



# **OUTLINE PERSPECTIVE PLAN OF BANGLADESH 2010-2021 (MAKING VISION 2021 A REALITY)**

**General Economics Division  
Planning Commission  
Government of The People's Republic of Bangladesh**

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## List of Abbreviation

|         |  |
|---------|--|
| ACC     | Anti-Corruption Commission   |
| ADA     | Anti-Dumping Agreement   |
| ADP     | Annual Development Programme   |
| AfT     | Aid for Trade  |
| AIDS    | Acquired Immune Deficiency Syndrome  |
| ANC     | After Natal Care   |
| APTA    | Asia Pacific Trade Agreement   |
| ARI     | Acute Respiratory Track Infection  |
| BB      | Bangladesh Bank  |
| BBS     | Bangladesh Bureau of Statistics  |
| BCCSAP  | Bangladesh Climate Change Strategy and Action Plan                             |
| BCM     | Billion Cubic Meter  |
| BDHS    | Bangladesh Household Survey  |
| BG      | Broad Gauge  |
| BIMSTEC | Bay of Bengal Initiative for Multi-sectoral Technical and Economic Cooperation |
| BIWTA   | Bangladesh Inland Water Transport Authority                                    |
| BJMS    | Bangladesh Jatiyo Mohila Sangstha  |
| BMD     | Bangladesh Meteorological Department   |
| BPFA    | Beijing Platform of Action   |
| BPO     | Business Process Outsourcing   |
| BR      | Bangladesh Railway   |
| BRT     | Bus Rapid Transport  |
| BSIC    | Bangladesh Standard Industrial Classification                                  |
| BSTI    | Bangladesh Standards and Testing Institution                                   |
| BTTB    | Bangladesh Telephone and Telegraph Board                                       |
| CAG     | Comptroller and Audit General  |
| CBAs    | Collective Bargaining Agents   |
| CBN     | Costs of Basic Need  |
| CDD     | Calcium Deficiency Disorders   |
| CDM     | Clean Development Mechanism  |
| CEDAW   | Convention on the Elimination of all forms of Discrimination against Women     |
| cft     | Cubic Feet   |
| CNG     | Compressed Natural Gas   |
| CPR     | Contraceptive Prevalence Rate  |
| DCI     | Daily Calorie Intake   |
| DEMU    | Diesel Electric Multiple Unit  |
| DFQF    | Duty-free Quota-free   |
| DHMU    | Diesel Hydraulic Multiple Unit   |
| DOE     | Department of Environment  |
| DRO     | Disaster Relief Operation  |
| ECA     | Environment Conservation Act   |
| ECE     | Early Child Education  |
| ECNEC   | Executive Committee of National Economic Council                               |
| ECR     | Environment Conservation Rules   |
| EMS     | Express Mail Service   |
| EU      | European Union   |
| FA      | Field Administration   |
| FDI     | Foreign Direct Investment  |
| FFWC    | Flood Forecasting and Warning Centre   |
| FP      | Family Planning  |
| FWC     | Family Welfare Centre  |

|         |   |
|---------|---|
| FY-2009 | Fiscal Year 2009                                  |
| GATT    | General Agreement on Tariff and Trade             |
| GBM     | Ganges-Brahmaputra-Meghna                         |
| GDA     | Ganges Dependent Area                             |
| GDP     | Gross Domestic Product                            |
| GEP     | Guaranteed Express Service                        |
| GNI     | Gross National Income                             |
| GOB     | Government of Bangladesh                          |
| GO      | Government Organisation                           |
| HCR     | Head Count Ratio                                  |
| HIV     | Human Immune Virus                                |
| HSC     | Higher Secondary Certificate                      |
| HYV     | High Yielding Varieties                           |
| ICD     | Inland Container Depot                            |
| ICT     | Information and Communication Technology          |
| ICZM    | Integrated Coastal Zone Management                |
| ID      | Iron Deficiency                                   |
| IDA     | Iron Deficiency Anemia                            |
| IDD     | Iodine Deficiency Disorders                       |
| IMED    | Implementation Monitoring and Evaluation Division |
| IMR     | Infant Mortality Rate                             |
| IMTP    | Multi-modal Transport Policy                      |
| IPCC    | Intergovernmental Panel on Climate Change         |
| IPO     | Initial Public Officers                           |
| IPP     | Independent Power producers                       |
| IRLP    | Indian River Linking Project                      |
| ISP     | Internet Service Providers                        |
| IT      | Information Technology                            |
| IWT     | Inland Water Transport                            |
| IWTA    | Inland Water Transport Authority                  |
| kg/d    | Kilogram Per Day                                  |
| LDC     | Least Development Country                         |
| LGED    | Local Government Engineering Department           |
| LGD     | Local Government Division                         |
| LGI     | Local Government Institutions                     |
| LMI     | Lower Middle Income                               |
| LNG     | Liquefied Natural Gas                             |
| MDG     | Millennium Development Goal                       |
| MFI     | Micro-Financing Institution                       |
| MG      | Meter Gauge                                       |
| MP      | Member of Parliament                              |
| MPO     | Money Payment Order                               |
| MW      | Mega watt   |
| NAFTA   | North Atlantic Free Trade Agreement               |
| NAMA    | Non-Agricultural Market Access                    |
| NEC     | National Economic Council                         |
| NFE     | Non-Formal Education                              |
| NGO     | Non Government Organization                       |
| NLTP    | National Land Transport Policy                    |
| NRR     | Net Reproduction Rate                             |
| NWMP    | National Water Management Plan                    |
| OMS     | Open Market Sales                                 |
| OPP     | Outline of Perspective Plan                       |
| PAC     | Public Accounts Committee                         |

|         |   |
|---------|---|
| PC      | Planning Commission   |
| PDB     | Power Development Board   |
| PEM     | Protein-energy Malnutrition                                     |
| PIL     | Public interest litigations                                     |
| PMO     | Prime Minister's Office   |
| PNC     | Post Natal Care   |
| PPP     | Public – Private Partnership                                    |
| PPMO    | Perspective Plan Management Office                              |
| PRSP    | Poverty Reduction Strategy Paper                                |
| PSMP    | Power System Master Plan  |
| PTA     | Preferential Trade Agreements                                   |
| R&D     | Research and Development  |
| RDRS    | Rangpur-Dinajpur Rural Service                                  |
| RHD     | Roads and Highways Department                                   |
| RMP     | Road Master Plan  |
| RNFA    | Rural Non Farm Activities                                       |
| RoB     | Rules of Business   |
| RoO     | Rules of Origin   |
| RPP     | Rental Power Plants   |
| RRC     | Regulatory Reforms Commission                                   |
| SAARC   | South Asian Association for Regional Cooperation                |
| SAFTA   | South Asia Free Trade Agreement                                 |
| SBA     | Skilled Birth Attendant   |
| SFDF    | Small Farmers' Development Foundation                           |
| SME     | Small Medium Enterprise   |
| SNP     | Safety Net Programme  |
| SPARRSO | Space Research and Remote Sensing Organisation                  |
| SPP     | Small Power Plants  |
| S&T     | Science and Technology  |
| SRI     | System of Rice Intensification                                  |
| SSC     | Secondary School Certificate                                    |
| STD     | Sexually Transmitted Disease                                    |
| STEP    | Science and Technology Entrepreneur Park                        |
| STP     | Strategic Transport Plan  |
| TAR     | Trans Asian railway   |
| TB      | Tuberculosis  |
| TBA     | Traditional Birth Attendants                                    |
| TFR     | Total Fertility Rate  |
| TV      | Television  |
| TVET    | Technical and Vocational Education and Training                 |
| U.S. \$ | United States Dollar  |
| U5MR    | Under-Five Mortality Rate                                       |
| UHC     | Upazila Health Complex  |
| UMI     | Upper Middle Income   |
| UN      | United Nations  |
| UNDP    | United Nations Development Programme                            |
| UNESCO  | United Nations Educational Scientific and Cultural Organization |
| UNO     | Upazila Nirbahi Officer   |
| USA     | United States of America  |
| USF     | Universal Service Fund  |
| VCF     | Venture Capital Fund  |
| VAID    | Village Agriculture and Industrial Development                  |
| VAT     | Value Added Tax   |
| VGD     | Vulnerable Group Development                                    |



|       |   |
|-------|---|
| VOIP  | Voice Over Internet Protocol                    |
| VSAT  | Very Small Aperture Terminals                   |
| VTE   | Vocational and Technical Education              |
| WARPO | Water Resources Planning Organization           |
| WASA  | Water Supply and Sewerage Authority             |
| WHO   | World Health Organization                       |
| WTO   | World Trade Organization                        |
| WID   | Women in Development                            |
| WiMax | Worldwide Interoperability for Microwave Access |
| YGM   | Yield Gap Minimization                          |

# PREAMBLE

## The Setting

The Outline Perspective Plan (OPP) 2010-2021 fulfils a long felt need of the country. In the past there were attempts to formulate Perspective Plan but without success. The eventful dawn of the twenty first century with the deepening of globalization, challenges of realizing Millennium Development Goals (MDGs), the threat of global warming and environmental degradation and economic meltdown of crisis proportions comparable to the great depression coupled with and yet ever fundamentalism and terrorism threw new challenges to the world community including Bangladesh. At home, confronted with deteriorated investment climate, increased inflation, unemployment and poverty prior to the restoration of democratic process, the question of formulation of a Perspective Plan got a noble start after the present elected government came into power. To this end decision was taken in a meeting held in April 2009 in the Planning Ministry with the presence of the Finance Minister and Prime Minister's Adviser of Economic Affairs to formulate the Perspective Plan 2010-2021 which will provide opportunity to frame two Five Year Plans within its ambit.

## Development Perspective

The Outline Perspective Plan 2010-2021 is a lighthouse to point to the broad directions of the envisioned development perspective. The constitution of Bangladesh particularly the articles concerning people's rights and provisions is the basis, and the government's development vision 2021 contained in the election manifesto of the Awami League and mandated by the people form the cornerstone of the Perspective Plan. Consultations at the national, divisional, district and upazila levels with cross-sections of people - farmers, labourers, various ethnic people and other marginalised section of the population, civil society members, administrators and policy makers provided valuable inputs, insights for the development perspective. The development perspective envisages to achieving, in the coming days, a prosperous progressive nation in which food and energy security shall prevail with drastic reduction of poverty and a low level of unemployment. The perspective also includes great strides in human development including health and nutrition, effective population control, progress in all levels of education, primary, secondary and tertiary in addition to commendable improvement in science and technology, along with great achievement in ICT. Infrastructure development will improve integrated multi-modal transport encompassing, railways, roads and inland water transport having connectivity with our neighbours. In other words, the development perspective implies the simultaneous fulfilment of economic and social rights of the people alongside civil and political rights. For this to happen strong links between economic growth on the one hand, and expansion of employment opportunities, reduction of poverty, expansion of democracy and empowerment, consolidation of cultural identity and protection of environment with its freshness for the next generation on the other will be established. Some of the objectives in specific terms are:

- Eliminate illiteracy by 2014
- Attain hundred per cent enrolment in the 12<sup>th</sup> class by 2021 with gender parity addressing the dropout problem at the primary and secondary levels.
- Reduce unemployment rate to 15 per cent by 2021
- Reduce poverty to about 14 per cent and bring down the number of poor people to about 25 million in 2021. Emphasise energy availability to provide per capita energy consumption of about 600 kwh per capita

- Raise per capita income to about \$2000 by 2021
- All the historical monuments/mass graves of martyred war veterans will be preserved, conserved and restored by 2021
- Strengthen information technology to establish a digital Bangladesh

The envisioned policy and institutional environment of the Outline Perspective Plan to achieve the cherished development goals constitutes a set of structural, social, human and physical conditions for which the thrusts for action are:

- **building a secular tolerant liberal progressive democratic state**
- **promoting good governance and curbing corruption**
- **promoting sustainable human development**
- **instituting a prudent macroeconomic policy mix**
- **promoting a favourable industrializations and trade policy regime**
- **addressing globalization and regional cooperation challenges**
- **ensuring adequate supply of electricity and fuel**
- **achieving food security**
- **making available adequate infrastructure**
- **pursuing environmental friendly development and**
- **building a digital Bangladesh**

In other words, the Perspective Plan 2010-2021 is a blue print that advances a more inclusive and holistic picture of development which can be conceived as a balance sheet with two sides: on one side, the basic non-economic pre-requisites of development will balance the macroeconomic, sectoral and international economic considerations with the objective of building a broad-based and strong foundation of the economy. The other side of the balance sheet will be represented by a high standing of the economy with a prosperous progressive nation deeply imbued with the spirit of liberation war and adhered to sustainable human and environment friendly development where food security prevails with drastically reduced poverty and unemployment, among others.

### **Current Strength and Challenges**

It is instructive to assess Bangladeshi's present condition in terms of some parameters of the balance sheet talked about with those of some more advanced countries that are often cited in the development discourses. India, China and Sri-Lanka in South Asia and Thailand, Indonesia and the Philippines in Southeast Asia are among such countries. For the sake of brevity, these along with some others that got currency with the status of middle income countries are referred here.

Of a host of multi-dimensional forces or factors of development only a few are quantifiable. The table contains much fewer than those. Bangladesh's development performances are encouraging: a stable moderate growth performance, strong progress in primary education enrolment and girl's education, noteworthy decline in fertility and infant mortality, success in immunization, improvement in food production and export of garments, resilient disaster management and moderate progress in employment generation and poverty reduction.

Although the success story is encouraging, the development challenges ahead are also daunting. A number of social indicators are still weak: maternal mortality is high, child malnutrition is severe, and presence of arsenic in groundwater is disquieting.

**Table 1: Development Parameters of Bangladesh Relative to Lower Middle Income and Upper Middle Income Countries**

| Items                                    | Bangladesh | LMI countries | UMI countries      |
|--|------------|---------------|--------------------|
| GNI Per Capita (\$)                      | 600        | 1000          | 3700               |
| Unemployment rate (%)                    | 26         | -             | -                  |
| Poverty level                            | 40         | 12            | 13                 |
| Income Distribution (gini-ratio)         | 0.46       | 0.27          | 0.2                |
| Investment GDP ratio                     | 24         | 35            | 40                 |
| Agri. VA per worker (\$)                 | 338        | 513           | 2800               |
| <b>Industrialization</b>                 |            |               |                    |
| Mfg VA %GDP                              | 17         | 24            | 31                 |
| Base                                     | narrow     | diversified   | highly diversified |
| <b>Export</b>                            |            |               |                    |
| Export base                              | narrow     | diversified   | highly diversified |
| Specialization Index (Kwan's) *          |            |               |                    |
| Light Mfg                                | +17        | +70           | +80                |
| Capital goods                            | -094       | -0.50         | +0.70              |
| Child malnutrition                       | 39         | 30            | 6                  |
| Adult literacy (%)                       |            |               |                    |
| Male                                     | 59         | 78            | 89                 |
| Female                                   | 48         | 66            | 87                 |
| Net enrolment                            |            |               |                    |
| Primary                                  | 91         | 90            | 94                 |
| Secondary                                | 44         | 65            | 80                 |
| Infant mortality<br>(per thousand birth) | 47         | 8             | 7                  |
| Maternal mortality                       | 570        | 240           | -                  |
| Paved Road (%)                           | 10         | 48            | 80                 |
| Per capita electricity consumption (kwh) | 146        | 685           | 1677               |
| Mobile Subscribe (per 1000)              | 22         | 28            | 54                 |
| Law and Order scale=1-5                  | 1          | 3             | 3                  |

Note: Per capita income of about \$ 1000 and \$ 3700 are respectively the threshold levels for lower middle income (LMI) and upper middle income (UMI) countries. The data relates mostly to 2007.

\*For Kwan's index -1 and +1 implies no specialization and complete specialization respectively.

On the economic front, deteriorated investment climate, huge nonperforming loans in the public sector banks, low productivity, narrow based and low skill intensive manufacturing and exports, low competitiveness, high unemployment rate and poverty, resource constraint, inadequate transport and port facilities and particularly acute power shortage are major challenges. In addition, weak rule of law and accountability in public services, service delivery, and security for the poor due to poor governance and corruption in various aspects of the public sector and above all, confrontational political practice have been seriously hindering development. Much more progress is desirable and possible. However, experience of the recent past indicates the high potentiality of Bangladesh for the attainment of the development vision of the Perspective Plan. Increased globalizations of markets, capital, knowledge and technology have opened up new opportunities for development at a rapid speed that was unthinkable even in the wildest dream a few generations ago.

## Highlights of Thrusts

The Plan document has been organized in eleven chapters. The preamble is followed by the issues relating to **building a secular tolerant liberal progressive democratic state in chapter 1**. The Plan draws attention to the remarkable equanimity for social and economic development issues. It draws attention to a tolerant and caring society, a credible election process, an effective parliament and parliamentary oversight through Standing Committees, right to information, an independent judiciary, and direct election for women members of parliament and other local government bodies. The other aspects of the chapter deals with safety nets for vulnerable groups, gender equity, promotion of inclusive society encompassing the Adivasis/aboriginals, religious minorities, people with disability, provision of shelter, balanced regional growth, and workers' rights and responsibilities.

Chapter 2 deals with the issues and strategic measures concerning the **promotion of good governance and curbing corruption**. Strengthening government institutions and the rule of law are vital for improving investment climate and social inclusion. Also crucial is transparent and accountable public service for participation of poor people in the pursuit of development. The Plan draws attention to national and international strictures against corruption. It emphasises the pivotal roles of the Planning Commission, NEC/ECNEC, ADP, Comptroller and Auditor General (CAG) and the need to strengthen the institution. Devolution of power to the local bodies is emphasized and recommended.

The need for a social movement against corruption is required. In the area of good governance, ethics and values are sought to be fostered. Measures for moving towards a first- track governance are presented. The role of an independent and powerful Anti-Corruption Commission is stressed.

