood control projects, land use changes, and overexploitation of biological resources. Clearcutting, burning, and overcutting contribute to the destruction of native and secondary forest diversity, including indigenous species that could be profitably managed for timber and fuelwood production. Currently, there are no plans for managing the few remaining stands of natural forest as natural forests; instead, these stands are being cleared and converted to single-species tree plantations.

Threats to biological diversity originate from a variety of sources, including some which are relatively indirect but nonetheless important. Macroeconomic and sectoral policies often fail to take into consideration impacts on biodiversity. Weak institutions, inadequate funding, and unclear ownership policies have contributed to the lack of protection for threatened biological resources. Finally, biological diversity suffers as a result of the minimal regard given its economic value. Owing in part to the incomplete data on the economic value of biodiversity, its value is frequently underestimated (or ignored) by development planners.

Wildlife. Most terrestrial wildlife is dependent upon Forest Department lands for habitat, but the Forest Department's institutional capacity to promote and administer wildlife management has not been developed to any significant degree. Compounding the lack of wildlife management are the land use restrictions placed on lease holders of public lands and the constraints on private forestry that severely limit private sector involvement in wildlife management.

At least 94% of the original natural habitat areas in the country have been lost through clearing of land for intensive agriculture, overexploiting hill forests which are unsuitable for cultivation, and clear-cutting for plantations. What remains of terrestrial natural habitats is to be found in the relatively sparsely populated Chittagong Hills, the Sundarbans mangrove forest zone, and a few small areas in Sylhet.

Of the species-rich tropical rain forest, it is estimated that only some 5,000 to 10,000 hectares remain, scattered in inaccessible locations in the Chittagong Hill Tracts. The floodplain, deciduous sal forests have been severely disturbed and no longer harbor significant biodiversity. The only forested area of significant size is the Sundarbans mangrove forest which sustains significant aquatic biodiversity.

The Sundarbans region in southwestern Bangladesh and eastern India is home to the world's only genetically viable tiger population: no other habitat is sufficient to sustain a large enough breeding population. An international Wildlife Refuge Management Plan that calls for integrated management of the Sundarbans for multiple uses, including timber extraction and tiger population maintenance, has been proposed, but no action has yet been taken. The Forest Department has successfully maintained the Sundarbans ecosystem for over 100 years, and implemented a series of forest management plans, but new demands are threatening to undermine the long term sustainability of continued forest product extraction and habitat protection.

While tropical rainforests are generally recognized as rich depositories of biodiversity, coastal zones throughout the world rival rainforests in the richness of their biodiversity. In the delta nation of Bangladesh, wetlands, inland waterways, and coastal areas contain much of the nation's biodiversity. The important Sundarbans mangrove coastal area is described above. Outside the Sundarbans, wetlands provide critical habitat for migratory birds.

Lack of public interest and leadership in wildlife conservation has led to neglect of the system of protected areas. The reserve system that has been created never had an overseeing body define clear priorities. Further, insufficient

funds have been dedicated to the protection and management of parks and reserves. Most protected areas are subject to the same land uses that occur on other forest lands (e.g., plantation forestry, logging, shifting cultivation, and agricultural allotments for settlers from the plains).

Aquatic diversity. The fishery resources of Bangladesh are among the richest in the world. While tremendous genetic diversity is embodied in over 500 fish species which inhabit Bangladesh's inland, estuarine, and coastal waters, little substantive data on the ecology of these species is available.

Despite the importance of fisheries in terms of nutrition, employment, and its contribution as an open-access resource, Bangladesh's inland fisheries are losing ground to agriculture, flood and road embankments, and other land uses. This loss of habitat has led to a decline in inland capture landings at an average annual rate of 2.5 percent since 1983. This economic loss has been partly offset by increased marine catches and strong growth in the aquaculture subsector, including shrimp exports. However, aquaculture is still largely dependent on wild fry and larvae. The decline in the inland capture fisheries has significant nutritional consequences for the rural poor; this common resource provides the largest open-access food source to the population. Indications are that the marine capture fishery is being fished at or near the maximum sustainable yield and is also in need of sound management policies.

Experience in other countries suggests that open-catch fisheries in Bangladesh have several advantages: biological diversity offers risk-spreading advantages against pathogens or susceptibility to pollutants, and numerous species establish niches in a way that makes maximum use of available habitats. Yet there is insufficient data specific to Bangladesh's aquatic resources upon which to test these hypotheses.

The decline of the inland fisheries has been attributed to a combination of factors, though the paucity of substantive data has precluded comprehensive analysis. Many people have argued that the recent spate of flood control projects has had a significant impact on fisheries resources. During the past few years, over 150 flood control projects have been implemented and additional projects are being planned. Not only do the embankments that are components of such projects interfere with natural recruitment and dispersal of inland fish stocks over the floodplain, they also disrupt fish and freshwater shrimp migratory patterns. Irrigation barrages in rivers similarly disrupt migratory movements of fish and shrimp. In addition, the increased use of low lift pumps for irrigation and drainage of surface water can contribute to a decline in fish stocks. It is estimated that the loss of one hectare of floodplain causes a reduction of 37-55 kg. in annual fish production.

The direct contamination of aquatic systems by industry is widespread and a source of considerable concern. Tannery, urea, paper, pulp, newsprint, and jute mills are releasing untreated waste directly into rivers and water bodies. Among the pollutants known to be discharged are mercury, lead, chromium, arsenic, and iron. Even at relatively low concentrations, these pollutants are harmful to aquatic fauna. The biological oxygen demand created by concentrated sewage outfalls from densely populated areas is another source of water quality deterioration that adversely affects fish production. Vigorous efforts are needed to check further declines in the productivity of inland fisheries, stemming from over-fishing, environmental pollution, and poorly designed flood control, irrigation and drainage and infrastructure development projects.

Agricultural diversity. Bangladesh has a rich diversity of agricultural genetic resources. Its crop germplasm is important domestically as well as internationally. Approximately 32 percent of the rice planted is made up of modern varieties; the remainder is traditional and improved traditional varieties. Some 10,000 traditional varieties of rice are currently planted in Bangladesh. Timely action must be taken in light of apparent rates of depletion since Bangladesh's current capacity to conserve germplasm is limited. Physical ex situ germplasm conservation facilities for rice are good, but the system for crop germplasm conservation, evaluation, and utilization is weak. Institutional connections with the International Rice Research Institute (IRRI) located in the Philippines serve to ensure that rice germplasm is collected and protected ex situ for global use. There are no in situ reserves to protect wild rices or other crop relatives. Reliable germplasm banks for ex situ conservation are expensive to maintain and will require long-term commitment of staff and funds from the Government of Bangladesh if they are to merit investment.

Conservation of biodiversity faces severe constraints in Bangladesh. The political economy affects biodiversity in many negative ways at present. The subsistence needs of millions of citizens for fuelwood, fish, and cash income (a need that increases exponentially with continuing population growth), coupled with a traditional view that biological resources are free for exploitation, create a local political climate inimical to sustainable development of natural resources and conservation of biological diversity. Nonetheless, policy reform, commitment to policy implementation, improved legislation, financial commitments to sound management of natural resources, and strengthened institutions may still be able to turn the tide of (forestry and) biodiversity depletion in Bangladesh.

## 2.2 Tropical Forest Resources

Background and trends. Actual forest cover in Bangladesh is approximately 1 million ha, or six percent of the total land area, representing a reduction of more than 50 percent over the past 20 years. Consequently, Bangladesh has less than 0.02 ha of forest land per person, one of the lowest such ratios in the world.

Estimates of fuelwood production are highly variable, due to the need to account for undocumented production from illegal logging and subsistence users. In 1981, the total fuelwood production was estimated to be 4 million tons (approximately 6 million m<sup>3</sup>). 54% of the fuelwood produced in 1981 was consumed by urban households, 20% by brick-burning kilns, 18% by rural households, and 8% by other industries. Since that time, fuelwood use by urban households has reportedly declined, resulting from increased access to electricity and gas, and fuelwood use for brick-burning has risen to about 40% of total fuelwood consumption. This abrupt rise has resulted from a sharply increasing demand for bricks needed for construction of buildings and, to a lesser extent, for roads.

Fuelwood is the major forest product in Bangladesh; yet, compared to rural areas of other countries in the region, fuelwood use per household is very low (2.7 cft per person, a 50% decline since 1955, compared to 20 cft per person in Nepal). Furniture-making, construction, brickfields, urban users, and wood-based industries compete with rural households for available wood. According to a UNDP/FAO study, if current trends continue, annual fuelwood availability will be 0.7 cft per person by the year 2000.

This low rate of consumption reflects the current scarcity of fuelwood and a substantial unmet demand which people have been forced to meet with fuelwood substitutes: crop residues, cow dung and lower quality biomass fuels such as leaves, twigs, litter from the forest floor, roadside weeds, and other material which can be scavenged. Some of these residues would be better used for compost or livestock fodder. Additionally, 34% of the cow dung produced is used as fuel instead of being used to replenish soil organic matter. As a result of reduced agricultural residues from high yield variety rice, rural households will be further pressed to find sufficient biomass fuels to meet their basic needs.

The growing gap between supply and demand of forest products is exacerbated by the scarcity of trees in densely settled rural and urban areas where demand is concentrated, and by the poor stocking of existing forest lands. A surprisingly large amount of land which could support a denser cover of trees has yet to be replanted or targeted for agroforestry

activities. Additionally, forested lands, although overexploited, are not being utilized to their fullest because of a failure to effectively regenerate, protect, and manage them intensively on a sustained yield basis.

Natural forests. Production from natural forests is primarily derived from the Sundarbans mangrove forests which provide fuelwood, timber, wood fiber, and a host of forest products for local industries. It is estimated that at least 500,000 - 600,000 people directly benefit from employment related to forest products from the Sunderbans. Many additional thousands of jobs relate to the processing, manufacturing, retailing and transport of finished products based on these resources and are indirectly dependent on the Sundarbans (ESCAP).

Public forestry. Most of the forest resources outside the Sundarbans are plantations on public lands managed by the Forest Department or other national/local government agencies. Community forestry is underutilized as an economically viable means for re-establishing and managing public forests, despite the fact that a substantial part of the "forest lands" are minimally forested. Currently, common management practices include clear-felling of enriched natural forest or teak plantations followed by replanting with exotic species, such as eucalyptus and other fast-growing species. Establishment of these fast growing trees has often been poor, resulting in low productivity.