**The challenges to promoting sustainable human development** and strategies to address the challenges are considered in chapter 3. Sustainable Human Development covers areas such as education and training; health, nutrition and population planning. The recent education policy is also emphasised. Changes from pre-primary through secondary and tertiary education are highlighted. One track education in the secondary level is stressed. Suggestions are placed for improving the atmosphere around education administration. Emphasis has been laid on computer literacy for all. Gender balance at all levels of education received priority. Science and technology development within the framework of a knowledge-based-economy is stressed. The need for technical and vocational education and training for work at home and abroad is marked.

Population planning deserves more attention than hitherto given in the past few years. The contraceptive prevalence rate (CPR) is targeted at 80 per cent. Commensurate measures have to be taken in health and family planning matters including social development. A one child policy needs to be adopted.

In view of the very poor nutritional condition and calorie deficiency, there are acute shortages in protein and micro-nutrients. Providing minimum nutrition to 85 per cent of the population and lifting 85 per cent of the population above the poverty line is targeted in Vision 2021. With the production of fish, vegetables, poultry, and dairy that is being planned, great improvement in nutritional situation could be expected.

**Instituting a prudent macroeconomic policy mix** is the subject matter of chapter 4. The main macroeconomic objectives are achievement of about 10 per cent growth, increase of investment to about 38 per cent, limit annual average inflation rate to about 8 per cent, reduce of unemployment and poverty to about 10 per cent and 14 per cent respectively, and raise per capita income to about \$ 2000 in 2021. For attaining higher growth regime the challenges are to move to a higher productivity and investment regime. Higher investment regime calls for moving to higher private and public savings ratios for which a number of strategies have been suggested. For drastic reduction of unemployment some of the long-term strategies are laying more emphasis on labour absorbing sectors like agriculture and activities like construction, small and medium enterprises (SMEs), trade, electricity and gas etc. and promoting education particularly of women. For limiting annual average inflation rate to moderate level it is imperative to ensure operation of market forces and enhancement of productivity. For a higher growth, low inflation and unemployment rate coordination of monetary and fiscal policy is important besides strengthening the role of Bangladesh Bank for oversight of financial institutions and establishment of an independent commission with a regulatory framework for the micro-credit institutions.

**Promoting a favourable industrialization and trade policy regime** is the subject matter of chapter 5. Much more dynamism of the industrial sector is envisioned in 2021 with its share of output and that of manufacturing as 36 per cent and 30 per cent of GDP respectively. The transformative growth particularly in the manufacturing and consequently the exports are to be more broad-based, higher skill intensive and competitive in 2021 with more vigorous and vibrant SMEs. The exports are targeted at 26 per cent of GDP in 2021 and this warrants fiscal incentive for using improved technology and furthermore liberal credit facilities for SMEs, strengthening institutions for ensuring quality of products, and a gradual approach to further liberalization to provide adjustment space for import-competing industries.

**Addressing Globalization and Regional Cooperation Challenges** in chapter 6 focuses the exigency of expanding external resources particularly the newly emerged remittance flows which is targeted to be of the order of 16 per cent of GDP at the end of the Plan period. Measures to boost remittance flow include introduction of state-of-the-art technology-based system for remitting money, providing adequate training for the needed skills for existing and emerging markets and aggressive bilateral negotiations for sending workers. Vigorous engagement in the rounds of multilateral trade liberalization is important specifically for Bangladesh. South Asia has been one the least integrated of the world with negligible capital flows, limited physical connectivity rendering the border areas more underdeveloped. Bangladesh's unique locational advantage with the neighbouring countries can be realised by initiating better cooperation arrangements like joining the grand Asian Highway System, undertaking common or complementary resource-based investment etc. The poorer sections of the population of cooperating countries will be high gainers because of such initiatives.

**Ensuring food security is discussed in chapter 7**, and attention is being paid to agriculture crops, fish, forestry and livestock, irrigation and rural institution. Production target for rice is about 37 m tons in 2021. Such targets have been given for fisheries and livestock and crops such as wheat, pulses and oil seeds. In irrigation, emphasis has been laid on improvement of irrigation efficiency. Improvement in yield in crops with improvements in irrigation will be able to meet the challenges. Rural institutions including co-operatives and marketing, research and extension are emphasized. Employment creation in the rural areas will be augmented through Rural Non-Farm Activities

(RNFA) and SMEs to be established preferably in rural growth centres and designated hats and bazaars which will be connected with electricity and other inputs and services.

**In chapter 8, issues and measures relating to Electricity and Fuel are discussed.** In view of the energy crisis over the past few years, it enjoys high priority in the OPP. Having discussed the issues in the area, the targets as laid out in Vision 2021 are presented (20,000 MW) with a production plan of the Ministry, the relative position of coal and gas in the energy-mix for power production is analysed. Greater coal based production of electricity is recommended. Electricity must not be allowed to deter investment, FDI or local. Alternative renewable energy, especially solar energy is given due emphasis. The scope of nuclear energy is also marked. Two thousand MW of nuclear power plants are envisaged.

**Issues, challenges and strategies for infrastructures** encompassing urbanization, transport and communication compatible with the development perspective are taken up in chapter 9. With increasing land scarcity in the rural farm-economy, and the urban pull of jobs and other income opportunities, people migrated to the urban places. The daunting challenges of Dhaka city in terms of provision of urban amenities have drawn national and international attention. The challenges and prospects of Dhaka and other cities, and townships, must be linked with the policy of rural development. Housing for the poor, environmental pollution like air and water pollution, and scope of urban governance in major cities must get attention.

In the OPP project's nationwide survey almost 75 percent of the respondents recognized development of roads as the highest single development effort so far undertaken. All other areas including HYV rice drew attention of less than 40 per cent respondents. Multi-modal transport integrating roads and highways, trains, water transport, rural transport, airport should get attention. There appears to exist a consensus that keeping Padma Bridge as a separate category, Roads and Highways should concentrate on bridging the missing links between transport modes and nodes in the coming years. Priority should be given to the rehabilitation and expansion of the railways, urban transport and building the deep sea port of Sonadia and improvement of Chittagong and Mangla port. Air transport should keep pace with international and national air travel foreseen in the coming years. Multi-modal freight transport should be fostered.

Teledensity will be increased. Voice over internet protocol (VOIP) should be made legal. In the next five years, all the Upazilas will be brought under internet network. The print and electronic media should be free with self-censures.

**The concerns relating to Environment and Climate Change** is taken up in chapter 10. The concerns relate to floods, tropical cyclones, drought, water supply both urban and rural, salinity management, deforestation, water and air pollution, arsenic contamination, etc. Climate change might increase rain fall and consequent increased run of, increased flooding and drainage congestion. The sea level rise will affect Bangladesh adversely and with a long coast line and flood terrain Bangladesh will be one of the top most adversaries of climate change. However, Bangladesh's contribution to global warming through carbon emission is minimal. Climate change response in the coastal zone, response in agriculture, forest eco-system responses, human health response, etc. deserve attention. This is a sensitive issue and full diplomatic initiative will be taken in terms of compensation received in connection with carbon emission and global warming including climate change refugees.

A theme very intimately connected with environmental and climate change is disaster management that requires adaptation, preparedness, response and recovery.

**Building a digital Bangladesh** in chapter 11 refers to developing the myriads of IT efforts and computer technology that may be in place in the country during the Perspective Plan period. It is a natural outgrowth from knowledge economy. ICT is the vehicle of Digital Bangladesh. It follows from knowledge-based economy, science and technology. Among other goals and targets in this area is compulsory IT instruction at the secondary level by 2013 and at the primary level by 2021.

ICT can help agriculture, health, education, training, and e-governance. E-governance could usher in widespread use of IT at an early date and could go a long way in ushering in transparency in governance.



## *Chapter 1*

# **BUILDING A SECULAR TOLERANT PROGRESSIVE DEMOCRATIC NATION**

## **1.1 A Resilient Democratic Nation Fostering Unity and Spirit of Patriotism and Nurturing Political Maturity**

Born out of more than two decades of political struggle and the glorious liberation war in 1971 Bangladesh, on achievement of independence, framed a Constitution that made provision for a secular, democratic, state. The spirit of liberation war embodied two broad themes, namely (a) establishing an economy and society free of inequality, and (b) nurturing culture of secularism. In spite of several lapses in democratic practice, the country has shown on each occasion a remarkable resilience to return to democratic forms of governance. Bangladesh has learnt through experience the exigency for strengthening the democratic institutions and practices.

People of Bangladesh have also demonstrated a remarkable equanimity for economic and social development issues despite the political differences persisting in the nation over the last two decades after the re-emergence of an open, democratic system in 1991. Nurturing Political maturity would enable the country to reap greater socio-economic benefits. Political maturity will come from greater degree of tolerance and cooperation rather than acrimonious power struggle. We must develop a workable consensus on politics and in a democracy there is no way to reach such consensus except by mutual respect-trust cooperation, adjustment, compromise and understanding.

## **1.2 A Tolerant Democracy and a Caring Society**

What the country needs is a tolerant democracy where open, enlightened and debate oriented political culture will prevail in place of the present intolerant, combative and violence-ridden political culture. Even in the present parliamentary system, the country seems to follow the cult of “winner takes it all” to be a legitimate game. But election and democracy, especially parliamentary democracy with its safe-guards for the bureaucracy, should be treated as a “win-win” situation. The administration should be free from politicization where upward mobility shall be based on competence, sincerity, performance and seniority.

Cultivation of tolerance should start from the foot steps of politics, i.e., in the universities and colleges, in the trade unions, in professional organizations, etc. The Universities and colleges which should work as citadels for democratic and secular culture are now serving more as arenas for flexing muscles for seat arrangements in academic courses, residential halls/hostels, tenders within the academic institutions, or even for realizing illegal gratifications and extortions from businessman in and around such institutions. Such situations cannot be allowed to continue unabated for long lest these sap the vitality of the political, economic and social structure of the nation.

In a tolerant democracy, there will be no room for religious terrorism, militarism or jingoism. Religious and ethnic minorities will be accorded security and their rights, especially during electioneering times.

*A caring society:* Along with a tolerant democracy, we would aspire after a more caring society where individuals consider the needs of the society along with their own personal well-being

and where the welfare of the people are understood also in the context of family units. In a caring society a system of values will be developed that care for the family, neighbours, strong religious values, and other human qualities, love, co-operation, hard work, discipline, honesty, integrity, etc. A caring society has the family at its core and has love for the young, filial consideration for the parents and the elders, concern for the disabled and the weak. Children's home for the working mother will have to be built under the supervision of the Social Welfare Department. Abuses against women and children, especially those in domestic work, will be looked after. Provisions will be made for rehabilitation of the physically and mentally challenged.

### **1.3 Promoting Democratic Culture**

*Promoting practice of democracy* within the party shall be expected. The political parties will be required by law to register them with the Election Commission along with their respective constitutions which must be in consonance with the Bangladesh Constitution, the national anthem and the spirit of the liberation war. A party constitution should provide for the election of office bearers of the party at the national and grass-root levels. The nomination process for elective offices, particularly the parliament, will enshrine a political convention and/or primary elections.

Information on sources of funding and all financial accounts of the political parties shall be subject to regular scrutiny of the Election Commission, which shall be made independent, strong and impartial not only by law but also by its exuding an impression of independence and impartiality.

The election process should be made credible and effective through voter list which will be computerized and be comparable with National Identity Card Systems. A candidate in an election must furnish along with the nomination paper information on his/her status on income, wealth, education indebtedness status and criminal records. Any significant deviation from such status reports and facts found later shall be appropriately dealt with under election laws. There shall be no interference with the media, printed or electronic, in course of the electioneering time. The judiciary will be called upon to undertake expeditious disposal of cases under election related causes.

*An effective parliament* where its de facto leader is the Prime Minister, shall be turned into the centre of all power and major political, social and economic decision making. Member of Parliaments (MPs) will be responsible for law-making and ensuring the accountabilities of the government. MPs will represent certain constituencies and will naturally be giving vent to the hopes, aspirations, and grievances of their constituents in the parliament. However, the parliament will not be used as a spring board for serving the constituency in any local level government's administrative capacity or its local development. Local development activities will be the prerogative of the elected local bodies.

It is time now to have a second look at the provision of the Constitution to ensure freedom of the MPs to cast their votes freely, without fear of losing their parliament seat, except in such issues as no-confidence motion.

One way to make the parliament effective will be the strengthening of the Parliamentary Standing Committees with adequate logistics in addition to financial budget to draw upon outside expertise to support their work or to offer evidence before the committees on important national issues or public hearings of such committees. Transparency and accountability of government will be enhanced through proper functioning of the Parliamentary Committees, which will have due representation from the opposition.

*Women MPs* should be directly elected and not continue to be indirectly elected. Ideally, parties should encourage women activists to seek and work for general constituency nominations. There should be no reserve constituencies for women in a general election. As a gesture of good will and compromise in the medium term, each party contesting the elections may be required to nominate women in a certain proportion (say 25 or 33 per cent) of their contested seats in national or local bodies.

## **1.4 Right to Information and Free Media**

The free flow of information regarding government financial transactions and records, except those which involve national security and criminal investigation, shall be made available under a right to Information Act. This phenomenon, as soon as it is electronically available throughout the length and breadth of Bangladesh, will be an important plank of Digital/Bangladesh of Vision 2021. This policy will require all public officials, including the elected, to provide annual information on their state of income and wealth. This right to information will also require to share information on any government transaction, or the decision making process, with citizens including the Media.

The independence of the Media, both electronic and print, shall be ensured. The practice of identifying media with certain business houses or political parties or groups shall be discouraged allowing all media to operate without fear or favour.

## **1.5 An Independent Judiciary**

One of the stumbling blocks in the achievement of an independent judiciary was removed by the separation of the executive and judiciary by Supreme Court decision. However, a rearguard battle for the status quo ex ante appears to surface once in a while. It will be incumbent upon the government to formalize the issue here by proper legislation. External interference in the administration of justice shall be checked.

Independence of the judiciary needs to be supplemented by monitoring and supervision of the judicial process. Improved training of the lower judiciary and further legal education of the lawyers are called for to increase efficiency of the lower judiciary.

There are complaints about the attempts at politicization of the Upper judiciary, especially through judicial appointments. The process of appointment to the Upper judiciary could be revamped through open parliamentary hearing where members of the Parliamentary Committee could ask the aspirant to such posts about their qualifications, fitness and records for such posts. The appointment process should be so designed that the media could poignantly raise questions about their suitability if occasions so arise, perhaps through the members of such parliamentary committees. The selection and advancement in the upper judiciary shall be kept free from political influence in the selection process. The phenomenon of embarrassment by judges, whereby they avoid sitting in courts trying some particular cases, will be revisited and provisions will be made to record reasons for such embarrassment.

To expedite justice in the rural areas, the alternative dispute resolution mechanism will be brought in under the supervision of the judicial Magistrates. The retired Magistrates, retired reputed senior officials, school headmasters, others who command respect in the rural society could be called upon to contribute their wisdom to conflict resolution in the rural areas through these pre-trial courts through negotiations.

## **1.6 Moving towards a Dynamic Economy**

Bangladesh should have economic resilience in a globalised world where winds of economic recession or inflation taking place outside the country may seek to destabilize the country's economy. The behaviour of the international capital market, free flow of funds, FDI, are all welcome but in a globalised world economy fraught with destabilizing forces. The country will have to master enough economic management acumen to face these challenges.

A progressive state will cater for the economic well being of the people through proper macroeconomic management in agriculture, industry and services; through population planning and creation of employment and generation of income; attainment of proper balance of payments and domestic resource mobilization; robust growth in saving and investment and FDI, etc. In sum, a sense of economic resilience shall permeate.

Bangladesh will seek to promote an equitable society which is important for social and political stability and achievement of national unity. There will be poverty eradication, gender equality, balanced regional development, an inclusive society and establishment of workers' rights and responsibilities.

## **1.7 Eradication of Poverty and Improving Income Distribution**

In the Vision 2021 period, aim is for a substantial reduction of poverty to about 14 per cent from about 36 per cent in 2008-09. The main path to poverty reduction is the quality of economic growth. Quality of economic growth can be referred to as the rate of growth that creates demand for the labour supplied by the poor and expands demand for the products and services supplied and produced by the poor people.

Since most poor live in the rural area, anti-poverty strategies ought to focus on enhancing demand for labour and goods and services produced by the rural poor. Towards that goal, actions should be taken to increase productivities of the labour supplied by the poor and extreme poor, such as provide incentives for expanding the use of technology to areas of crop and non-crop sectors yet to be brought under HYVs and other modern techniques. It is also necessary to ensure that the poor have the access to the gains from the increased productivities. It is absolutely necessary to ensure poor peoples' expanding ownership and access to public resources, such as Khas Land, Khas water bodies etc. With regard to poor peoples' access to the non-farm income enhancing opportunities, government and NGO efforts need to focus on increasing the availability of credits, education, training facilities and healthcare to all poverty stricken groups. The action in this area should also focus on improving the efficiency of service delivery and developing a system of accountability and transparency to ensure availability of appropriate and adequate services to the poor. Such initiative will increase marketability of the labour supplied by the poor people and enhance their income earning opportunities.

Another way to enhance market access for the poor, specially, those who are unable to participate in the local market is to develop infrastructures such as roads and communication. To reduce the vulnerability to both social and economic shocks, income opportunities for the poor people need to be expanded in the non-farm sector and non-crop products. Adequate income transfers system must be devised to address immediate crisis following economic and non-economic shocks. Vulnerability due to social problems such as dowry, domestic violence, social-exclusion needs to be addressed by social awareness campaign and judicial measures. In this context, second tier

institutions, such as NGOs, media and human rights groups must be brought into a development coalition.

***Distributive justice:*** The inequality is quite high; the lowest quintile of households has only 0.92 per cent of the income, the Gini coefficient being 31 per cent in 2008. The scope for higher taxes and expansion of the tax net may be borne in mind, especially when the Tax-GDP ratio is still very low compared to the regional countries.

It has been estimated in the macro-aggregate analysis that the number of people above the upper poverty line would be brought down in 2021. The associated poverty eradication programmes will have to be delineated in Five Year Plan and ADPs. The plan may consider reforms in terms of tenancy. Ownership to new productive assets such as power pumps, power tillers, threshers, shallow tube wells, solar dryers, etc. by the landless and marginalized population should also be encouraged through credit and training support.

***Provision of effective safety nets*** and targeted programmes will be part of Government policy to ensure an equitable society. The objectives of such a programme will be to (a) reduce income uncertainty and variability, (b) maintain a minimum standard of living, and (c) redistribute income from the rich to the poor through progressive taxes and other social measures. It would be appropriate to mention that a comprehensive social security system is necessary to implement vision 2021. We would opt for a targeted safety net programme for the vulnerable. The safety net programmes (SNPs) available in the country are: *Old-age allowance scheme, Allowance for widowed and distressed women, Vulnerable Group Development (VGD), Maternity allowance scheme, Female secondary stipend programmes, Open market sales (OMS) during price rise of food grains, Public food distribution system e.g. ration for poor people, Natural disaster programmes, Provision of shelter (Asrayan/ Abashan/Adarshagram programme etc.)*

Bangladesh is situated in a weather related disaster-prone area, resulting in recurrent floods, tornados and cyclonic surges and perennial river erosion problems. The shocks of these natural disasters have a disproportionate high address impact on the poor. Government and the people have in the recent past shown commendable success in coping with these disasters. Nonetheless, disaster management and associated relief and rehabilitation will have to be permanent features of the economy. Individual household coping mechanisms include, among others, reducing food intake, distress sale of productive assets, resorting to high interest rates and contracting family members to hazardous labour. These are very costly. Hence, there exists the need for a national policy and sustained program to cope with these natural disasters.

These SNPs will have to be streamlined and administered effectively, preferably under a co-ordinated administrative mechanism. Effective coverage and adequacy of funds for these programmes have to be drastically improved. The ad hoc nature of the programmes tied with external assistance smacks lack of seriousness with the programmes.

## **1.8 Promoting Gender Equality**

The equal rights of men and women and the equity measure to bring advancement of backwards groups in the society have been included in the Constitution of Bangladesh in the 'Fundamental Rights' chapter and in the chapter of 'Principles for Administering the State'. As part of the continuing effort, Government introduced quota system in the Parliament and in the government services for women; formed Bangladesh Jatiyo Mohila Sangstha (BJMS) and other

measures to foster gender equality and women's empowerment. Recently various initiatives are being taken by GOB for the institutionalization of gender responsive planning and gender responsive budgeting.

To fulfil its international commitments stated in the CEDAW (Confederation on Elimination of Discrimination against Women) and the Beijing Platform of Action (BPFA), the Bangladesh Government adopted the "National Policy for Women's Advancement (NPAW)" for the first time in 1997. The objective of the National Women Policy is to eliminate all forms of discrimination against women by empowering them to become equal partners of development. In order to ensure the implementation of Beijing Platform of Action, in 1998, Government formulated National Action Plan for the advancement of women.

### ***Gender dimension of poverty***

Poverty of women has different dimensions and has been generated through various processes. The poverty of women is due to possession of inadequate asset and resources, human capacity and constraints for access to labour market and resources like bank credit, free mobility, as well as burdened with non-paid family-work, rearing and caring activities. In addition, women suffer from economic, social, political vulnerabilities, domination and less access in the decision making process in the family and in the society.

Women suffer from many kinds of vulnerabilities due to economic, social, political deprivations and adverse effects of emerging climate changes. Death of husband, divorce and abandonment makes them female-headed households but in absence of resources make them economically vulnerable and prone to poverty. Social vulnerability of women includes socio-cultural restriction as well as harassment in free movement and at workplace. These impede women's mobility and access to education and work. Women's special health care does not mean only reproductive health but also special health care catering to their differential needs. This includes the experience of women in other health problems due to socio-cultural prejudice and practice on nutrition, as well as domestic and public place violence.

Political vulnerability consists of under representation in political party, Parliament and Local Government bodies. The elected women representatives still do not enjoy equal rights like their male counterparts in the decision making process.

The country will increasingly face the challenges of climate change which will affect the life of the people but the women will face more challenges due to their economic and social vulnerability especially in the post disaster situations.

OPP set goals for gender governance include (i) Women needs to be more empowered so that they can participate in all decision making process at their work places; (ii) Gender equality will be established in training rights/opportunity both at the national and international level to improve professional excellence; (iii) Legal provisions and application will be further strengthened in order to create a secured society where women rights will not be violated and women will not face any violence both within families and in workplaces; (iv) Ratification of CEDAW Charter in full by Bangladesh; (v) All laws related to gender inequality will be reviewed/amended or adjusted so that the laws become more gender responsive; and (vi) Gender sensitive good governance by ensuring rule of law, transparency and accountability in all public and private institutions with special focus on inclusive society.

## ***Strategies and Policies***

Poverty reduction of women requires holistic strategies for gender equality. The first is increasing access of women in labour market by making them eligible for job through education and marketable skilled training. The second is removing the constraints that work against women's accessing jobs. This includes reduction of women's time spent on the household, rearing and caring activities

During the Perspective Plan (2011 – 2021) period, all relevant incentives will be provided for women to pursue higher secondary and tertiary level education and pertinent training for making them eligible to compete in the job market. Special health facilities according to their needs will be ensured for enhancing their human capacity to participate in the labour force. They will be selected in public sector jobs by fulfilling the existing quota system and also on merit for gender balance in the public sector employment.

The drudgery saving technology may be made available for household work at reduced cost through fiscal measures and technological innovations. Women may be encouraged to be entrepreneurs through increasing appropriate training facilities. The availability of institutional collateral free credit at soft term to women entrepreneur for setting SMEs will be an important step for encouraging women in the venture. The Bangladesh Bank may create a fund and use existing banking system for disbursing credit to women entrepreneurs and traders. A separate bank for Women may be established for supporting women entrepreneurs and traders.

The strategies to face economic vulnerability of women will be expanding the safety net programmes for the female-headed households along with appropriate skill training supported by micro credit for their sustainable self reliance. Enactment of law and their strict enforcement along with advocacy for change of social attitude on safety, security and against harassment of women in movement and at work place will be undertaken during the OPP period for ensuring free movement of the women. During the OPP period health system will be restructured for making it women-friendly to service the differential needs of women.

Thirty percent representation of women in the committees of the political parties will be enforced. The duties and responsibilities of women representatives of local government will be unambiguously defined for ensuring their effective participation in the decision making process. In the coping strategies against climate change and in disaster, special measures will be undertaken suitable for women.

In order to make existing women's machinery, particularly the WID and Sub-WID focal points to play effective role in enhancing inter-ministry and intra-ministry coordination for establishing gender equality, adequate human resources, unambiguous terms of reference and coordination will be needed.

## **1.9 Promoting an Inclusive Society**

During the Perspective Plan, the 50th anniversary of the independence of Bangladesh we aspire to ensure a more inclusive and equitable society where shall prevail social justice, human rights, women rights, child's rights and equal opportunity in terms of employment, income generation, health and nutrition, education, public services and legal aid. The culture of secular belief, progressive, right-based liberal welfare state with no discrimination against tradition and religion one practices, or place where one lives or type of work one does will be promoted. Efforts will be made so

that everyone irrespective of sex, age, race, class, caste, ethnicity and religion can enjoy equal opportunity and citizen's rights. The basic premise of the Perspective Plan in this regard will be such where "development" will be seen as process of inclusion of the excluded people in the process of development. Building such a society may be seen as morally imperative as well as politically and economically necessary and justified.

***The Aboriginal/Adivasis/indigenous*** people face multiple challenges that include their land rights, education system in their own language, health service and adequate access to the economic/productive resources and services,.

***Religious Minorities:*** Approximately 10 percent of the population is Hindu. Among the Hindu population, a large number belong to the schedule caste/lower caste also known as Dalits, Harijans, Antaja who are categorized in respect to their occupation such as Dhopa (laundryman), Dome and Chondal (cremator of dead bodies), Jolodas (Hindu Fisherman), Kaora (Pig rearer), Methor/Harijans (Sweepers), Namashudra (Peasant/farmer), Pondo Khaitria (Mat weavers), Robidas and Rishi (leather workers/cobbler), Napit (barber) etc.

Many Adivasis of the plain land also follow Hindu religion. The other religious minorities are the Christians (mostly Roman Catholic), and Theravada - Hinayana Buddhist. Christians are found among the mainstream as well as among the Adivasis and Buddhists are found predominantly among the indigenous populations of the Chittagong Hill Tracts.

***Socially Disadvantaged Groups:*** There are some disadvantaged and stigmatized groups, who are subject to social injustice, are marginalized, with very few opportunities to have access to public services. They include absolute landless families in rural areas, slum dwellers in urban areas, informal sector workers, floating population, children in poverty, child labour, poor elderly people, tea-workers, sex-workers, transsexuals (Hijra), children in contact with crime, refugee and displaced people, river gypsies (Bede), traditional musical instruments player (Bajander), Palki/ palanquin carrier (Beyara/Bahera), Traditional Birth Attendants (Dai), Circumciser (Hajam), fishermen (Jele/Nikari/Maimol). Belonging to the low socio-economic status these groups often become victims of antagonism and oppression in terms of enjoying equal citizenship rights.

***Physically and Mentally Challenged People:*** There is prevalence of different kinds of disabled person such as physically handicapped, visually impaired, hearing impaired, mentally challenged, etc. Disability now is estimated to have affected almost 10 per cent of the population or 15 million people and it may occur due to any accident, violence, or may be congenital. A huge number of citizens were severely wounded/subject to violence during the liberation war in 1971 and suffered from various forms of physical and mental disability. Currently road accident is causing disability to a large number of people. In Bangladesh people with disability faces challenges and vulnerabilities. Vulnerability and challenges of women with disability is much diverse and pervasive. Creation of an enabling environment for them to lead a life with dignity and respect is virtually limited. They are often denied employment, education opportunities, health care, etc. Their mobility is also restricted by the traditional pattern of housing and other infrastructures. They must have rights and access to all facilities including school enrolment, employment, sports participation, congenital office and transportation facility, health care, etc.

***Strategies and Policies:*** The Outline Perspective Plan (OPP) envisages a society by the 50th anniversary of Bangladesh which will be equitable and inclusive by taking care of the concerns and interest of all the marginalized, deprived, and minority groups. In order to achieve the desired society,



we will promote cultural, religious and ethnic diversity as national heritage through pursuance of policies for cohesion and inclusion of the ethnic, religious and cultural minorities into a national and social force. The most challenging work during the OPP will be the uplifting of the caste-based marginalized groups from poverty, illiteracy and adverse social condition. All forms of discrimination against the socially excluded groups will be eliminated and their human rights and citizenship rights will be established.

The “Vested Property Act”, which is considered as a discriminatory law, is in the process of being amended. Before the 50th anniversary of independence of Bangladesh, due to this amendment there will be no discrimination.

The government is committed to fully implement the 1997 Chittagong Hill Tracts Accord, and will put more efforts towards the development of the underdeveloped Aboriginal/Adivasi areas. The activities of the Land Commission will be made effective for settling land disputes. Efforts will be taken for peaceful coexistence of hill Aboriginal/Adivasis and the settlers preserving and protecting the rights of the Aboriginal/Adivasis. Ways and means will be devised to protect the land rights of the plain land Aboriginal/Adivasis. The Aboriginal /Adivasis will be constitutionally recognized and their cultural heritage will be preserved and protected.

The civil society will be encouraged to launch cultural movement for integrating the *Dalits*, *Harijon*, *Antaja*, tea garden workers, Aboriginal/Adivasis and other excluded groups including people with disability into the mainstream of the society and against oppression of the minorities.

Special provisions will be made for social protection of the people with disability particularly women/girls against vulnerability and risks. Productive capacity of disabled people will be built/enhanced through special education, training and rehabilitation programmes. Measures will be taken to ensure accessibility and mobility of people with disability to all physical facilities and their participation in social/national functions, sports and cultural activities related to entertainment.

Bangladesh Disability Welfare Act was enacted in 2001 which is now being updated. Rules and regulation will be framed for implementing the Act. Disability will be defined and diverse needs and rights of people particularly women with different kinds of disability will be identified and addressed. Necessary amendment of the Disability Act will be made with inclusion of the UN Convention on Disability to make it on right based approach for preventing of violation against disabled person.

Special measures will be taken for other socially excluded groups such as sex workers, transsexuals, children in contact with crime, refugee and displaced people and tea-workers to ensure their human rights, rights to public services and security and improve their socio-economic condition. Finally, special budgetary provision will be made (with separate line item for each group) in the national budgets.

## **1.10 Arranging Provision for Shelter**

In poverty stricken country, marked by considerable landlessness, provision of shelter (housing) assumes great importance. There were in the past attempts at provision of shelter through Asrayan/Abashon/Adarshagram/Ghar-e-fera programmes. The objectives of these programmes among others were to provide homeless and landless families with homesteads and basic facilities on *khas* or government land. The lessons learnt with the programmes should be geared to the provision of shelter or *Abashon*, which is one of the basic needs of life.

**Strategies and policies:** In consonance with rural *Abashon* programme, urban housing and shelter for the slum dwellers may be taken up. Housing estates for the low income groups deserve attention with long and medium term credit facilities under the public and private sectors. Provision of the present dwellers in slums with minimum housing, sanitation and pure-drinking water in the mega-city will indeed be a challenging job by 2021. Compact Township may also be created around growth centres for rural landless-houseless families.

## **1.11 Balanced Regional Growth**

The economic disparity between regions or between urban and rural development naturally crops up in a market economy in the absence of determined planning to combat such disparity. The clustering of industries, even foot-loose industries in and around Dhaka is understandable, given our political and administrative realities. However, in the days ahead, dispersion of industries to other areas should get priority. Expected growth in non-farm activities in peri-urban areas will help to reduce income inequality between regions, as well as between urban and rural areas. There should be development plans with built in regional considerations for balanced regional growth.

Though Bangladesh is a small country with a large population and a relatively developed road network, pattern of growth with a major western and eastern divide seems to have developed. Barisal-Khulna -Rajshahi belt appears to have lower per capita consumption expenditure than the east of Jamuna/Padma belt. This phenomenon is different from the specific geographic and agro-ecology specific problems like river erosion, salinity and arsenic pollution or Monga. Analyzing the causes for regional imbalance, conscious efforts shall be taken to mitigate these regional imbalances. Such imbalances would aggravate unplanned urbanization and the creation of mega-cities with the urban squalor that such mega cities entail. Emergence of viable local governments with greater authority and financial resources will be able to take care of regional imbalance in a future economy characterized by small and medium enterprises that will not be in great need of patron client relations with the high and mighty in Dhaka.

Attention should be given to develop small towns as hub of economic development of respective region. This would help in diverting growth and decentralizing the process of growth favouring the underdeveloped regions.

**Strategies and policies:** As the poverty tends to be different across regions, strategies should be taken considering the local specificities. To develop new strategies, it is important to give emphasis on the risk factors associated with the backward regions. Quality of life in the urban slums is worse off than the rural poor. Special programmes for urban poor should be undertaken. Infrastructure development in the lagging regions like reactivation of the Mongla Port should get priority. Supply of gas and coal, if necessary imported, shall be provided to these areas, particularly for electricity generation.

Initiatives to send more people from lagging regions for overseas employment would have positive impact to reduce regional inequality. Special skill development programmes and credit support programmes should be developed towards this.

## **1.12 Establishing Workers Rights and Responsibilities**

Workers' right to organize and undertake Collective Bargaining shall be recognized and fostered within a democratic trade union system. Industrial relations in Bangladesh appear to be in a moribund state, though powerful Collective Bargaining Agents (CBAs) dominate the scenes in public

enterprises including Banks. Unruly behaviour of some trade unions is more of a manifestation of their indulgence with lawlessness and the rot in which industrial relations had fallen in the country. In a growing industrial economy, barring short-term exceptions, there is no alternative to democratic, viable trade unions.

The wildcat strikes that mark the garment industry are more a manifestation of the absence of viable trade unions rather than the machinations of powerful union bosses. The garment industry employs about 2.5 million workers, 85 percent of whom are women. Since the industry now accounts for 75 percent of Bangladesh's merchandize export income, women are more vulnerable to fluctuations in global trade. Out of 3,500 garment factories, less than 1per cent has active factory level trade unions with collective bargaining agreements. The enforcement of labour laws is weak.

To improve their conditions Government will introduce a Contributory Provident Fund (CPF) for garment workers with equal amount of contribution from the Government and the company.

*Strategies and policies:* Promotion of democratic trade unions shall get priority along with fostering the functions of Factory Inspectors and Labour Courts.

### **1.13 Making the Vision 2021 a Reality**

This strategic plan sets the direction and provides an outline to set the course of action for making the Vision 2021 a reality. This Plan presents the broad framework to leave considerable latitude for the Sixth Five Tear Plan (2011-2015) and the Seventh Five Year Plan (2016-2020) to work out operational details of how the country should move forward. As such the Perspective Plan does not chart strategies, policies, and activities to the last detail.

#### **1.13.1 Generating the Will and Skill**

The implementation of the Perspective Plan envisages the full commitment of will, skill, and resources from all stakeholders to developing the nation into a middle income country by 2021. The national compact for creating a caring society of highly innovative people requires collective national will to make an unwavering commitment to Vision 2021. For these aspirations to manifest, the government must lead the way and demonstrate the leadership and courage to build continuous buy-in among the country's population through more dialogue and transparent action, and offer income and social protection for all citizens, especially the poor and vulnerable groups.