The clear-felling policy and plantation operations neglected the need to preserve indigenous tree species for maintenance of dependent wildlife or to protect fragile sites. Too little attention seems to have been given to assessing the needs and interests of the surrounding communities and to providing for their continued (and sustainable, managed) use of the natural forests.

Government policies and regulations directly contribute to deforestation and declining productivity. Government-instituted bans on forest production fail to curb widespread illicit felling and actually exacerbate the problem. The extreme underpricing and inefficient use of wood products sold to government-owned industries is also a major factor in the mismanagement of forest resources. Through an antiquated system of royalties, the government provides enormous subsidies to industrial consumers (many of whom are state-owned as well) and no incentives for increased efficiency, leaving individual consumers with up to hundred-fold higher prices in the open market for basic materials.

Homestead forests. 83% of all rural households have homestead gardens. Homestead forests produced 78% of the fuelwood for rural areas with less than 300,000 ha. The low productivity, poor management, and underutilization of Forest Department



### 3.1 Policy Reforms

- o Increase the use of indigenous species for reforestation. Conduct an immediate comprehensive assessment of the impact of clearfelling/plantation operations, with a view towards adopting a more sustainable system which is ecologically and economically sound.
- o Remove restrictions on the use of natural gas for brick-making and, thereby, reduce the stress on fuelwood resources. Also, reduce fuelwood demand by making the use of alternative energy sources an attractive option.
- o Bring prices of timber and other forest products harvested from classified forest lands in line with market prices.
- o Encourage private sector and community-based initiatives in homestead forestry by simplifying or eliminating controls on the harvesting and transport of privately grown wood.
- o A moratorium on the cutting of the inland sal forests should be lifted, and negotiations between the government and various intermediary organizations (NGOs and others) allied with the local communities should be concluded in favor of long-term agreements for the distribution of benefits from forest management operations.
- o A moratorium on new wood or fiber using industries.
- o Integrate wildlife management with forest management
- o Promote adoption of a management plan that adequately accounts for current use and status of the Sundarbans. This plan could build on the ODA 1985 draft management plan, IUCN plan (1983), and Forest Department plans.
- o Develop appropriate methods of national income accounting that include the costs of resource depletion.

#### Biodiversity:

- o Reform the system of yearly auctioning of fishery leases to encourage sustainable production.

### 3.2 Pollution

- o Protect water resources against pollution from agricultural chemicals and from industrial and municipal sources.
- o Provide technical assistance and increase the access of the private sector to pollution control and abatement technologies.

- o Support the development and implementation of locally adapted Integrated Pest Management systems to reduce use of pesticides that have a negative impact on biodiversity.

### 3.3 Training/Education/Information/Public Awareness

- o Increase public awareness through the media and classroom programs.
- o Support institutions to research and disseminate information about assisted natural regeneration on deforested lands.
- o Develop an in-country capability in conducting environmental assessments.
- o Develop the capacity to accurately monitor the status of forest cover. Support the involvement of NGOs in the plan development process and build the capacity of these NGOs to continue data collection and monitoring during the implementation phase.
- o Establish a depository on "neutral" ground for biodiversity, tropical forestry, and other natural resource data which can be collected and made available to researchers and the public. Linkage of this information with a GIS system, containing data on ongoing and planned development projects, would facilitate action regarding biodiversity/tropical forest impact assessment and mitigation.
- o Identify and establish appropriate economic and policy incentives to encourage tropical forest and biodiversity conservation. Carry out economic analyses to document the value of forest production, market trends, and supply and demand levels.
- o Increase the capacity of government, NGOs and private sector to manage wildlife and forests through training.
- o Make full use of the opportunities presented by the preparation of a National Conservation Strategy, Forestry Master Plan, and Coastal Resources Management Plan, to reform policies, reorient programs, and otherwise increase the sustainability of sector development strategies. Ensure that NGOs play an active role in developing and implementing these plans.
- o Increase public awareness about the values of tropical forests and biodiversity, and how it is managed. Build the capacity of NGOs to carry out public education activities at a local level.

## Biodiversity:

- o Inventory and monitor the terrestrial and aquatic species and habitats of Bangladesh. Regional surveys are particularly needed. Facilitate taxonomic, life history, and ecological studies of the rich diversity of fish species. Gather data on productivity of open-catch fisheries and productivity of aquaculture mitigations several years after they have been instituted. Support and develop the capacity of Bangladeshi institutions and NGOs to carry out this research.
- o Assess requirements needed to strengthen protected areas at Teknaf and Pablakhali.
- o Strengthen national capabilities in germplasm conservation and evaluation. This will also enhance Bangladesh's opportunity to participate in a regional germplasm conservation network. Investigate options for a regional network.
- o Work out plan for long term maintenance of gene bank facilities already in place. This will depend on coordination between the various institutions involved in genetic resource conservation.
- o Continue efforts with the survey of flora and fauna initiated by the Herbarium, Botanical Garden, and the University of Dhaka Zoology Department.

#### 4. Action Plan for USAID/Dhaka Support for Tropical Forests and Biodiversity

To adequately address the critical needs and important issues related to conserving tropical forests and biodiversity in which USAID has a comparative advantage, a two-phase approach is proposed. In the short term (1-2 years), a number of initiatives should be taken to reduce further environmental degradation, and to develop the technical skills, information base and institutional capacity needed to move forward with a sustainable development agenda. In the medium and longer term (3-10 years), additional support would be targeted to institutional strengthening and to implement programs in designated priority areas. In both the short and longer term, a firm and sustained commitment to a steady reduction in fertility is needed to sustain progress in natural resource management and environmental conservation.