The government is required to make long-term thinking a central element of the decision making process and service culture. Citizen-centeredness will be at the heart of every core process, structure, and procedure. The expectation is that the government will and non-government institutions function with the highest standards of public accountability, participation, consistency, and integrity. The government cannot achieve the Vision alone. It is a collective effort in which the private sector, civil society, and all other stakeholders will join hands within a collaborative approach to reshape the nation's future.

The formulation of this Plan has been a highly consultative process and a clear demonstration of the will of all. This process must continue throughout the implementation, monitoring, feedback, and revision cycle since Vision 2021 is not a destination in itself but a journey. It will be critical to the success of Vision 2021 that the Perspective Plan be effectively and efficiently executed, its progress tracked against pre-set performance targets, and clear responsibilities be assigned to public, private and civil society institutions alike.

### **1.13.2 Institutionalizing Plan Implementation**

The preparation of the Perspective Plan is only the first step along the challenging road to achieving the Vision 2021. The execution of the Plan is the key and its success will be judged by progress made against the goals and targets set in the Plan. The Plan no doubt inspires great visions but the challenge is not to let it fall short of expectations due to implementation failures.

The execution design of the Perspective Plan has to be unique to achieve much in a relatively short span of the Plan. In recognition of the importance and challenge of the task, a Perspective Plan Management Office (PPMO) at the Planning Commission may be established to lead and coordinate the execution of the Plan. An Independent Vision 2021 Council may be created to continuously refine the Vision 2021 and the Perspective Plan and track progress in an objective manner. The former will lead, guide, and coordinate the execution of the Plan within the government realm and the latter will meet the need for independent, continuous tracking of progress and feedback to inform policy formulation and decision making within the public and private sectors.

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## *Chapter 2*

### **ENSURING GOOD GOVERNANCE AND CURBING CORRUPTION**

#### **2.1 Introduction:**

Good governance and anti-corruption movement enjoy a very high priority in the national agenda. It is generally believed corruption poses as a stumbling block to poverty reduction and socio economic development.

#### **2.2 Institutional Basis of Governance**

Observance of the constitutional principles would lay the foundation of good governance in the country. It is essential to do the same so that a constitutional obligation is created for the nation to pursue the governance agenda.

Under the Fundamental Principles of State Policy, Article 11, states “The Republic shall be a democracy, in which fundamental human rights and freedoms and respect for the dignity and worth of the human person shall be guaranteed”. There are clear directives in the constitution to ways of ensuring good governance that is by ensuring people’s participation, and of course quality participation, which will entail human resource development endeavours, education, equal opportunities, transparency, accountability, monitoring (the role of the CAG is constitutional), free and fair election, effective parliament, corruption free systems, respect for human rights etc. Another directive for good governance is in the pledge to devolve power and strengthening local government.

Review of the laws should be considered as a subject matter of priority. Good governance requires not only rule of law but also a harmony and consistency of the laws. Good laws are sine qua non of rule of law.

The executive functions of the country are organized in different ministries and divisions. Most ministries are line ministries with their departmental hierarchy spread over to the field tiers of the administrative set up spread throughout length and breadth of the country. Too many ministries/divisions make efficient governance difficult. There is an ever increasing trend in the size and numbers of ministries. There is also an increasing trend towards centralization leading to a fall in the performance of the ministries.

Rules of Business (RoB) define the role and responsibility of the ministries. It makes a distinction between policy and implementation – ministry being responsible mainly for policy, planning and legislative functions. There is inconsistency between the stipulated functions and the subjects allocated to the ministries. Departments are the implementing arms of the ministries. But most line ministries usurped many functions of the departments. Ministries should act as “think-tank” of the government in their respective fields. Governance improvement can not be expected if the ministries and divisions are not made free from the preoccupation with implementation functions, be it regulatory or service delivery. The Minister heads a ministry, and the Secretary is the “administrative head” and the “principal accounting officer”. Ministries have a mandatory responsibility for overseeing the operations of the departments and agencies under it, specially the conduct of the functionaries. But no ministry has ever been held accountable for the conduct of its subordinate departments and functionaries. Most ministries have departments’ offices under them. There are also a good number of departments and public offices without adequate work.

There is a Field Administration (FA) set up under the departments but they do not enjoy significant power and authority. Redundancy of manpower, inadequate work load, inadequate budgetary provisions coupled with lack of supervision, are found to be wide spread in the FA. There is no regular inspection and monitoring; most of them do not have inspection manuals and monitoring mechanisms. There is no regular audit. A separate FA exists under the Cabinet Division for the establishments of Divisional Commissioner, Deputy Commissioner (DC) and Upazila Nirbahi Officer (UNO) at division, district and upazila levels respectively. They provide to the Cabinet Division information about the trends and events weekly and fortnightly. But format and content of the reports lack depth and quality.

There are a number of public sector enterprises. They are beset by corruption, wastage and inefficiency. Many of these agencies provide public utility services. Allegation of chronic inefficiency, wastage, corruption and also donor pressure, led to changes in the government policy and some of these agencies have been privatized. Some others have been corporatised. But overall functioning has not improved.

## **2.3 Development Governance**

Development activities are heavily dependent on external aid. The Planning Commission and the National Economic Council (NEC) are the agencies responsible for economic development policy. Both of them (including ECNEC) have turned into mere project approving authorities. The planning mechanisms centre on development projects and is regulated by Annual Development Programme (ADP). The ADP is not integrated within the framework of Five-year Plan which is again not integrated with a Perspective Plan. These mechanisms are directed and controlled by the Planning Commission and NEC. The country has different types of fund management mechanisms for projects under the ADP. Project mechanisms have separated development activities from the regular establishment of the agencies. Mushrooming of projects has led to the incapacitation of national civil service system. Project governance suffers inherently from a plethora of anomalies including rampant corruption, inefficiency and wastage. Project Directors are omnipotent in project governance. IMED inspection and CAG audit of projects are ineffective and inadequate.

Key elements of governance viz. lack of transparency and accountability, corruption, inefficiency, wastage, lapses in service delivery – all are inherently linked with management of public accounts. For oversight of public accounts, there is the office of Comptroller and Auditor General (CAG) enjoying quite a high constitutional status. CAG's audit reports are placed before the Parliament to be reviewed by the Public Accounts Committee (PAC). The results of audit are seldom made known to the media or public. They are seldom discussed by the Public Accounts Committee.

### ***Development Governance and Planning Commission***

The status of Planning Commission (PC) has been downgraded over time. The PC is neither a department nor an attached office. Nor it is a statutory body like other statutory bodies of the government. Nor is it a commission of the status of other Commissions like the Election Commission or the Public Service Commission. It is an establishment without a defined status. Its function in the Allocation of Business is missing. The PC does not exist *de jure* though the *de facto* role and functions of the PC continues as before. The PC needs rejuvenation with clearly defined status.

***Planning Commission Staff Development:*** Planning Commission occupies a place of eminence to ensure good governance. Rejuvenation of the Planning Commission may come from thoughtful appointment of Members. They should have national and international stature through

years of administrative, development planning or research-cum-teaching experience in the disciplines of particular Divisions where they are placed. While, as expected at the time of constituting the Economic Cadre, it has ensured rather systematic promotion of the incumbents on grounds of seniority but specialization and ability of the officials in the cadre has suffered. This calls for institutional and in-service training of subject matter specialists of the Planning Commission staff. Challenging jobs involving the entire nation are often carried out here. Hence, the need for effective career development of the officials of the Economic Cadre could hardly be over emphasized.

## **2.4 The Civil Service**

The civil service is split into cadre officers. There is an absence of sub-cadres, as used to be in the past. Scope for meritorious officials to move vertically remains very limited, the recruitment is not wholly performance based. There is numerical inconsistency in the recruitment. Since most of the cadres are field based, most of the officers have to work in the field posts after recruitment and in the earlier stages of the career. But most of them dislike field posting. This has led to a qualitative degeneration of the higher civil service in the country. The civil service as a whole lacks professionalism or specialization and is in the grip of mediocrity, unable to respond to meet the demand for service, efficiency and excellence. Jealousy and rivalry between cadres have become somewhat ingrained. A rampant use of the Public Servants (Retirement) Act, 1974 has shaken the fabric of civil service and has led to widespread politicization. Very many reasons like poor educational standards, poor quality of initial intake, absence of career planning and lack of appropriate training has made civil service a victim of significant malaise. The prevailing mechanisms are not conducive for good governance.

### **Vision 2021 on Good Governance**

Institutions of the State and Administration will be freed from partisan influence. The basis of appointment and promotion will be performance, commitment, efficiency, honesty and loyalty; political connection will have no relevance.

## **2.5 Local Governance**

In this Vision 2021 Plan we would like to see genuine devolution of power down to the local government level, with autonomous local governments functioning within the spheres of law and constitution. It is often held that the Constitution of Bangladesh does not provide for local government or 'sthaniyo sarker'; it provides for 'sthaniyo shason' or Local Administration. This appears to lie at the bottom of the cleavage between the Upazila Council and the powers and functions of the members of parliament as to Upazilas. It is hoped that gradual devolution will occur and we will get a workable autonomous local government without the fetters of the central government and with an authority to raise its own resources.

In respect of internal working respective laws vest key powers of decision making and implementation in the mayor (for city corporation and pourashava), and the chairman (for Upazila and union parishad), making the mayor and the UP chairman autocratic and lead to formation of syndicates and cabals centering them. Local government presupposes devolution of power, function and finance. Urban local government units enjoy some devolution but the rural local governments none. A powerful Local Government Division (LGD) inhibits flourishing of a culture of devolution among the local governments. No local Government can flourish under a command and control environment. Local Governments must enjoy devolution in matters of power, functions and resources.

Again, a perceived notion prevails that democratically provided local governments would be able to check the current centralization of the state in the country. Without such devolution, the Zila Parishad may not be instituted. In fact, in the absence of complete dissociation of the higher echelons of Government offices or the members of the parliament from the institutional, constitutional and autonomous functions of the local government, the local governments cannot be effective.

Local governments will augment national participatory consultation for planning, policy making and implementation with the local government leaders and the grass-roots people. In addition to augmenting local sources of revenue, suitable formula could be worked out to share central revenue by the local government. Local Government bodies can be empowered to collect and utilize their own resources, with effective accountability mechanisms in place, which provides for regular auditing and reporting of accounts.

### **Vision 2021 on local Government**

Local government will be given due importance with a view to effecting radical change of the political system. The local government institutions will play a critical role in governance as well as in development programmes. Self-reliant local self-government institutions will be established at Upazila and Zila levels to this end.

## **2.6 Private Sector and Civil Society**

The private sector has been a victim of a partisan view in spite of the fact that it has been the engine of growth and generation of financial resources in the country. It has remained a victim of over regulation by the government. Initiative taken in the recent past to set up a Regulatory Reforms Commission has been a good start.

Civil society facilitates good governance. There is an active and visible civil society present in the country, which has shown concern about social abuses like tree felling, river pollution, system of election and governance, etc. The NGOs lead the corps of civil society organizations. Indigenous civil society activism is also quite common. Numerous advocacy groups take up causes of public interest. Public Interest Litigations (PIL) unknown till recently, has become a common phenomenon these days. The media has been very active. As the process of wealth creation accelerates in the country private charities and philanthropies are coming up in good numbers. A surge is noticeable in private charities and philanthropies, led by the Bangladesh Diaspora and the well-meaning rich and affluent section. Private business houses and corporations are demonstrating Corporate Social Responsibility (CSR). Alternative social capital is accelerating.

## **2.7 Anti-Corruption Movement**

Popular perception of corruption centres on individual persons and organizations. There are incidences of corruption by people in high and low positions. High level corruptions often have international linkages. In all instances there is involvement of the “other party” – the bribe payers. High incidence of corruption including abuse of power in the country pulls the governance process downwards perennially. Bribe payers and auditors are seldom mentioned in the discourses on corruption. The Public Accounts Committee and CAG remain ineffective. Historically Anti-Corruption units are essentially bureaucratic outfits with doubtful efficacy to check corruption. Besides, there exists a lack of social and economic analysis of rising corruption. Rising prices without adequate rise in salaries and other compensation, increasing poverty, and too much power in the hands of government functionaries in course of development administration is contributory to the abuse of power.



***Anti Corruption Movement:*** If Bangladesh has to move along its stride to rapid economic development, there is a need for launching a social movement against corruption. A high-powered Anti-Corruption Commission (ACC) should function with constitutional guarantees about its powers, free from all fetters of the executive and lower judiciary. Right kind of incentives will be provided to the Commission to ensure their impartial character. While all present pervasive corruption will be brought to a significant halt, effective measures will also be taken to bring the corrupt to justice and fair play.

***Inefficiency:*** Inefficiency, wastage and malingering are as menacing as corruption. Inefficiency has singularly been holding up growth and development. Inefficiency is as endemic as corruption in the public offices and establishments and is an important governance issue. The poorer a country the higher is the degree of wastage. Instances of wastage are in plenty in the development projects. Preventing wastage will help to prevent inefficiency and ensure better value-for-money.

***Accountability and Transparency:*** In vision 2021, the country aspires after an accountable and transparent governance system with the right to information established. Accountability and transparency are systemic phenomena and have been inherited and perpetuated by the system of bureaucracy designed and left behind by the colonial rule. Inherent to them is the lack of trust over the “native” officials and clients i.e. the citizens. The culture of secrecy and holding officials responsible for “leaking official information” are direct impediments to accountability and transparency.

***A Transparent Procurement System:*** Public procurement system, particularly large purchases from abroad, is widely regarded as being the single most important source of leakage of public funds in the country. Reducing opportunities for corruption in procurement will enhance the effectiveness of public expenditures. The large sums of funds that are provided in the development budgets could be brought under the scrutiny of the civil society and media in connection with the floating and award of tenders for public infrastructures and donor financed projects, thus reducing their costs and enhancing growth. Public procurement should be free from endemic delays, lack of transparency and collusive practices involving the high and the mighty and the political cadres of the Government party. An e-procurement culture or computerized tenders should be able to deal with these issues of transparency in public procurement. High powered vigilance teams should monitor the large contracts and purchases together with the media. Freedom of information flow could be yet another effective mechanism to check incipient corrupt practices.

***Ethics and Values:*** Strong principles of ethics and values guard against corruption, inefficiency and wastage. These values are equally effective for both public and private sectors. No country worth the name has achieved higher economic status goals without practicing these values. Ethics and values are acquired qualities; they are not inborn. They have to be inculcated through education and training. The educational and training institutions act as the primary medium for inculcating them among young minds and future leaders.

***An Effective Ombudsman:*** Bangladesh constitution provides for the post of Ombudsman. The post be filled up and the incumbent offered all possible scope to function effectively

***Law and Order:*** Bangladesh has to achieve a position where law and order will not be suspected to be so weak as to deter growth. Vision 2021 will be for such a law and order scenario. All the pillars of justice system will regain their credibility, shedding off perceptions of corruption,

inefficiency and wastage. Laws that fulfil our commitments to international conventions/ agreements such as the Convention on the Elimination of all forms of Discrimination against Women (CEDAW), Beijing Platform for Action (PFA), Convention on the Rights of the Child (CRC) and others will be implemented.

The Police must be able to regain confidence of the people. The police force will be enlarged, bringing them at par with comparable countries in matters of police-population ratio. Police will be engaged maintaining a working level of public order, preventing, detecting and investigating crime. The perception of police being friendly or protective of the wealthy and indifferent or contemptuous to the poor or the working class shall not be there. A system of gender sensitization training (covering violence against women issues and other laws to protect human rights) will be in place for all legal and police officers.

In the OPP a police force is envisioned which is marked by courtesy and civility that value human life and respect the dignity of the individual. In doing so, police force remains impartial without being averse to vigorous law enforcement. Decentralization of the main police force at the district level could be considered with a police chief for the district. They will be accountable to the district level government bodies and must be completely non-partisan. To combat inter-district and national level crimes, a national investigative agency equipped with improved policy measures will be established.

People's participation in policing may be ensured through Citizen's Committees in every village and municipal ward and participatory consultation system could be instituted between the police force and these Citizen's Committees.

## **2.8 Towards Fast-Track Governance**

**(i) Country Governance Measurement:** The focus and interest of government reform have shifted more towards governance theme and more precise tools have been developed for measuring governance of countries. The overall governance situation in Bangladesh demands a process of measuring governance to be installed in the country. For this, a country specific measurement mechanism may be developed.

**(ii) Agency Performance Ranking:** More urgently needed would be to develop a composite set of Agency Performance Indicators for the ministries/agencies. This then can be used as a tool by policy analysts and decision-makers. When installed it would facilitate to make public disclosure of the performance data of each and every agency. It will set a standard for performance as well as transparency and accountability.

**(iii) Building Capacity for Policy Planning:** The country lacks in the capacity for economic and social development policy. There is no consistent and coherent policy yet developed for the public sector and the private sector. There are isolated policies covering individual subjects. There is great need to integrate them in a macro policy framework based on which development strategies and plan of action can be prepared. This would cover the broad fields of economic development and social development. This would also call infusing a home-grown nationalistic perspective rather than current donor dictated perspective.

**(iv) Developing Critical Institutional Capacity:** Improvement in the policy planning capacity implies corresponding improvement of institutional capacity. The existing institutional set up for policy planning consists of: (a) Planning Commission, (b) Cabinet Division, (c) Finance Division and

(d) Establishment Ministry. The Planning Commission is presently in poor state and chronically falls short of its expected role in economic and social development policy planning for the country. The Planning Commission must play a lead role to steer Vision 2021. The role of Cabinet Division comes in respect of: (a) overseeing the performance of other ministries, divisions and agencies by initiating civil service reform including regulatory reform and reform of the Rules of Business and (b) redesigning and overhauling the field administration that provides linkage between field and the centre. The role of Finance Division comes in the area of sharpening the role of CAG over the public accounts. The role of Ministry of Establishment comes in respect of: (a) reform of the civil service; and (b) providing training and career planning of civil service incumbents specially the higher civil service.

(v) **Regulatory Reforms:** Reforms should be a continuous process. As the society moves ahead the need for newer reforms arises. A Regulatory Reforms Commission (RRC) should be set up on a permanent basis. The objectives of RRC for public sector should be: (i) to reform the existing regulations in the service delivery system of the ministries and the departments and agencies under them, (ii) to facilitate citizen's access to the services delivered by the government and (iii) to ease operation of private sector. RRC should have jurisdiction over all ministries and agencies and should encompass both private and public sectors.

## ***2.9 Targets and Strategies for Good Governance***

### ***Targets:***

- Develop a country specific governance measurement mechanism by **2011**
- Develop a composite set of Agency Performance Indicators for the Ministries/agencies by **2012**

### ***Strategies and policies:***

- Establish the constitutional basis of good governance
- Improve the institutional basis of governance by following the Rules of Business
- Keep the size of government within reasonable limit
- Improve development governance
- Improve recruitment, training, promotion and retirement policies of the Civil Service
- Establish and devolve power to local level governments
- Establish and sustain a powerful independent Anti-Corruption Commission along with a social movement against corruption
- Enhancing the strength of the police force
- Make the post of Ombudsman functional and effective
- Move towards a Fast-Track governance with measurement criteria for good governance

## *Chapter 3*

### **PROMOTING HUMAN DEVELOPMENT**

Human development encompasses not only education for children in the school going age but also provision of nutritious diet, abolishing epidemic disease, ensuring good health for all, and creation of employment opportunities for all our citizens. It also means skill formation and training of labour force for national and international employment.

#### **3.1 2021 Vision for Education, Training and Skills Development**

The presentation placed here follows to a considerable extent the National Education Policy 2009. It is envisaged that the educational scenario in Bangladesh by 2021 will encompass the following:

- An informed, knowledge-based, technologically-oriented, gender equitable learning society for all has been established. Every school aged boy and girl has access to primary level institutions with all necessary facilities and been continuing in school to receive quality education. All opportunities are provided to pre-primary children, young person and adults to meet their learning needs in a competitive world, both in the formal and non-formal sub-sectors of education without any gender based discrimination or discrimination based on income, ethnicity, livelihood, etc.
- Gender equality at all levels of education, for teachers as well as students, is a natural phenomenon both in the institutions including decision making, policy development and homes.
- All children enrolled in primary, secondary and tertiary level institutions have access to gender-responsive health, nutrition, water and sanitation, socio-cultural development and similar other services and activities, which ensure a fruitful learning and living environment for better life.
- The government, civil society, NGOs, the community and other stakeholders share the responsibility and work in order to achieve the Education for All goals and National Plan of Action for Education for All.
- Democratic practices and norms are visible at all educational institutions in the country. The people are enjoying fundamental human rights and participating in local level planning, organizing and managing quality of education.
- Universities and institutes of higher learning are being developed as centres of excellence for research and education so much so that they can be competitive in the global arena.
- TVET and skills development programmes are inclusive including gender in all sectors and consistent with the labour market demand as a result employment opportunities are created for all secondary and higher education graduates and residual drop-outs.
- A unified education system at the primary and secondary levels is taking firm roots as against existing segmented education system that creates exclusive population groups within the same society.

- Teaching learning in primary and secondary level will be improved in a way where private tutoring and notebook will not be a requirement.
- In all Primary, Secondary and Tertiary level curriculum, ICT education has been introduced as a compulsory subject.
- Teachers are being recruited through a separate Service Commission and getting enhanced salary consistent with their qualifications and experience.
- TVET and skills development programmes are of a higher quality, deliver competencies required by industry and deliver qualifications recognized in Bangladesh and around the world.

### **3.2 Promoting Education**

Education is directly linked to the building of a dynamic economy, an efficient system of governance and secular democracy and an enlightened progressive society. Illiteracy and democracy cannot run together. Recent experiences of developing countries suggest that successful implementation of population policies such as delayed on-set of marriage and child birth, and reduction in family size, depends to a great extent upon successful education of girls. Education, health, nutrition, family size and employment reinforce each other. Education is very essential for developing the foundation required for a highly trained force. It has been veritably designated as the foundation of growth in productivity, income and employment opportunities, and for the development of science and technology. Education is the base for the benefits of the information revolution and the consequent ‘Digital Bangladesh’; which, in turn, is opening up the whole world before us. In fact, an effective education policy forms the basis of all spheres of national development and improves quality particularly in mathematics and science.

The relevance of human development for the Perspective Plan stems from two key considerations. First, a strategy for accelerated growth in per capita income to reach the middle income status by 2021 cannot be achieved by the conventional development strategy relying on agricultural and rural non-farm sectors combined with RMG exports where the key requirement of human capital is access to primary education. Additional growth must come from skill-intensive manufacturing where access to secondary education is a key driver and from services sector where access to post-secondary education becomes a key parameter of success. In short, if the past growth was mainly driven by physical investments, the subsequent growth to reach middle income status has to be based on deliberate and conscious accumulation of human capital.

It is envisaged that growth and human capital accumulation feed into each other: threshold level of human capital provides additional growth momentum, while sustained growth provides incentive to private economic agents for deliberate human capital accumulation. The goal of the public policy would be to ensure that such two-way linkages between growth and human development forms a mutually reinforcing virtuous cycle.

Second, human development is important not just for accelerated growth or for achieving the middle income status. Many of the middle income countries still suffer from deprivations in some elementary dimensions of education and health. This suggests that achievement of these human development indicators need to be seen as an intrinsic goal of development, as part of decent citizenship and

development rights. India provides a striking recent example of achieving the Middle Income status without making commensurate improvements in several key human development indicators. In respect of child malnutrition, CPR, TFR, sanitation, measles vaccination as well as female enrolment rate at secondary level India's performance is either at par or worse than in Bangladesh.\*

**Education Vision 2021**  
**Net Enrolment at Primary Level 100% by 2021**  
**Literacy 100% by 2014**  
**Make degree level education free by 2013**

### 3.2.1 Literacy

The literacy rate in Bangladesh has increased substantially in the last quarter of the 20th century. In this respect, we have done better than some other LDCs, and even some middle income countries, but still we have a long way to go. The present male literacy rate of 57per cent and female literacy rate of 48per cent are far below than the LMI reference countries. We have already net primary school enrolment of 91per cent, compared to 91per cent in LMI and 94per cent in UMI countries. Considering our high net primary enrolment rate, Vision 2021 has put a target of 100per cent in net enrolment and in the literacy rate in 2010 and 2014 respectively.

### 3.2.2 Pre-primary Education

**Preschool education** is the provision of education for children before the commencement of statutory education, usually between the ages of three and five, dependent on the jurisdiction. Preschool is also known as nursery school, day care or kindergarten. There are provisions for pre-primary education for one year.

Preschool work is organized within a framework that professional educators create. The framework includes structural (administration, class size, teacher-child ratio, etc.), process (quality of classroom environments, teacher-child interactions, etc), and alignment (standards, curriculum, assessments) components that are associated with each individual child that has both social and academic outcomes.

However the following main themes are represented in pre-primary education system:

- Personal, social and emotional development
- Communication, including talking and listening
- Knowledge and understanding of the world
- Creative and aesthetic development
- Physical development
- Mathematical awareness and development

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\* The performance of some other countries in the Lower Middle Income Group appears similarly disappointing, as in the case of Indonesia (CPR, TFR, sanitation); Thailand (longevity); Sri Lanka (child malnutrition), not to mention some of the African countries such as Angola and Cameroon, or Latin American countries such as Bolivia, Nicaragua, and Dominican Republic.

The pre-primary school curriculum addresses the holistic development of children in order to develop their physical, emotional, cognitive, communication, including talking and listening skills. The curriculum of pre-primary education is 'play and activity' based and covers the subject areas: Bangla, Mathematics, and Science.

By 2021 most pre-primary children (aged 3-5 years) will be attending early childhood education (ECE) programmes of some kind and will have access to programmes of health, nutrition, social, physical and intellectual development before initiation into the formal education system.

### **3.2.3 Primary Education**

The duration of primary education will be extended from five years to eight years. There is provision for pre-primary education for one year. Quality of education is an area that has to be ensured in all schools irrespective of locations such as rural or urban. A core curriculum will be followed by all types of schools (Bangla medium as well as English medium) to ensure that all children in the country are adequately prepared on national aspects such as culture, history and geography.

Gender equality at all levels of education, for teachers as well as students, is automatic. Educational institutions will provide training and sensitization along with enforcement measures to ensure that girls and woman are not subjected to discrimination, harassment or violence. A child friendly pedagogy in all classrooms in all schools is envisaged. The approach will be an inclusive.

#### **3.2.3.1 Key Issues and Challenges of Primary Education in Bangladesh:**

The challenges to be faced to ensure quality education for all children are summarized below:

- Ensuring inclusiveness and access to primary education by extending the duration of primary education from the present 5<sup>th</sup> grade to 8<sup>th</sup> grade so that enrolment of hardcore population and location will increase
- Upgrading the curriculum to the need of 21<sup>st</sup> century which address gender equality and are relevant to better livelihood for increasing quality of learning outcome by establishing a uniform system of primary education for girls and boys
- Decentralizing the primary education administration and management system with a view to developing a good mechanism for the supervision and monitoring of primary education by introducing a separate primary education cadre
- A mechanism has to be developed by involving NGOs in the mainstream education programme to improve access, quality and infrastructure so that community especially parental participation is ensured to better the quality of education

### **3.2.4 Non-formal/ Mass Education**

The NFE Policy Framework 2006 aims to provide access to lifelong learning opportunities for improving quality of life and creating a learning society. The target population of the government and NGOs NFE projects include out-of-school children, school drop-outs, adolescents and young adults as well as urban slum-dwellers' working children engaged in hazardous occupation. All left out

illiterate, semi-literate and new-literate young persons and adults will have access to learning opportunities for basic education, adult literacy, and continuing education, including skills development for jobs or self employment. This learning should be nationally recognised where possible, and will be linked to the new National Technical and Vocational Qualifications Framework (NTVQF) so that opportunities for further learning are not denied.

### **3.2.5 Secondary Education**

By 2021, it should be possible to provide quality primary and secondary education to every child. No child should be left outside this education system on grounds of her/his family income level, gender, religion, ethnicity or disabilities. Measures will have to be taken to improve the training and quality of the teachers. Management practices will promote an increase in women's ability to provide leadership in the governance of secondary education.

#### **3.2.5.1 Key Issues and Challenges of Secondary Education in Bangladesh**

The challenges to be faced to overcome the major educational issues on secondary education are summarized below:

- Improving the relevance of secondary curriculum, especially for livelihood improvement and encouraging maths and science education through improving teaching learning in the classroom and learning outcome.
- Increasing demand-side improvement in the quality of education and peer work in the class for further developing the classroom scenario by introducing mentoring activities to develop leadership quality among the students
- Improving Maths, Science and Language education and wider use of computer and its inclusion in curriculum
- Reducing urban-rural gap, differences between Madrasha, English and Bangla medium schools by modifying madrasha curriculum and learning materials in order to integrate "modern" knowledge and bring the madrasha education closer to the general education stream.
- Sustaining gender equality and equity for secondary education
- Public private partnership institutionalization to increase access
- Reforming the examination system in order to assess creativity, knowledge and problems solving skills of students rather than memorization. Setting up a separate exam centre in each Upazila
- Strengthening the quality of curriculum, facilities and instruction of skills training developed through secondary school programmes such as the SSC(VOC) and HSC(VOC).

#### **3.2.6 Integrated and Unified Education System at Primary and Secondary levels:**

This is a provocative issue, but the nation should come to grasp it sooner or later. Some phasing of the target may be called for; but the goal must remain if necessary beyond the Vision 2021. A unified education system at the primary and secondary levels will be taking firm roots as against existing segmented education system (e.g. Bangla-medium, English-medium, Madrasah system) that creates exclusive population groups within the same society. The existing segmented streams in primary and secondary education in Bangladesh create socio-economic and intellectual discrepancies, which are detrimental to social justice and solidarity. Since it is not possible to change



the systems over night, the curriculum needs to be prepared coordinating the different streams so that the major parts of the streams become consistent. The integrated, or unified, system stipulates a set of core subjects with choices for optional subjects. These schools have uniform curriculum for core subjects (Bangla, English, Maths, Science, Social science etc.) and optional subjects (e.g. Islamic studies/religious studies, foreign languages). All students at higher secondary levels should be able to achieve a functional knowledge of English language, enabling them to understand all textbooks for higher education. All secondary schools, public or private, rural or urban, will have been improved to offer uniform standard of education and have at least, comparable teaching staff, laboratory facilities, computer facilities, libraries and so forth. Pending such unified system at the primary and secondary levels, attempts will be made to modify Madrasha curriculum and learning materials in order to integrate 'modern' knowledge and making Madrasha education closer to the general education stream. Free education and textbooks up to secondary level have to be ensured at the close of Vision 2021.

### **3.2.7 Tertiary/Higher Education**

Tertiary education system, very much diversified in the country in different streams such as general, technical, professional, Madrasha, engineering, agriculture, business and medical streams need further improvement in quality both at public and private institutions. UNDP has also indicated several causes of low quality in tertiary education such as inadequate professional preparation of teachers in subject matters and teaching methods, a lack of academic supervision, limited encouragement and resources for research, a lack of teacher and institutional accountability, and a lack of sufficient textbooks and reference materials.

***Improvement in Higher Education:*** Enhanced opportunities for research will be provided by establishing centres of excellence in some of the institutes of higher learning. There will be a considerable number of public and private universities and research institutes in the country. Attempts will be made to improve the quality of teaching, library facilities and research. The goals for all universities are to meet the standards of international institutes of higher learning. Current public expenditure on education as percent of GNP (Gross National Product) is 2.24per cent which should be at least 5.5per cent by 2021.

#### **3.2.7.1 Key Issues and Challenges**

The challenges to be faced to overcome the major educational issues on higher education are:

- Upgrading the curriculum to meet 21<sup>st</sup> century challenges improving teaching learning in the classroom and learning outcome
- Integrating ICT in the curriculum irrespective of stream and encourage computer aided learning at the secondary level by establishing a coherent and comprehensive policy framework with clear national priorities in the education sectors and reduce the urban and rural gap
- Linking TVET curriculum to local industries and business needs and higher studies
- Reducing session jam and politicization in higher education
- Introducing a fair, non-political system of recruitment and promotion of teaching staff.
- Introducing a special salary scale for teachers and ensure accountability and commitment implementing private university act to enhance quality education and a standardized system

## **3.2.8 Some Strategic Issues in Education Development**

### **3.2.8.1 Decentralized education system free from party politics**

The Bangladesh educational environment will be internationally competitive by 2021. Our engineering and scientific pursuits and products will be of international standards. Students will be encouraged to mark for their dependability, leadership, co-operative zeal, and sense of positive competition. To achieve such norm, the political parties will have to disengage themselves from using the students for narrow political reasons and interests. Administrative functions of educational institutions shall have to be based on transparent policies in respect of awarding of seats in the halls, or appointment of new teachers, contract awards and purchases by these institutions.

Students will be encouraged to express their free opinion on national and international issues through a respectful dialogue and debate oriented political process. The student unions shall be turned into civic societies and training centres for an enlightened democratic process.

### **3.2.8.2 Administrative decentralization**

Dhaka-based administration, particularly for secondary and college education, should be decentralized in a manner so that authority does not become centralized in a single person; collision of power does not arise among different persons and agencies; problems are solved more quickly and at the local levels; and school/college authorities do not need to come to the capital for all official matters like MPO, time scale, transfer. Regional directorate office should be established to deal with these issues.

### **3.2.8.3 Community management of local educational institutions**

A mechanism shall have to be devised to ensure accountability of school teachers to the local community and to ensure school facilities (i.e. toilets, potable water, and safety issues) that meet the needs of both girls and boys. School boards could be established at the district level which could have the authority to recruit and train teachers. Local Community members and respected personalities, along with parents' representatives, should be a part of school management committees. Community engagement especially guardians' responsibility towards better teaching would be forecast and ensured.

### **3.2.8.4 Private sector responsibility for increased investment and cost sharing in education**

While government budgetary share to education may have to be doubled in the foreseeable future, private sector assistance in education, both investment and current expenditure may yet improve the situation. Conducive social environment will have to be created for such private sector contribution to education and community development including parks, stadiums, orphanages, and hospitals. Training of teachers and expansion of peer approach/ students mentoring activities in the secondary and higher secondary levels are areas where NGOs can supplement government efforts. To continue the process of developing teachers, 'Teachers' Forum' can be introduced. Arranging special class for poor performing students and developing 'bridging materials' for them would be ensured so that they can develop confidence in receiving classes equally with better students. Competitive science and maths fairs will be scattered in all the secondary and higher secondary levels. In the interest of both equity and resource mobilization, higher education is financed increasingly through greater cost sharing with beneficiaries, thereby also making it less dependent on public sources. Higher education may end its isolation by establishing better linkages to markets and the world. Information technology makes independent study much more the norm: the general people

have ready access to continuing education or alternative degree programmes through the auspices of the Bangladesh Open University. The violence spawned by criminal activities should be eliminated from the public university campuses long before 2021. Private coaching by salaried teachers should be stopped if necessary by increasing salaries and allowances. Real learning and creativity of students will thus be increased discouraging memorization.

### **3.2.8.5 Use of Technology in Education and Computer Literacy for All**

Integration of technology in teaching learning process, teacher development process and skills development is a must to cope with the 21<sup>st</sup> century. Computer aided learning would be given special emphasis so that students become able to handle technology smoothly.