Short Term Priorities (1-2 years):

1. Reduce further degradation of critically important natural resources and expand efforts to improve the management of natural resources:

1.1 Through direct project support, sustain and reinforce the political support for reduction in fertility; strengthen population policies to enhance program implementation; and broaden the base of support provided by all donors to increase contraceptive prevalence and reduce fertility rates, with particular attention given to those areas which have demonstrated the greatest returns on investment.

1.2 Use Title III local currency to support policy reforms needed to promote the sustainable and efficient use of natural resources, such as the encouragement of the use of natural gas in brick-burning, the removal of artificially low stumpage fees for timber from government forest reserves and other disincentives for efficient use of forest products.

1.3 Provide greater incentives for improved waste treatment by private enterprises through the MIDAS and Industrial Promotion Projects, and support measures aimed at increasing the accountability of the private sector for negative environmental impacts.

1.4 Continue to support soil fertility maintenance, renewal of soil organic matter, integrated cropping systems and development of sustainable livelihoods within the context of agroecosystem analysis, farming systems research and agricultural extension programs through the Agriculture Research Project.

1.5 Support private-sector reforestation and community-based management and use of forest lands so as to promote tree-planting on underutilized or vacant lands, the protection and regeneration of the remaining sal forests, and the development of multi-purpose homestead gardens/forests by local communities and the rural poor through the Private Rural Initiatives Project (PRIP).

1.6 Provide training and other support needed through the PRIP and Development Management Training (DMT) Projects to enable NGOs and the private sector expand their role, in cooperation with government programs, in the reclamation and rehabilitation of degraded public lands, sustainable agriculture, aquaculture and fisheries management, environmentally sound industrial development, and the use and marketing of products derived from renewable natural resources.

1.7 Increase access of the private sector to **pollution control and abatement technologies**, and support programs aimed at building awareness within the private sector of the need for more environmentally benign technologies through follow-up workshops to the ENRA and through limited technical assistance provided through the Technical Resources II Project (TRP) or other TA mechanism; **strengthen the assessment and enforcement capability** of agencies charged with control of industrial effluents, and other sources of air and water pollution and solid waste through the development of in-country training programs (DMT).

1.8 Make greater use of Title II food aid to **stimulate and support improved natural resources management**, especially by the rural poor who are dependent on open-access resources vulnerable to overuse and depletion, and among rural communities with an interest in shared management of publicly controlled natural resources.

2. Support the development of **technical skills, information base and institutional capacity** needed for improved analysis of tradeoffs and resolution of competing claims on the use of natural resources:

2.1 Support the **clarification of responsibilities and resolution of conflicting mandates** among key government agencies with a role to play in environmental impact assessment, land use planning, and other areas of natural resources management through our follow-up workshops to the ENRA and through our leadership in the local consultative group on environment; encourage definition of realistic and appropriate roles for each of these government agencies, with due regard to the potential complementary and supportive roles that can be played by institutions in the private, non-governmental, and academic sectors and by the media.

2.2 Provide short term **training and technical assistance** through various projects in environmental economics, economic analysis of natural resource management and environmental conservation, and in assessment of sustainability issues in economic development planning, including the economic impact and environmental costs of interactions among sectoral development programs, such as flood control, irrigated agriculture, fisheries, energy sector development and rural infrastructure development (Development Management Training, Flood Action Plan).

2.3 Support a more in-depth **assessment of the extent and economic costs** (in terms of crop damage, health impairment, reduced resource productivity, loss of biodiversity, etc.) and **ecological consequences** of industrial pollution, agricultural runoff and pesticide use, sewage and human settlement wastes, and other sources of **pollution and environmental degradation** (fostered through follow-up workshops to ENRA).

2.4 Continue to support BARC and other organizations carrying out research and policy analysis related to sustainable development, changing land use, farming systems, and environmental and natural resource issues; particular attention should be given to the sustainability and overall (net) economic benefits of alternative agricultural development strategies, especially as regards the use of water resources and biomass energy resources, the maintenance of soil fertility (Water Resources Management Project, Agriculture Research Project).

2.5 Support environmental investigative reporting, public debate and press coverage of natural resource management issues, environmental education, and applied research and analysis related to sustainable development by universities, NGOs and the private sector as well as interested government agencies; these actions and related initiatives in information dissemination and education could be facilitated by the establishment of an independent clearing house and depository for information on environment and sustainable development issues, including data generated by donor-assisted projects, which is accessible to all interested parties (Development Management Training, Private Rural Initiatives, Technical Resources II, and Environmental Resources Projects).

2.6 Make full use of the opportunities presented by the preparation of a **National Conservation Strategy and Forestry Master Plan** to reform policies, reorient programs and otherwise increase the sustainability of sector development strategies; these planning and policy formulation exercises should also be used to improve the database and analysis related to changes in the productivity of such resources as homestead and natural forests, fisheries, and arable land through follow-up workshops to the ENRA and Title III local currency support.

2.7 Mainstream in the overall Mission project portfolio efforts to describe and analyze the linkages between people's well-being, fertility choices, land use pressures, and changes in environmental quality and in the productivity of natural resources; this information should be a standard feature in terms of reference for project evaluations, as appropriate, and be actively disseminated to development planners and to those involved in both natural resource management and population/health programs.

Medium and Long Term Priorities (3-10 years):

3. Continue to build up efforts aimed at institutional strengthening and program support for critical areas of natural resource management and environmental conservation:

3.1 Intensify family planning programs, including services and supplies along with educational and employment efforts targeted at women and designed to influence adoption of family planning, so as to stabilize the population of Bangladesh as soon as feasible.

3.2 Through a new Environmental Resources Project and/or TRP, support development and institutionalization of procedures for screening ongoing and proposed development projects to anticipate and mitigate adverse environmental impacts; the Department of Environment (DoE) and Planning Commission should provide leadership, guidance and technical oversight, but each line agency should also assume increased responsibilities in this area; the Planning Commission should take the lead in assessment of tradeoffs and resolution of inter-sectoral conflicts and for increasing attention given to "sustainability" in development planning and proposed projects.

3.3 Maintain support for training and institution strengthening in environmental monitoring and impact assessment, agroecosystem analysis, land use planning, environmental education, economic analysis of development and natural resource management, and natural resource accounting in national accounts (DMT, TRP, Agriculture Research Projects)

3.4 Incorporate the findings and respond to the recommendations of the environmental studies completed in connection with the Action Plan for Flood Control; support the implementation of the National Water Plan and the Coastal Zone Management Plan.

3.5 Support increased research on ecology, reproductive biology, life cycles and habitat requirements of inland fisheries, with emphasis given to those species which are economically important, significant from the standpoint of biodiversity conservation, and/or highly threatened by overfishing or habitat destruction and degradation, using Title III resources and TRP.

3.6 Support efforts to complete the establishment of a protected areas system and to implement management plans for protected areas, the wildlife management plan for the Sundarbans, the National Conservation Strategy, the Forestry Master Plan, and related action plans developed by the Department of Environment and the Department of Forestry with Title III local currency.

3.7 Under the Agriculture Research Project, support greater efforts in in-situ germplasm conservation for wild and local rice varieties as well as expanded ex situ germplasm conservation facilities for other important crops.

3.8 Through both the Agriculture Research and Environmental Resources Projects, support a comprehensive program to improve procedures for government and private sector oversight of pesticide importation, registration, manufacture and formulation, storage, and retailing that parallels increased investments in agricultural intensification.

## ANNEX B

## KEY DEVELOPMENT INDICATORS AND DATA SETS

<u>INDICATORS</u>	<u>AID/W</u>	<u>USAID</u>
Population (mil)	104.5 (no date) 109.9 (1988)	111.3 (1988) 112.0 (1990)
Population Growth Rate	2.4% (1988)	2.5% (1988)
Population by Age Group	(0-14)43.3 (1988) (15-64)53.7(1988) (65 +) 3.0 (1988)	(0-14)40.7 (1990) (15-60)49.1(1990) (60 +)10.1 (1990)
Contraceptive Prevalence Rate	25.3% (1988)	32.8% (1989)
Total Fertility Rate	5.6 (1988)	4.9 (1989)
GDP Growth Rate	3.8%(1986-88)	3.7% (1980-88) 3.5% (1986-88)
GDP Per Capita Growth Rate	1.4%(1986-88)	1.2% (1980-88) 1.0% (1986-88)
Per Capita GDP	\$160	\$180
Avg. Annual Real Per Capita GNP Growth Rate (%)	0.4 (1965-86)	0.4 (1965-86)
Projected Growth Trend (90-95)	4-6%	4-5%
Projected Per Capita Growth Trend (90-95)	1.5-3.5%	1.5-2.5%
Poverty Incidence	43.9% (1985) 45% (1986)	52% (1988)
National Income Rec'd by Lowest 20% of Population (1982)	6.6%	12%
Per Capita Calorie Supply as % of Requirements	78% (1985)	56.3% (1986) (2,273 kcal base)
Percent of Population w/daily Kcal intake below 2122 (1985/86)	no estimate	51% (rural) 56% (urban)

<u>INDICATORS</u>	<u>AID/W</u>	<u>USAID</u>
Total Investment (%/GDP)	12.0 (1987)	11.8 (1988)
Private Investment (%/GDP)	6.3 (1983)	5.9 (1988/IBRD)
Consumption (%/GDP)	90.0 (1987)	97.2 (1988)
Domestic Savings (%/GDP)	2.0 (1987)	2.6 (1988)
Annual Inflation Rate	8.4% (avg. 1986-88)	11.2 (1982-88) 10.6 (1986-88)
Public Savings Rate (%/GDP)	0.7 (avg.1986-88)	0.7 (1986-88)
Government Budget Expenditures (%/GDP, 1988)	16.5 (1988)	16.5% (1988)
Total Expenditures and Net Lending (\$mil)		
1986	2,548	2,548
1987	3,006	3,006
1988	3,193	3,193
(%/GDP 1986-88)		(16.8)
B u d g e t a r y Deficit/Surplus (\$Millions)		
1986	-1,158	-1,158
1987	-1,455	-1,455
1988	-1,466	-1,466
(%/GDP 1986-88)		(-7.8%)
Bank Discount Rate (real)	2.14% (avg.1986-88)	2.25% (1988)
Bank Deposit Rate (real)	3.29% (avg.1986-88)	3.50% (1988)
Bank Lending Rate (real)	6.36% (avg.1986-88)	6.00% (1988)
Interest Rate Spread	3.07% (avg.1986-88)	3.25% (1989)
Debt/GNP (%)	52.1% (1988)	52.0% (1988)