Computers are likely to become relatively cheaper in the next few years. Rural electrification will also be ubiquitous. Such a situation should enable us to aspire for computer literacy at the primary school level. This will enable our students to interact with students from far and wide via the internet and bring the whole world of learning at their doorstep.

There is no alternative to exploring the full utility of modern technology for quality improvement in primary and secondary education. An Educational TV channel could be engaged for this purpose.

### **3.2.8.6 Teacher Development**

The teacher has to be seen as centre stage in the strategy to improve educational quality. Appropriate policies are needed to attract talented and inspire young people to the teaching profession, keep them in the profession, and create a critical mass of talented teachers in the education system. A national education service corps can thus be created with stipends and promises of better remunerations on condition of at least five-years of service in the public system.

As rural areas see comparatively under prepared teachers, students of these institutions become deprived of quality teaching and produces poor quality graduates. Measures would be taken to attract better and qualified teachers to serve in rural areas giving them benefit package than the urban areas.

Teachers' recruitment, training, professional support, and remuneration are important elements of the strategy for improving quality in education. A Teacher Recruitment and Development Commission should be established to recruit teachers and support their professional development. Teachers' status, special incentives and training (home and abroad) have to be ensured. Teachers have to be encouraged and given opportunities to do research in their fields, in teaching methodology, in curriculum development, and in methods of assessment.

Minimizing disparity between over-served and under-served areas, particularly in respect of primary and secondary level institutions is important. All teachers will receive quality teacher training before becoming regular teachers in the institutions. Regular in-service training for teachers will be arranged after an interval of 2-3 years.

## **3.3 Promoting Science and Technology**

### **Objectives and policies:**

- Creating a generation educated in science and technology

- Encouraging R&D in government and private sector and increase the percentage of GDP spent on R&D
- Establishing science and technology parks
- Spreading vocational education for work at home and abroad.

### **3.3.1 Technical and Scientific Education**

Expenditure on Research and Development (R&D) is an index of a country's orientation to science and technology. Bangladesh's expenditure on R&D in 2005 compares favourably with some of the Lower Middle Income or even Upper Middle Income countries. India & China spend on R&D 0.85 per cent and 1.44 per cent of GDP respectively. Bangladesh currently spends 0.62 per cent of GDP on R&D, which is higher than those for some of our neighbouring countries or even some LMI countries. However, better performance in this regard must be attempted.

The problem of weak innovation and use of low level of technology by manufacturing enterprises can be addressed by providing incentives for R&D, developing an institutional structure conducive to technological development, and promoting FDI to facilitate technology transfer. Our universities of science and technology, together with other general universities have to move forward with R&D, training men and women professionals in technology to meet the demand for such expertise which should be enormous in the context of changes in investment and growth stipulated in the industries and services sector by 2021. Private sector initiative and investment including those from the corporations or foreign universities should be encouraged.

In Western countries, a large proportion of scientific research at the university level is financed by business. India has established Science and Technology Entrepreneur Parks (STEPs) which have succeeded in promoting application of technologies and new business start-ups. R&D can not only propel industrial growth but also become a growth industry, employing scientific and technical personnel. IT sector and corresponding software development is an example of research and technology development.

Realizing the importance of science and technology in general and ICT (Information and Communication Technology) in particular, GOB formulated National Science and Technology Policy and National ICT Policy of the country. Moreover, appreciating the potential of biotechnology in agriculture and health, National Biotechnology Policy has already been adopted.

Science and Technology Policy is cross-cutting with many other thematic groups such as Education, Infrastructure Development, Employment Generation, Private Sector Development, Agriculture, Health Including Nutrition, Small and Medium Enterprises(SME) and gender equality. Science and Technology Policy including ICT will be primarily dealing with the overall policy leaving details to the concerned sectors. However, this will also initiate some of the activities that are expected to change the course of development of the country and contributing to move to a higher level of development.

### **3.3.2 Technical and Vocational Education and Training (TVET)**

Information on proportion of labour force in the 20-24 (or so) age group having received formal vocational training is an important statistics. It is 5per cent in India compared to 28 per cent in Mexico, 60 to 80per cent in most industrialized nations (as much as 96per cent in Korea). A strategy

to achieve nearly full employment by 2021 must ensure that all new entrants to the work force are trained formally to enhance their knowledge, skill and creativity.

Most of our vocational training is conducted in classroom style offering one or two year diploma courses. However, some vocational skills do not lend themselves to class room or laboratory study. A comprehensive strategy is needed for ensuring full-scale vocational training.

Both the private and public sectors, following the range of vocational training needed, should expand the network of vocational training institutes. The private sector which came forward to train the computer techniques would also be capable of organizing training of many of the trades and skills, once they are initiated to an understanding of the potentials of vocational training in different fields. Vocational training institutes are a very good entry point for promoting the role of women in non-traditional areas (i.e. scientific services, trades, technical areas, finance, nursing, ICT, management, etc.) so that the skilled labour force in the country is increased. As new areas evolve, a strategy to promote and increase women in TVET needs to be put in place.

The great surge in 15 - 35 age groups among the population requires creation of employment opportunities. This could be attained only through provision of training for self-employment and/or employment in small and medium enterprises. Vocational education and training are strengthened as a result employment opportunities created for all secondary and higher education graduates and residual drop-outs.

Agricultural colleges and universities cater to the creation of agricultural scientists and extension officers. What is now needed to complement such university education in agriculture are the Indian type “krishi vigyan kendras” which offer short and medium term courses for men and women farmers on specialized subjects in crop production, psiculture, horticulture, poultry rearing and dairy farming. Educated farmers could be trained as self-employed instructors to operate the farm schools profitably. Bangladesh’s density of population and consequent land scarcity will call for maximum leverage to increase production, sometimes doubling of yields of important commercial crops and fishes. Only through such training the knowledge gained in the universities could be transferred to the nook and corner of the country.

Different types of vocational training could be planned, including those in the emerging trades such as accounting and financial services, graphic design, animation, etc. Management and engineering positions in commercial and services sectors will need newer type of skills. Industry should be given a greater role in setting the standards for VET and skills training and should also be invited to assist government identify the skill needs of the economy in coming years. Income and remittances will increase substantially if workers could be sent with appropriate skills and training. Besides traditional job markets in the Middle East, future job opening are also widely expected in European and East Asian markets where unskilled hands will be under utilized and grossly under paid.

Although very few girls traditionally entered into Technical, Vocational Education and Training (TVET), appropriate measures such as stipend program should be taken for increasing the rate of female enrolment. Despite their keen interest for TVET, many potential admission seekers cannot take advantages of private TVET opportunities due to high expenses. This raises the issue of Private-Public Partnership in TVET to promote greater equity in availing opportunities.

## Health

### 3.4 Promoting and Sustaining Health

#### Introduction

Recent researches have shown that improved health of the population can simultaneously contribute to acceleration of growth rate and poverty reduction in several ways. Certain parameters are usually associated with the health endowment of a people. Common among these are life expectancy at birth, infant and maternal mortality rates, crude birth or total fertility Rates (TFR), rate of immunization against common communicable diseases, etc. Measured against these parameters, Bangladesh has achieved substantial improvement in the health status of our people during the last two decades.

Despite the improvement, much still remains to be done to improve the health of our people. Serious gender health problem persists in Bangladesh. High fertility rates, particularly among young girls and poor nutrition constitute a major health problem in Bangladesh. Anaemia among women and child bearing age is extremely high. Diarrhoeal diseases are still a major killer despite being easily treatable with known medical help. Communicable and poverty related diseases that are preventable still continue to remain as top ten causes of morbidity. Over the last decades the health status of the people of Bangladesh has significantly improved and life expectancy at birth has increase from 49.0 in 1980 to 63.1 in 2005. Health seeking behaviour of women during pregnancy and childbirth is still far from desired. Complications during pregnancy and child birth are a leading cause of death and disability among women of reproductive age in Bangladesh. The presence of skill attendants at birth is only one-fifth (20 per cent) of all births. This percentage is even lower in slums and tribal areas. More than 90 per cent of deliveries are taken at home. Three fourths of births in Bangladesh are assisted by traditional birth attendants (TBA). Only 18 per cent receive post-natal care (PNC). The situation is even worse in the lowest quintile of the population. Maternal mortality had declined by an estimated 36 percent between 1986 and 2000, but remains relatively high at 320/100,000. In the mid-Seventies, the infant mortality rate (IMR) was 153/1000 live births. By 2007, it had declined to 52/1000. Under-five mortality (U5MR) is estimated at 65/1000 in 2007. Immunization coverage has remained fairly high.

In Bangladesh, HIV incidence is low, including among sex workers as with other populations. However, the incidence rises dramatically among those who use intravenous drugs. There are 15 brothels, where 38,000 sex workers are registered, and several NGOs regularly screened for various STDs. The few found to be HIV positive reported that they were drug users or had sexual partners who were. In view of this, the threat of AIDS and its possible consequences, all communities and NGOs involved in providing preventive and curative health services should give top priority to STD/STI and HIV/AIDS services, and increase the required resources sufficiently. There is also an urgent need to integrate reproductive health services with current family planning and maternal health services to expand their accessibility mainly to women. HIV/AIDS is closely linked to poverty and gender inequality. Without addressing gender discrimination and poverty, efforts to prevent HIV/AIDS or sustainable development in this sector are likely to fail.

TB and malaria along with the emerging scourge of arsenic poisoning continue to play havoc with public health problems. Determined commitment to improving gender responsive public health can dramatically reduce the incidence of infectious diseases within one or two decades.

Non-Communicable diseases may also emerge as public health problems with demographic and epidemiological transitions that are taking place. Cardio-vascular diseases, diabetes, cancer, respiratory diseases, etc. are emerging as major public health concerns. While improvements in their treatment are taking place in the country, the cost often is prohibitive. Road accidents constitute another public health hazard through crippling of many people. While public expenditures on these counts are projected to increase, modern and adequate medical insurance could mitigate the costs to the individual, family and society. In Sri Lanka, personal medical insurance has been practiced long since and such insurance goes a long way in mitigating personal cost and miseries. Public expenditures on health care for UMI country reference are about 2 per cent of GDP. Bangladesh has to double the current level of 0.9 per cent of GDP.

#### **3.4.1 Challenges to Public Health Services**

Among those seeking any care, the incidence of choosing unqualified or traditional providers is quite high (63 percent). Furthermore, the proportion of ill people going to public provider is significantly lower (14 percent) than those going to private providers.

#### **3.4.2 Targets of Coverage for Vision Goals**

In order to achieve the Vision goals, coverage of all types of healthcares have to increase steadily till 2015 when the MDGs are expected to be achieved, and, thereafter, while coverage of most of the services should be maintained at the level achieved by 2015, coverage of some services such as births attended by skilled personnel, post-natal care, and Acute Respiratory Track Infection (ARI) should have to increase more till 2021.

#### **3.4.3 Need to Increase Number of Facilities and Providers**

In Bangladesh, there has been a major improvement in the number and distribution of healthcare facilities. Up to 1999, there were more than 1,200 private and public hospitals with 43,293 beds, of which 74 percent are in the public sector and the remaining 26 percent in the private sector: offering one bed for 3,000 persons. There are 29,746 doctors registered in Bangladesh but many are employed or are studying abroad. The resulting doctor-population ratio is 1: 4,000. In addition, the information about the supply of medical staff relative to demand is anecdotal. But, it is clearly inadequate for health care need of the population. Informed opinion suggests that there is over-supply in urban areas, particularly in Dhaka and in Chittagong, and under-supply in rural areas. Nevertheless, the Upazila health complexes are over-staffed compared to demand.

Nurses are another important workforce in the health sector. Bangladesh has extreme scarcity of trained nurses. There are approximately 22,500 registered nurses in Bangladesh, fewer than registered doctors. Further, the international standard for nurse-patient ratio is 1:4 for general care and 1:1 for intensive care. In Bangladesh nurse patient ratio is 1:13 for general patients.

There appears to be a great shortage of midwives compared to the need exemplified by low ANC and supervised delivery rates. In order to address this situation government of Bangladesh has launched many programmes. Government of Bangladesh initiated TBA training program in the late seventies to provide at least one Traditional Birth Attendant for each village. In 2003 government conducted a programme of providing Skilled Birth Attendant (SBA) Training to CHWs of government. Second, the size of UHC is same everywhere, irrespective of the size of the population and people's need for healthcare. Third, the FWCs lack the providers who are sufficiently qualified to

provide some of the essential services. Fourth, the community clinics have not been established in most of the areas and even those already established have not been made functional.

***Provision of Adequate Facilities:*** In order to overcome the problem of inadequacy of facilities, a few measures are to be adopted. First, in Upazilas in the remote and inaccessible areas as well as in the large Upazilas of the country one or two FWCs away from the UHC should be expanded and upgraded to the level of mini-UHCs, so that the people of the adjacent villages can have access to most of the services of an UHC without going to the UHC proper. Second, the size of UHCs in the large Upazilas should be considerably increased so that the larger population can have easy access to the UHC services. Third, the community clinics should be established and activated in all wards of all unions. Finally, allocation of government revenue in the health sector among the Upazilas should be based on health care need of the population, and not on the number of facilities.

***Adequate providers and other inputs:*** Quality of medical education should significantly improve, along with increased motivation of the medical graduates toward pro-poor service delivery and properly dealing with the life and death question (health) of the people. The capacity of the existing training institutes should increase in terms of space and number of qualified trainers, and new training institutes, especially for nurses and medical technologists, should be established.

***Voluntary health insurance*** could be encouraged to meet some of the costs of medical expenses. A liberal, welfare oriented society is expected to exist to ensure a Medicare system which may look after the old and the indigent.

The government has to adopt several measures for achieving the Vision 2021. The number of facilities and skilled workers has to considerably increase, quality of care and economic efficiency of resource use have to significantly improve, the institutional changes to increase coordination between the wings of the ministry and between the government and the NGOs should be brought about, the private sub-sector and the NGOs should be strictly regulated, and the primary stakeholders should be increasingly involved in the service delivery activities. There is ample scope for improvement in doctor – patient relation in the country, based on right kind of human relations.

#### **3.4.4 Efficiency in Resource use in the Health Sector**

In the health sector (as in most other public sectors) of Bangladesh resource use is highly inefficient, causing huge wastage. Elimination of their wastage alone could benefit a large number of people, specially the poor. Many physicians do not stay or work in their places of work. Input-mix is far from appropriate: the proportion of nurses and medical technologists to doctors is much lower than required; equipments do not exist or are not in order although providers and technologists exist in many places, and inputs are often procured at higher than market prices.

The measures to be adopted are (i) the ministry has to ensure that each provider properly works for full duty-time in the place where he/she is posted, private practice by the public providers should be seriously controlled so that the public providers sufficiently work in the public facilities, and the undue interventions of the monopolist associations of some providers to the proper functioning of the sector is completely eradicated; (ii) the number of support providers (nurses, technologists, birth attendants) should rapidly increase, so as to change the present reverse input-mix situation; and (iii) in case the qualified doctors are not willing to work in the FWCs in the rural areas, the post of Senior Nurse can be created. Some of the present nurses (who obtain two years' training in nursing) can be trained for another two years and posted at FWCs to competently deliver most of the essential services.



### **3.4.5 Health and Family Planning Coordination**

The two wings of the sector, Health and FP, work separately and lack coordination, although many services have to be delivered jointly. A number of measures are needed. First, even if the two wings cannot be integrated and brought under a unified authority in the near future, coordination between the two at the field level must drastically improve. A coordination cell should be created and given sufficient authority to do so. Second, the local level bodies (specially the Upazila and Union Parishads) should be assigned with some tasks of supervision and monitoring of the activities of the providers. Third, a powerful body should be created to regulate the activities of the private sub-sector. The body should consist of the government personnel, private providers, community members and representatives of the consumers' associations. Fourth, health sector administration should be greatly decentralized; greater authority and responsibility can be given at each level. This will enhance competitiveness among the facilities and enable the local administration to perform more.

### **3.4.6 Public Health Facilities**

Besides Medicare, public health services will be improved considerably. Access to clean water and sanitation could be envisioned for 2021 through access to piped water, well maintained sewerage systems, environmentally sound hospital and industrial waste disposal etc. Arsenic problem in rural tube wells has put a damper on clean rural water supply, but measures will be found through supply of piped water in rural community through government and community initiative to dig deep tube wells. Research on arsenic mitigation has to be continued. Safe disposal of waste materials, monitoring the quality of water, on going education on good hygiene practices etc. should continue and be strengthened.

### **Strategies and policies**

- The number of service providers like nurses, doctors, specialists, etc. has to be increased and doctor-population ratio or nurse-doctor ratio has to be up scaled.
- TBAs, SBAs and midwives need to be increased.
- Number and size of UHCs, FWCs are to be streamlined with FWCs away from the UHCs especially in large Upazilas.
- Quality of Medical Education to be improved
- Motivate Medical Graduates to pro-poor delivery of health services
- Bio-technology, tele-medicine, training institutions especially for nurses and medical technologists could be expanded
- Community clinics in all Unions could be established
- Efficiency in the resource use in the Health Sector is to be improved
- Health and Family Planning co-ordination is to be improved
- Public Health facilities like pure drinking water, sanitation is to be improved
- Private sector Health Insurance may be encouraged.
- Increase awareness about diabetes, hypertension, strokes and obesity which portents to assume pandemic proportions in the next two decades.

## **Nutrition**

### **3.5 Improving Nutrition**

From a nutritional standpoint food security is ensured when households as well as all the individuals within those households have the resources to obtain adequate, appropriate and safe food

for a balanced diet and a good physical condition for the proper utilization of that food. These will take considerable time to ensure.