<u>INDICATORS</u>	<u>AID/W</u>	<u>USAID</u>
External Public Debt (%/GDP) (1988)	46.3	46.3
Service Payments on External Debt (1988)	\$274 million	\$274 million
Debt Service Ratio	21.2 (1988) 23.4 (1988)	23.4 (1988)
Reserves (months of imports)	2.9 (1987)	3.3 (1988)
Exports (%/GDP)	6.0 (1987)	6.4 (1988)
Imports (%/GDP)	15.0 (1987)	15.5 (1988)
Export Growth (%)	6.2 (1980-87)	7.7 (1981-88)
Import Growth (%)	2.3 (1980-87)	3.9 (1981-88)
Share of food to total imports (%)	16.0 (1987)	21.0 (1988)
Share of manufactures to total imports (%)	87 (1987)	80 (1988)
Ag Trade Balance (\$mil)	-\$446 mil. (1987)	-\$446 mil. (1987)
B r o a d M o n e y (M2)(%/GDP)	24.0 (1985)	19.0 (1988)
Bank Credit to Pvt. Sector as share of total Bank system Credit	53.0 (1985)	64.2 (1988)
GDP Shares:		
Agriculture	47% (1987)	46% (1988)
Industry	13% (1987)	13.6% (1988)
Services	39% (1987)	40.4% (1988)
Ag Output (%/GDP)	50 (1985) 47 (1987) 36 (2000)	46% (1988) 40% (2000)
Non Ag Output (%/GDP)	50 (1985) 53 (1987) 64 (2000)	53.0% (1988) 60.0% (2000)

<u>INDICATORS</u>	<u>AID/W</u>	<u>USAID</u>
Ag Labor as % of Total Labor Force	72 (1985) 70 (1980)	58 (1988)
Growth rate of Ag Labor force	1.9% (1935-2000)	1.5% (1988-2000)
L a b o r F o r c e Participation as % of Working Age Population	29 (1985)	30.2 (1985 Labor Force Survey/BBS)
L a b o r F o r c e Participation Rate	no estimates	
Male		78.2 (1985)
Female		8.2 (1985)
Total		46.9 (1985)
Dependency Ratio		
1985	1.00	91.3 (1986)
1990	0.90	
1995	0.86	
2000	0.83	
Population living in urban areas (%)	no estimate	11.9 (1985) 13.6 (1990 est.)
Infant Mortality (per 1000)	120 (1987)	118 (1988)
Infant Deaths in First year of Life (per 1000)	135 (1988)	
Literacy Rate(%)		
Male	43 (1985)	39.7 (1989)
Female	22 (1985)	18.0 (1985)
Male/Female Literacy Gap	21	21.7
Enrollment Rates		
Primary	58.1 (1983) (66.3 male) (41.0 female)	84.0 (1987) (-) (-)
Secondary	19.8 (1981) (31.0 male) (7.7 female)	24.2 (1987) (-) (-)
Post-Secondary	2.3 (1980) (3.8 male) (0.7 female)	3.3 (1987) (-) (-)

<u>INDICATORS</u>	<u>AID/W</u>	<u>USAID</u>
Life Expectancy		
Total	51 (1988)	51.0 (1988)
Male	52.2 (1988)	52.2 (1988)
Female	49.8 (1988)	49.8 (1988)
% of children immunized against:		
TB	14 (1987)	26 (1988)
Diphtheria	9 (1987)	16 (1988)
Measles	6 (1987)	13 (1988)
Polio	8 (1987)	16 (1988)
Population with reasonable access to safe water supply	40% (1988)	46% (1987)

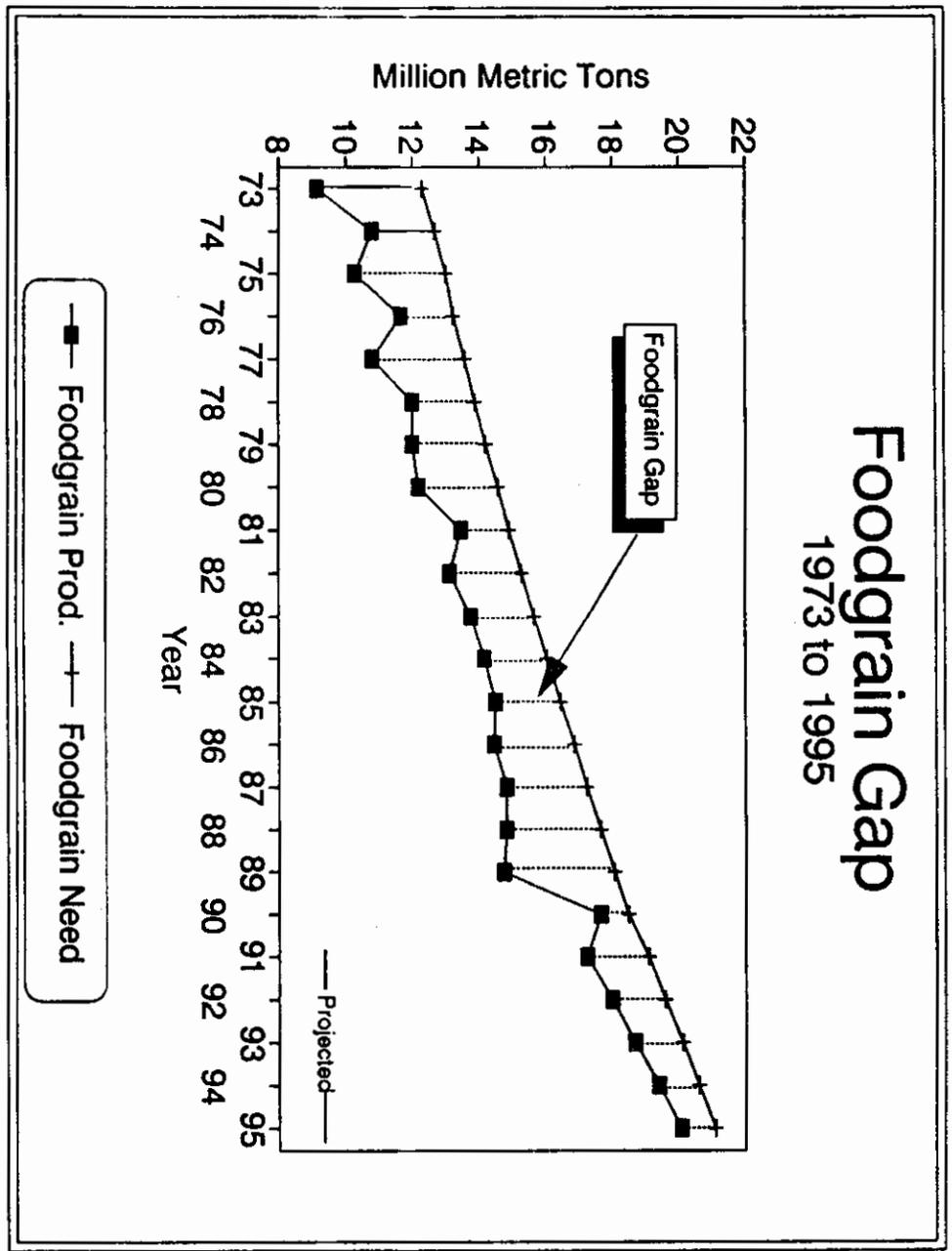
Sources for USAID Data Sets: World Bank. Bangladesh: Recent Economic Developments and Short-Term Prospects. (Report No. 7596-BD, March 13, 1989); Bangladesh Bureau of Statistics. Statistical Pocket Book of Bangladesh, 1989; USAID. Contraceptive Prevalence Survey, 1989; Bangladesh Bank monthly and quarterly reports; UNICEF. An Analysis of the Situation of Children in Bangladesh (1989); USAID/Dhaka. The Agricultural Sector: A Database (1989).

## FOODGRAIN GAP ANALYSIS, 1973 -1995

Year	FOOD PRODUCTION ----Million MTs----		POPULATION Millions	FOODGRAIN GAP ----Million MTs----	
	Total Grains (2)	Avail. Grains (3=2-(2*0.1))		Requirement @16 oz/day (5=4*req)	Gap (6=3-5)
(1)	(2)	(3=2-(2*0.1))	(4)	(5=4*req)	(6=3-5)
1973	10.18	9.16	74.27	12.32	3.16
1974	12.02	10.82	76.40	12.67	1.85
1975	11.40	10.26	78.46	13.02	2.76
1976	12.98	11.68	79.90	13.25	1.57
1977	12.01	10.81	81.80	13.57	2.76
1978	13.32	11.99	83.70	13.89	1.90
1979	13.34	12.01	85.60	14.20	2.19
1980	13.56	12.21	87.70	14.55	2.34
1981	14.98	13.48	89.95	14.92	1.44
1982	14.60	13.14	92.16	15.29	2.15
1983	15.31	13.78	94.43	15.66	1.88
1984	15.73	14.16	96.75	16.05	1.89
1985	16.09	14.48	99.13	16.44	1.96
1986	16.07	14.46	101.57	16.85	2.39
1987	16.50	14.85	103.94	17.24	2.39
1988	16.46	14.81	106.37	17.65	2.84
1989	16.39	14.75	108.86	18.06	3.31
1990	19.62	17.66	111.40	18.48	0.82
1991	19.15	17.24	115.10	19.09	1.86
1992	20.00	18.00	118.04	19.58	1.58
1993	20.75	18.68	121.06	20.08	1.40
1994	21.52	19.37	124.15	20.60	1.23
1995	22.30	20.07	127.16	21.10	1.03

Source: The Agricultural Sector in Bangladesh: A Database (USAID, July 1989)  
Population projections from OPH/USAID/Dhaka