### 3.5.1 Process and Consequences of Malnutrition

Consecutive Nutrition Surveys conducted since 1962-64 have shown that Bangladesh always has been obliged to go without adequate food and nutrition. Since then it was evident that a great majority of population suffer from different degrees of malnutrition like protein-energy malnutrition (PEM), different micro-nutrient deficiencies like vitamin A deficiencies (VAD), iodine deficiency disorder (IDD), Iron deficiency (ID) and iron deficiency anaemia (IDA), other micronutrient deficiencies like calcium deficiency disorders (CDD), vitamins like vitamin C and B .

**Physical retardation in population of Bangladesh:** Consequences of malnutrition is indicated by anthropometry and include childhood morbidity and mortality, poor physical and mental development, poor school performance and reduced adult size and capacity to do physical work.

**Micro Nutrient Deficiency/Hidden hunger in Bangladesh:** Even though most nutritionists believe that no more than 55-60 per cent of energy should be obtained from cereals almost 70 per cent energy has to be obtained from carbohydrate in foreseeable future. Thus, the calorie share of protein would be 15 per cent and that of fat and oil intake would be no more than 15 per cent or so. Thus, Bangladesh is undergoing a nutrition transition with high levels of malnutrition.

**Stunting:** One of the important health outcome targets given by WHO (1998) in its revised Health for All in the 21<sup>st</sup> Century is that “the percentage of children under five years who are stunted should be less than 20 per cent in all countries and in all specific sub groups within the countries by the year 2020”. Stunting may be a better indicator of well being for populations of children than is underweight, because under weight is affected by weight recovery for some children between 2-5 yrs of age and some children being overweight. They do not grow up as clever, as healthy and as tall as they should

**Unbalanced Diet:** In Bangladesh the problem is not only inadequacy of food intake by majority of the people of the country but also unbalanced diet. Most people assuage their hunger by eating rice and some leafy vegetables. In other words, most of their calories and other nutrients are obtained from carbohydrate and very little from protein and fat.

### 3.5.2 Suggested Food Intake between 2009 and 2021

We made a projection of suggested food intake for 2009 to 2021, although one can think that it is also highly ambitious and may not be very easy to achieve the target for immediate future if we see our projected population based food production.

With daily calorie intake of 2250 kcal, the consumption of constituent food items change markedly between 2009, and 2021. While intake of cereals change from 455 gm/person/day in 2009 to 359 gm/person/day in 2021, the intake of other food item change for higher quantities. This will reduce the requirement of cereals from 70 per cent to 55 per cent in 2021. Such reduction in cereals consumption and enhancement of other food items required by tenets of nutrition will require great changes in life styles, education in food sciences etc. Diversification of the diet should ensure larger intake of fruits, vegetables, dairy products, sugar, oil and pulses, eggs, fish and meat products. This will also reduce the intake of calories from cereals. In the final analysis, changes in nutrition could take place mainly through decent employment and income generation as well as improved decision-

making by women in spending household income. Provision of safe drinking water, improved health care and education for all women should be considered as essential and comprehensive strategy to eliminate malnutrition and to achieve health for all by 2030 or beyond.

### **3.5.3 Meeting the nutritional needs of 85 per cent of the population**

Whether the nutritional target will be served for 85 per cent of the people is a major question is. While people above the poverty line will be 85 per cent and their will be land released from rice through increased yield enabling greater diversification of farm products including fish and poultry fulfilment of the target would be possible.

Proposed cereal intake in 2009 was 455gm which yields about 70 per cent of total calorie. In 2021 the cereal intake was proposed to be 359gm which yield about 55 per cent of total calorie (2250 kcal). The question remains on the possibility of production of other food items required for a balanced diet. However, efforts in this direction must continue. Animal food (such as meat, fish, egg, milk and milk products) intake has been scaled up accordingly to provide better quality of protein and other nutrients and increased percentage of bioavailability of minerals such as iron, zinc, selenium, vitamins etc. This is also a contributor of some fat nutrient to the total calorie.

With regards to intake of fruits and vegetables it will be gradually increased from 150 gm in 2009 to 230 gm in 2021. These will contribute in the reduction of micronutrient deficiencies such as minerals and vitamins. These are the potential sources of phytonutrients, antioxidants to act as protective functions against many chronic diseases.

The proposed intake of added oil is about 40gm in 2021 which will yield about 15.86 per cent of total calorie. This will partially fill up the gaps of requirement against 30 per cent of total calorie. This is essential for ensuring better absorption and utilization of fat soluble vitamins including  $\beta$ -carotene, and fatty acids essential for health. There is a decreasing trend in pulse intake in Bangladesh over the decade. There is a long term and serious defect in our diet causing the deficiency of vitamins, proteins and to some extent calories and phytoestrogens. This will contribute about 7per cent of total calorie in 2021. Intake of potato and sugar will be increased gradually to reach the proposed target in 2021.

### **Strategies and policies**

- Reduction in poverty and substantial increase in income and employment
- Improved education in health and hygiene
- Reduction in the incidence of diarrhoea, dysentery, and stomach worms
- Use of pure drinking water
- Diversification of agriculture, reducing land under rice, to produce more vegetables, fruits, pulses, fish, dairy products, poultry, other protein etc
- Improved knowledge about balanced diet, etc.

## **3.6 Population Policy**

In 2021 Bangladeshis will be more numerous, better educated, healthier and more prosperous than at any time before, having eradicated the scourge of famine and 'monga' that plagued this part of the world for centuries. They will be striving hard to get more nutritious food including micronutrients while ensuring safety net against vulnerability.

However, without substantial reduction in population growth, even high growth in the economy will be dissipated by burgeoning population; all hopes of poverty reduction along with expectations of higher social development indicators will be dashed to the ground. Bangladesh needs a new population policy that will not only offer future targets of population but also convincing measures to attain these targets.

Bangladesh is in the process of a demographic transition from still high fertility, high mortality and growing population to low fertility, low mortality and stable population. Some of the demographic changes are a global phenomenon. Improved access to modern health care sharply decreased mortality rates and increased life expectancy at birth. Falling death rates have been followed by falling birth rates, but this decline has not been steep enough to take population to a stable state. Nonetheless, the achievement of Bangladesh in population planning has been considered laudable, even though we have long way to go to achieve a stable population.

### **3.6.1 The plateauing of fertility rate**

It is a phenomenon that has to be taken with due seriousness. The pace of progress in the Contraceptive Prevalence Rate (CPR) was quite substantial during 1991-2000, which shows an increase from 40 per cent to 52 per cent, but this progress has been rather slow recently. The BDHS (2007) reveals a CPR of 56 percent against the expected level of 65 per cent. This slow pace of progress may be attributed to replacing door step service with one-stop service, high adolescent fertility, early age at marriage, little multi-sector involvement in population activities, etc. All these have obvious impact on TFR. In 1999-2000, TFR was reported to be 3.3(BDHS, 2001). But since then, it has significantly declined to the level of 2.7 in 2007(BDHS, 2007).The percentage of modern method contraceptive users has increased which might account for this. Besides, breast feeding has also contributed to the decline in fertility. The burden of contraceptive use has been borne by the female. Advocacy should be strengthened for male participation in permanent and other methods of contraception. CPR has to be raised to 80 per cent in order to achieve a TFR of 2.2. Besides, adolescent fertility has to be reduced too. Vision 2021 has a target of 80 per cent CPR.

### **3.6.2 Population policy and targets**

Swift reduction in poverty levels would warrant an expeditious achievement of a replacement level of fertility rate. The current position of the Family Planning Sub-sector has the following targets for 2015 in this connection.

- Reduce TFR from 2.7 to 2.2
- Increase CPR from 56% to 80%
- Reduce unmet demand of eligible couples for FP supplies from 17.6% to 10 %
- Reduce discontinuation rate of contraceptive rate from 56.5 to 20%
- Strengthen program planning, monitoring and co-ordination among government agencies on population policy

This could be achieved with a two-pronged attack on the issue. On the one side will be supply of contraceptive materials; on the other will be on adequate emphasis on women's education and health care, women's employment, rapid urban growth, economic prosperity etc.

However, there appeared to exist a relative lack of seriousness with population management which was designated the number one problem in the First Five Year Plan of the country. The amalgamation of the Ministry of Health and the Ministry of Family Planning in the eighties does not seem to have brought about in the improvement in population management. Many countries in the

region are having two separate Ministries in this respect. The relative downgrading of the Family Planning staff and workers within the combined ministry is a fact of life and need not be washed away. With such widespread dissatisfaction in a Department entrusted with the task of supplying the contraceptive materials and motivating the eligible coupled and having a social movement for one or two child family, major success in population management may not materialize. Complaints were also heard about the delay in the procurement process of family planning materials under the ministry, even including the donor co-ordinating in this respect. Policies may include but not limited to the ones stylized below:

- Government may take up the responsibility for all educational expenses of the child from the couple having ONE child
- Ensuring employment to the single child according to his qualifications in government/NGO/private organizations.
- Ensuring free government medical treatment to the single child up to his maturity
- Introduction of social pension for the parents of single child in case of need
- Discriminate against parents of more than two children in terms of VGD/VGF or other safety net programmes

These will both publicise government intentions and overall social mood and policies for curbing population growth.

### ***Future population***

Bangladesh's national population policy goal is to achieve a TFR of 2.1(i.e. NRR=1) by 2016. Again, due to population growth momentum, population will keep growing even if TFR of 2.1 is achieved by 2016, as projected. Population is expected to increase up to 172.3 million in 2021 and 218.76 million by 2051 which means adding 70.0 million people more in 2051 compared to the base year. Therefore, managing such a huge population shall preoccupy all future governments of Bangladesh. It is incumbent for the nation to take bold measures to curb population right from now so that the nation is not confronted with such frightening prospects of population. There is a need to formulate a new Population Policy replacing the 2004 Population Policy.

### **Strategies**

One child policy per couple has to be adopted as soon as possible. Incentives for voluntary permanent methods of birth control may be further strengthened. Population policy will include actions designed for survival and healthy development of all children, improved health, education and socio-economic well being and empowerment of women, and for better nutritional status of mother and children, particularly the girl child.

Increase in the contraceptive prevalence rate (CPR) has to be vigilantly carried out through door to door service providers through rejuvenation of Family Welfare Service along with strengthening of social development like female education, health services, later marriage, and employment opportunities for girls and social movement for smaller family norm of one child per couple.

## Chapter 4

### INSTITUTING A PRUDENT MACROECONOMIC POLICY MIX

Macroeconomic framework is presented, the main purpose being determining targets, offering strategy and policy guidelines underling the Perspective Plan (OPP) FY2010-FY2021. Macroeconomic tools will contribute towards the achievement of the envisaged development vision by providing a prudent macroeconomic policy mix.

#### 4.1 Strategic Goals

The following construe the priority strategic goals of macroeconomic framework

- Promotion of equitable, environment friendly and socially sustainable pro-poor accelerated growth
- Acceleration of productivity growth
- Acceleration of own resource-based investment
- Acceleration of employment keeping in view the issues of gender dimension
- Stabilization of price level
- Promotion of structural transformation

The traditional macroeconomic indicators for a closed economy are growth rate of real GDP, unemployment rate and inflation. In the open economy context like Bangladesh indicators like saving, investment, poverty and some issues relating to the external sector also form important indicators of performance aside these. These issues are examined from long run perspective in order to identify the prospects and constraints and offer targets and strategies. These are done keeping in mind the development perspective of the Plan, trends of macroeconomic indicators and applying judgement on the estimates of dynamic macro-econometric model and time series analyses.

#### 4.2 Macroeconomic Framework

The macroeconomic framework of the Perspective Plan will support the strategies and policy guidelines for achieving the envisaged development vision through ensuring macroeconomic stability. For Bangladesh, the journey to the middle income country status requires sustained growth in the national economy along with ensuring its inclusive nature. The technical framework designed to predict growth and related dimensions of the macro economy shows that the economy needs to grow at a sustained high rate over the next ten years to be able to reach its vision (Table 4.1).

**Table 4.1: Key Macroeconomic Indicators**

|                                  | <b>Benchmark<br/>FY09</b> | <b>Target<br/>FY15</b> | <b>Target<br/>FY21</b> |
|----------------------------------|---------------------------|------------------------|------------------------|
| Real GDP Growth (percent)        | 5.9                       | 8.0                    | 10.0                   |
| As percent of GDP                |                           |                        |                        |
| Gross Investment (%)             | 24.2                      | 32.1                   | 37.5                   |
| Gross Domestic Savings (%)       | 24.0                      | 27.0                   | 30.0                   |
| Total government revenue (%)     | 10.4                      | 15.5                   | 17.1                   |
| Total government expenditure (%) | 13.8                      | 20.5                   | 21.8                   |
| Exports (billion US\$)           | 15.6                      | 36.3                   | 91.1                   |
| Imports (billion US\$)           | 20.3                      | 49.6                   | 131.3                  |
| Remittances (billion US\$)       | 9.7                       | 22.7                   | 48.5                   |
| CPI inflation (%)                | 6.7                       | 7.4                    | 7.9                    |
| Unemployment rate (%)            | 30.0                      | 16.0                   | 10.0                   |
| Poverty (head count, %)          | 36.0                      | 24.5                   | 14.4                   |

The Bangladesh economy has not sustained such high growth in the past; and achieving the proposed growth will require a substantial increase in the rate of investment. It is imperative that, in positioning for an accelerated growth, the country takes strong precautions to manage the negative social and environmental implications which may accompany such a high growth, such as high inflation, rising income inequality, and expanding regional disparity. Effective management of high growth will necessarily involve strong fiscal and monetary policy coordination as well as effective public-private collaboration. The macroeconomic policy framework will have to remain vigilant and responsive to any developments in the economy that may threaten desired stability and equity. The priority strands of the macroeconomic framework will be to align the macroeconomic indicators to become consistent and more effective in promoting growth and development. More specifically, the major thrusts will be to:

- Promote equitable, environment friendly, and socially sustainable accelerated growth
- Accelerate productivity growth across all sectors of the economy
- Maximize domestic resource-based productive investment
- Facilitate employment-intensive growth keeping gender perspectives in view
- Maintain a stable general price level
- Promote structural transformation in the economy as envisaged in the Plan

The growth in real GDP will rise to 8.0 percent in 2015 and further to 10.0 percent in 2021 to provide the required assault on unemployment and poverty and improve the living standards of the people. While factor accumulation, especially capital, will act as the major stimulus to growth for which gross investment rate will rise to about 38 percent of GDP in 2021, productivity growth will begin to play an increasing role and is targeted to contribute about 20 percent of economic growth by 2021. The new initiatives proposed in the areas of education, IT, R&D and science and technology will be the keys in this regard.

While the goal will be to maintain a macroeconomic framework that is consistent with sustained rapid growth, measures will be taken to ensure that fast growth does not lead to serious imbalances in fiscal operations, inflation, or the balance of payments. The private sector will be the leading actor in raising economic growth, and public investment will be restructured to become more effective in promoting growth and development. Although the domestic savings rate has improved, it needs to be further geared up for which several strategies will be adopted, e.g. reforms in the financial system to provide easy access of rural population and small savers to formal financial institutions; measures to divert an increasing share of remittance incomes to productive investments, and low inflation to facilitate more savings.

### **Public Revenue and Expenditure**

The revenue-GDP ratio is at around 11 percent in Bangladesh which is a strong impediment to meeting resource requirements in the public sector. In addition, the tax structure does not have a pro-poor bias: since the bulk of the revenue is generated by indirect taxes, mostly value added tax (VAT) at local and customs levels, while the contribution of direct taxes is only 25 percent. Besides low revenue productivity, tax evasion remains high. The target is to make the tax-structure more pro-poor by raising the contribution of direct taxes to the total tax revenue to at least 40 percent in 2021. The strategies to collect the required public revenues shall include the following:

- Broaden the tax base by raising both direct and indirect taxes through appropriate reforms and rationalization;
- Strengthen professional and technical capacity of the revenue administration for monitoring potential tax payers, countering evasion of taxes, and making available strengthened and effective services to the tax payers to raise tax compliance;
- Deepen organizational and other reforms of revenue collecting organizations to transform into quality institutions to meet the revenue needs, service requirement of tax payers, and facilitation of productive activities.

In general, a pro-poor bias is observed in public expenditure due to large spending in relative terms on social sectors like education, health, and social safety nets. There has been large expenditure on disaster management as well. Total public expenditure is, however, low; about 14 percent of GDP which is inadequate to meet the expanding needs of the public sector. In addition, the need during the Perspective Plan will be to make the budget an effective instrument of economic management within an integrated and accountable framework. The thrust will be to make public expenditure more pro-poor, environment friendly, and gender sensitive; improve the effectiveness of public spending; and establish accountability and transparency of public expenditure.

## **Inflation**

Bangladesh has succeeded in maintaining reasonable price stability in recent years. There has, however, been occasional spike in the inflation rate mainly due to supply disruptions due to natural disasters and global price shocks. Since a high inflation, especially led by food price inflation which is more common in the country, hurts directly the poor groups, the target will be to maintain a moderate rate of inflation of around 7-8 percent per year through ensuring well coordinated monetary and fiscal policies; improvements in productivity; and strengthening competition policies.

## **Monetary and Credit Policy**

Two of the primary goals of the country's monetary policy are to maintain reasonable price stability and promote sustained and high economic growth. The Bangladesh Bank (BB) formulates monetary policy with the objective of keeping inflation at target levels using repo, reverse repo, and BB bill rates as policy instruments for influencing financial and real sector prices toward the targeted path of inflation. The evidence, however, shows that although BB is able to influence the monetary aggregates using the policy tools, the tools are losing effectiveness in controlling inflation in view of the increasingly complex nature of price dynamics in the country. One important implication of the above development is that, in such situations, contractionary monetary policy may not be very effective in maintaining low inflation. The potential costs of pursuing tight monetary policy in supply side triggered inflation dynamics, which often happens in Bangladesh, is the rise in real interest rate thereby reducing investment and consumer spending. These issues will be adequately taken into account in devising the monetary policy.