# Foodgrain Gap 1973 to 1995



Feb 5 1990

## BANGLADESH POPULATION PROJECTIONS

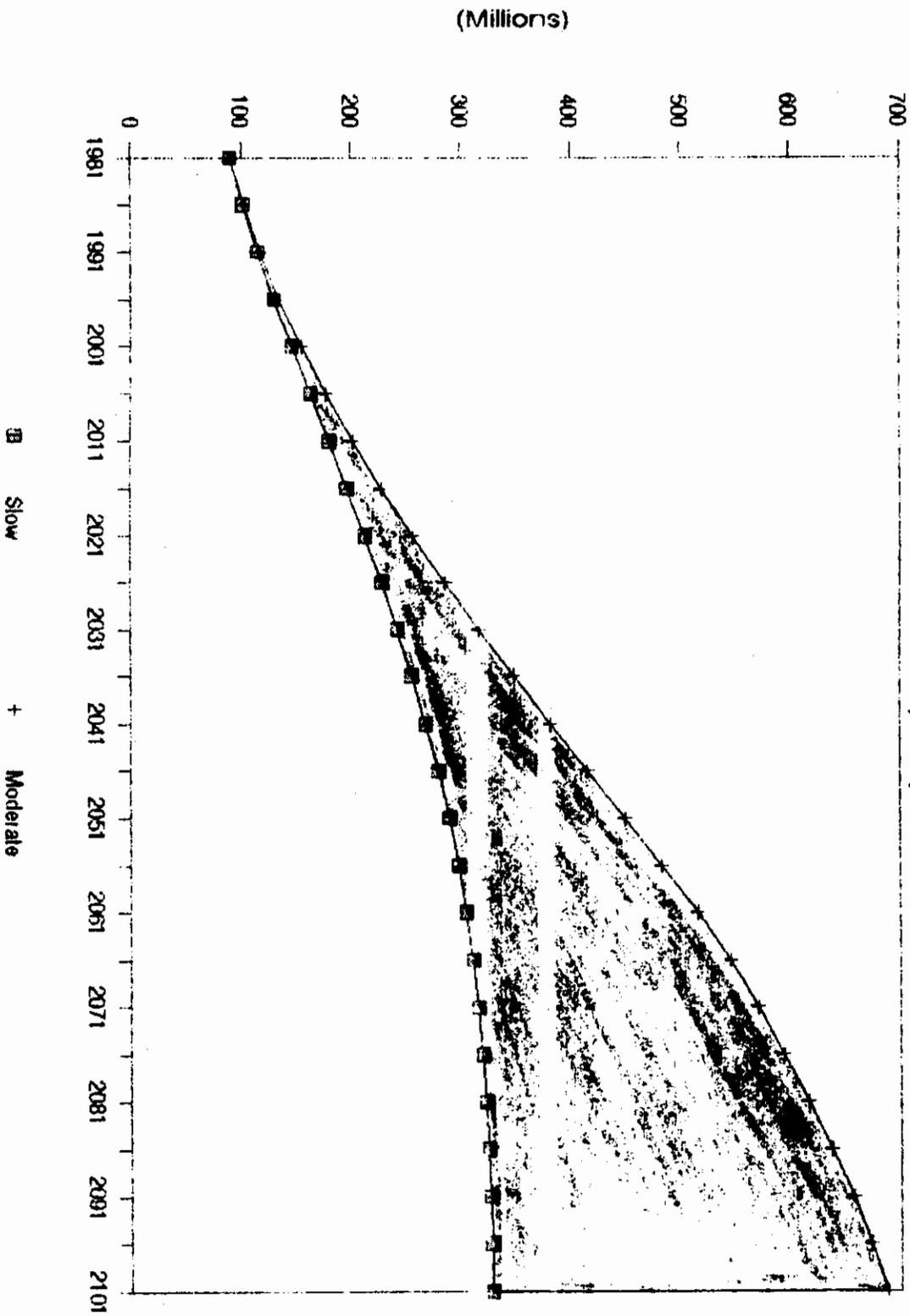
Incorporating two assumptions about the pace and extent  
of fertility decline

Year	*** Population (in '000s) ***			5-yr interval	Assumed TFRs	
	Moderate	Slow	Difference		Moderate	Slow
1981	89,912	89,912	0	1981-	5.7	5.7
1986	101,644	102,618	974	'86-	5.2	5.2
1991	115,101	117,478	2,377	'91-	4.7	4.9
1996	130,424	135,013	4,589	'96-	4.2	4.8
2001	146,866	155,425	8,559	'01-	3.8	4.6
2006	163,626	177,664	14,038	'06-	3.5	4.5
2011	180,263	202,129	21,866	'11-	3.1	4.3
2016	196,723	228,359	31,636	'16-	2.8	4.1
2021	212,723	256,479	43,756	'21-	2.6	3.9
2026	227,994	286,424	58,430	'26-	2.3	3.6
2031	242,068	316,817	74,749	'31-	2.2	3.5
2036	255,519	349,221	93,702	'36-	2.2	3.3
2041	268,264	381,955	113,691	'41-	2.2	3.2
2046	280,025	415,712	135,687	'46-	2.2	3.1
2051	290,012	449,927	159,915	'51-	2.2	2.9
2056	298,298	482,715	184,417	'56-	2.2	2.8
2061	305,266	515,481	210,215	'61-	2.2	2.6
2066	311,198	545,875	234,677	'66-	2.2	2.3
2071	316,082	571,131	255,049	'71-	2.2	2.2
2076	319,876	594,304	274,428	'76-	2.2	2.2
2081	322,685	616,817	294,132	'81-	2.2	2.2
2086	324,745	637,991	313,246	'86-	2.2	2.2
2091	326,292	656,970	330,678	'91-	2.2	2.2
2096	327,511	673,463	345,952	'96-	2.2	2.2
2101	328,548	687,698	359,150	2101-	2.2	2.2
1995	127,206	129,833	2,627	1995	4.3	4.8

Population Projections

# POPULATION PROJECTIONS

Under different fertility assumptions



■ Slow + Moderate

## ANNEX E

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