The country's financial system operates with some disjuncture under which many commercial banks are not willing on their own to lend to rural and small enterprises. As a result, the expansion of these activities faces credit squeeze as informal and other sources of fund are too limited to satisfy their rising credit needs. Under the situation, along with deepening the existing efforts of the government and the Bangladesh Bank to channel a larger share of credit flows to these priority



sectors, a complementary approach could be to develop and strengthen relationships and linkages between the formal financial system and the credit-seeking potential enterprises in these sectors using the NGO and other networks, such as cooperatives and savings and credit associations that can facilitate group savings and lending to SMEs, micro enterprises, and other rural activities. These initiatives could also be tied to refinancing, credit guarantees, and other policies that promote credit allocation to priority sectors and thrust activities for poverty reduction. For the SMEs, having high potential for accelerated growth and employment generation, the access to credit will be enlarged along with a venture capital fund (VCF) for developing innovative entrepreneurs.

### **Micro credit**

Micro credit models have demonstrated the advantage of taking financial services to the doorstep of the poor people. A revealing discovery of the models is that group dynamics work well in the recovery of loans and the poor women can emerge as a significant force which, with education and training, can realize much of the development potentials. Despite the significance of NGO based micro credit to the building of awareness and poverty alleviation, there remain questions of high interest rates, accountability, status of saving of the members of the NGOs at low interest rates, and translucent dispensation about the destination and use of such savings.

### **Exchange rate policy**

With a thin foreign exchange market, high exchange rate pass-through, and exchange market pressures, it appears difficult for Bangladesh to maintain a freely floating regime. Current managed floating can be viewed as learning to float because, with the adoption of a managed floating, policy makers can learn how to conduct optimal monetary policy under a floating regime. It may take time, for example, for the Bangladesh Bank to refine internal procedures and communication strategies involved in inflation targeting. However, more importantly, authorities and market agents should take the opportunity of this period of managed floating to become comfortable with exchange rate flexibility. Particularly, learning is a process that requires reforms and building institutions that may reduce the risks associated with freely floating exchange rate regime. In view of the inherent vulnerability of the financial system, Bangladesh will continue to pursue a managed floating regime with frequent and small interventions. Simultaneously, Bangladesh Bank needs to work on developing mechanisms for inflation targeting policies, ensuring efficiency in the financial system, and building necessary institutions in order to manage exchange rates efficiently. Maintaining stability in the short-run and flexibility in the medium-to-long term will be the primary objective of exchange rate management policy.

#### **4.2.1 Productivity**

The growth rates have been targeted to 8.0 percent in 2015 and 10.0 percent in 2021 to assault enough on unemployment and poverty and dramatically improve living standards of the people, generate government revenue and exportable surplus. Per capita income is envisaged to grow to about \$2,000 in 2021.

By growth accounting, technological change turned out to be a minnow as a source of growth. The contribution of productivity or technological change to growth is presently about 8.0 percent per annum. Total factor productivity or efficiency contributed very significantly, by about 25 per cent to more than 50 per cent to the post World War II to growth of East Asian countries and to the recent growth of some neighbouring countries. This factor remains to be an important potential source of future growth of Bangladesh.

**Target:** Productivity is targeted to contribute about 20 per cent of economic growth by 2021.

**Strategies** for productivity enhancement include

- Integration/coordination of agriculture, industry and service sector technology needs patterns of R&D and human capital.
- The new initiatives planned in the area of education, IT, R&D and science and technology (S&T) will be key in this regard. In this respect, government's own initiatives, collaboration with private sector and private sector initiatives will be involved for the required integration and progress.

#### **4.2.2 Private Sector Savings and Investment**

It is the private sector investment that has enabled to build the productive capacity. While public investment has come down from an earlier 6 per cent to about 5 per cent in 2007-08, private investment surged to about 19 per cent in 2007-08. Bangladesh's present investment falls short of the requirement for accelerated growth. Although our savings rate has exhibited considerable improvement there has been shortfall of domestic savings over investment of the order of about 4-5 per cent of GDP in the most recent years. This has been made mainly from the net factor income in the form of remittance flow. The FDI has but small significance in this respect.

#### **Target**

Consistent with the targeted growth and investment, private savings will have to be geared up.

#### **Strategies of enhancement of private sector savings include**

- Reform of financial institution system for easy access of rural population to formal financial institutions and provision of more interest incentive to small savers in the rural area
- Reform of financial institutions to divert remittance away from spendthrift to productive channels
- Containment of inflation to facilitate more savings. Higher custom duty on luxury goods will have positive effect on high income people's savings habit

#### **4.2.3 Public Expenditure Management**

Public spending has been generally tended to have pro-poor characteristics: the spending on social sector like education, health, social safety net. There have been large expenditures on disaster and flood management with the result of stability in agricultural production over the years. Improved policy framework with intervention in education, girl's education and good targeting of emergency food assistance have yielded good results.

On the other side of the picture budgetary expenditures, about 14 per cent of GDP, is one of the lowest in the world and not adequate to cater for increasing need for which has been increasing reliance on domestic borrowing being about 2 percent of GDP in the face of declining concessional external financing. Public investment expenditures - about half of the budget with a declining expenditure GDP trend also partly due to absorption of personnel from completed development projects every year in the revenue budget is an uneasy condition. Furthermore, inappropriateness of many projects and their doubtful viability and undertaking of unapproved projects in the budgets

combined with long fund release procedures and inadequate implementation capacity have given rise to slow implementation of projects with lower than desired effectiveness.

As regards defence expenditure, the visible defence outlays are not out of the way - defence service in the international peace keeping has been a significant source of foreign exchange earnings. Given the imperative of pressing development needs control of defence outlays is desirable.

Along with budgetary systems and processes, from formulation to implementation and evaluation, the culture and practice is not conducive enough to make the budget an effective instrument of economic management. The systems are not well integrated and accountable. Last but not the least, procurement law is weak and standard procurement guidelines inadequate leaving room for malpractices and corruption. Budget accounting is weak with scope for unaccounting of numerous government funds and there is no check of aggregate payments against budget.

**Goals** include

- More pro-poor and environment friendly and gender dimension orientation of development expenditures
- Improvement of the effectiveness of public spending
- Establishment of accountability and transparency of public expenditures

#### **4.2.4 Poverty Profile and Inequality**

Poverty profile measured by head count ratio (HCR) using the costs of basic need (CBN) approach revealed that 40.6 per cent or 57.6 millions of the population were below poverty line in 2005 representing 1.8 per cent decline each year between 2000 and 2005. At this rate of poverty decline the HCR of national poverty will stand at 22.2 per cent of the population in 2015, thus achieving one of the pressing goals of MDGs. Based on daily calorie intake (DCI) absolute poverty – less than 2122 kilocalorie intake – comes to be somewhat lower, about 40 per cent in 2005.

National income inequality measured by Gini coefficient is 0.31 with urban inequality rising faster than the rural inequality.

Financial capital intensive activities and income sources associated with human capital are important disequalizing factors for urban inequality. The poor people with lack of access to the power structure, lack of adequate availability of benefits created by the adoption of new technologies in agricultural sector, development of rural infrastructures and overseas migration are major sources of rural inequality.

Being a cross-cutting issue anti-poverty and equality measures are discussed throughout the various issues taken up in the Plan document.

## Chapter 5

### PROMOTING FAVOURABLE INDUSTRIALIZATION AND TRADE POLICY REGIME

#### 5.1 Industrialisation

The industrial sector is yet to figure prominently in the Bangladesh economy in terms of its contribution to GDP and employment. During the period from 1983-84 to 2005-06, its share in GDP increased from about 10per cent to 17per cent and share of employment from 9per cent to 11per cent. However, the dynamism of the industrial sector is reflected in the sectoral share to GDP and particularly in the share of incremental GDP value addition. On the weakness the manufacturing sector is narrow-based - only five industries (RMG and textiles, fish & seafood, leather, fertilizer and pharmaceuticals) accounted for 81 percent of the growth achieved during the 1980s. Concentration of growth in a few sectors increased after the trade liberalization of the 1990s. Two broad sectors, textile, wearing apparel and leather (BSIC code 32), and food, beverages and tobacco (BSIC CODE 31), have dominated the overall manufacturing sector. During the period 1992-2000 the number of large and medium enterprises in the manufacturing sector increased while the number of small enterprises declined.

##### 5.1.1 Strategic Goals

Bangladesh's industrialisation process will need to be significantly geared up in the coming years if macroeconomic performance targets for 2021 are to be achieved. The overarching goal with regard to industrialisation of Bangladesh is to enhance the contribution of the industrial sector in GDP to 36 per cent over the next decade, with a share of 30 per cent for the manufacturing sector (Table 5.1).

**Table 5.1: Structural Change (sectoral share of GDP, per cent)**

| Sectors            | Average<br>(FY04-FY09) | Target<br>FY2015 | Target<br>FY2021 |
|--------------------|------------------------|------------------|------------------|
| <b>Agriculture</b> | 21.68                  | 16.0             | 12.0             |
| <b>Industry</b>    | 28.98                  | 30.0             | 36.0             |
| Manufacturing      | 17.14                  | 26.0             | 30.0             |
| <b>Service</b>     | 49.35                  | 54.0             | 52.0             |

##### 5.1.2 The Challenges

Industries sector of Bangladesh has tended to remain narrow-based, with locational concentration and low share in the country's total workforce. Accelerated pace of industrialisation will be necessary to address the increasingly diminishing capacity of agriculture sector to absorb the incremental labour force, strengthen backward and forward linkages with agriculture and services sectors, cater to the growing domestic demand for industrial goods, and take advantage of the emerging opportunities in the global market. The textile and RMG sector employs about 5 million people. Being a fast growing sub-sector, the future employment opportunity pf textile sub-sector is

expected to increase fast to cater to the growing domestic and export demand. Initiatives will need to be taken to strengthen small and medium scale enterprises, as well as identify large-scale manufacturing industries which will be able to compete in foreign markets and also withstand competitive pressure of foreign suppliers in our domestic market. This will necessitate broadening of the industrial base by creating conducive environment for private sector investment, through targeted initiatives towards transfer of technology, skill up gradation and development of appropriate human resources, development of knowledge-based industries and by raising labour and capital productivity at the enterprise level. Rationalisation and restructuring of SOEs will need to be continued in order that strategically placed SOEs can run on commercial basis and profitably, and others are handed over to the private sector.

### **5.1.3 Strategies to Pursue**

- I. Thrust will be given to SME-based industrialisation that will be labour-intensive in nature, decentralised in locational respect, and will be serviced by adequate human resources and technology adoption/adaptation and technology transfer. The aim will be to cater to the increasingly growing domestic market, and also to enable SMEs to link-up with foreign markets through a package of support including credit, common services, skill up gradation and institutional support.
- II. In view of the emerging opportunities in the global market, and by making best use of the preferential market access treatment offered to Bangladesh as an LDC, initiatives will be taken to further strengthen the foothold in existing labour-intensive manufacturing sectors such as the RMG, leather and frozen-food by promoting, product diversification and stimulating upmarket move in these traditional sectors.
- III. Policy support and promotional initiatives will be put in place to realise emerging opportunities in new sectors identified as thrust sectors in the Industrial Policy 2010 such as ICT-based sectors, food, beverages, light engineering, cement, high-end RMG, pharmaceuticals, ship-building and others. Export incentives such as bonded warehouse facilities, duty drawback and institutional – infrastructural support in the form of establishment of industrial park, dedicated private sector EPZs and SEZs will be put in place to stimulate their growth. Facilities shall be developed for entrepot export.
- IV. FDI will be encouraged through various policy incentives in order to stimulate access to technology and frontier know-how, to access global market opportunities and take advantage of the growing the regional market.
- V. Developing Bangladesh as an Exotic Tourist Destination in Asia and enhance contribution in GDP from tourism from 0.70 to 2 percent by 2015 and 5 per cent by 2021.
- VI. Initiatives to build up the appropriate human resources required for rapid industrialisation through public policy support and public-private partnerships.
- VII. Capital market will be further deepened to create opportunities for raising equity in support of industrial sector growth. Appropriate mechanisms will be put in place to stimulate, and promote

mobilisation of resources of small domestic savers in the country's capital markets and to attract port-folio investment.

- VIII. Policy support and incentives will be provided to encourage industries to be set up in areas outside of the traditional centres. Appropriate support will be given by way of development of the required infrastructure, and putting in place additional incentives.
- IX. All possible avenues of public-private partnerships will be encouraged in setting up industries.
- X. Service-sector based industries will be provided with adequate support. In view of the emerging demand, both in the domestic and global markets, appropriate support will be given to the development of ICT-based industries.
- XI. Whilst privatisation of identified SOEs will continue, strategically placed SOEs will be provided with adequate support to run as commercially viable, profitable organisation, if need be with blending of public sector ownership and private-sector management.
- XII. An exit strategy will be developed for unsustainable sick industries and rehabilitation of those which had the potential to be economically viable through restructuring.
- XIII. Institutions related to industrial development such as BOI, BEPZA will be provided with adequate resources to enable these to function appropriately and in keeping with the emergent needs from the perspective of promoting and stimulating domestic investment, FDI and joint ventures.

## **5.2 External Sector**

The degree of openness of the economy – total trade (export + import) to GDP ratio has increased to about 43 percent in 2007-08 from around 14 percent in 1980-81. The expansion is due to robust growth of import as well as exports. Average annual growth of exports, about 9 percent in the 1980s, increased annually to about 12 and 14 percents respectively in 1990s and thereafter. In the case of imports, the rates increased similarly from 6 percent in the 1980s to about 10 and 12 percents respectively in the 1990s and thereafter. With the growth of trade the country has experienced chronic trade deficits with negative current account balance during 1997-2008. It has turned out to be positive recently due to robust growth in the inflow of overseas remittance. The newly grown remittance, result of hard toil of our workers abroad, could significantly raise the much needed investment of the country.

The proportion of manufacturing exports is very high in total export, about 90 percent but with a very narrow, low skill and low value addition export base with heavy concentration on RMG, both woven and knitted. As well as commodity concentration of exports Bangladesh has market concentration: the combined shares of the EU and the NAFTA in Bangladesh's total exports have remained unchanged at around 86 percent in recent years.

### **5.2.1 Strategic Goals**

The target with regard to the external sector is to ensure strengthened global integration of the Bangladesh economy by building the required trade-related supply side capacities. This will be realised through raising the competitiveness of Bangladesh's external sector, ensuring larger share of the country in the global trade in goods and services and by encouraging both product and market

diversification. This will be done through renewed efforts at moving upmarket and by raising the efficacy of trade facilitation measures. Bangladesh's strong performance in the global labour services market will be continued and further consolidated. The overarching goal here will be to ensure that export of goods, and remittance earnings are equivalent to about 38 per cent of GDP by 2021 (Table 5.2).

**Table 5.2: External Sector (% of GDP)**

| Items                      | Average (FY04-FY09) | Target FY2015 | Target FY2021 |
|----------------------------|---------------------|---------------|---------------|
| <b>Export</b>              | 16.1                | 22.0          | 26.0          |
| <b>Import</b>              | 21.4                | 30.0          | 32.0          |
| <b>Trade Balance</b>       | -5.3                | -6.0          | -6.0          |
| <b>Remittances</b>         | 8.3                 | 8.0           | 12.0          |
| <b>Current A/C balance</b> | 1.0                 | 2.0           | 6.0           |

### 5.2.2 The Challenges and Future Direction of Trade Reforms

Bangladesh has been able to post double-digit growth rates over the recent past years to which robust performance of export-oriented apparels sector contributed significantly. Some of the other sectors such as leather and footwear and frozen food have also registered high growth. Bangladesh's external sector, both in goods and remittance services, also demonstrated commendable resilience during the global economic crisis although the lagged responses have started to be felt in recent times.

Trade and industrial policies of Bangladesh will need to be well integrated to support the twin ambitions of export-promotion and rapid industrialisation. Bangladesh has experienced significant trade policy reforms since the early 1990s with substantial reduction of tariff barriers and removal of a large number of non-tariff barriers including QRs. Import liberalisation programme has been accompanied by generous promotional measures for exports including significant reduction of anti-export bias and putting in place facilities such as bonded warehouse and duty drawback, subsidised interest rate on bank credit, cash compensation schemes, duty-free import of machineries and intermediate inputs, exemption from income tax and other taxes, etc. EPZs and private EPZs were established to promote domestic and foreign export-oriented investment.

As for future direction of trade policy reforms, it is desirable to follow gradual reduction of tariff on imports of final goods with relatively faster reduction of tariffs on imports of capital machineries and intermediate goods. This option of tariff liberalisation will provide domestic firms access to globally-priced intermediate and capital goods and offer import competing domestic firms the required time to adjust to foreign competition.

### 5.2.3 Strategies to Pursue

- Favourable tariff regime for imports of capital and intermediate goods will be put in place. Selected sectors will be provided with time-bound protection in accordance with strategies set out in the industrial policies, and to enable import-competing sectors the required adjustment space.

- To stimulate technology transfer and adoption, fiscal incentives will be provided to users of such technology.
- Support will be provided towards market diversification so that Bangladeshi products are able to make inroads into new markets including those of Japan and regional markets. Special efforts will be taken to stimulate South-South trade.
- Initiatives will be taken towards intra-RMG diversification by investing in quality promotion. Private sector will be encouraged to invest in fashion, design and quality control to facilitate upmarket movement. Textile should be treated as a thrust sector.
- Vocational training system will be geared towards developing the required human resources for export-oriented industries and export-oriented investors so that Bangladesh is able to enhance her competitive edge in the global market.
- Standards and quality of manufactured products and exports will be maintained and further improved through enhancement of SPS-TBT assurance capacities. Towards this Bangladesh Standards and Testing Institution (BSTI) will be strengthened in areas of quality assurance, accreditation and certification.
- Export related institutions including the EPB, BEPZa, SEZs will be provided adequate support so that these are able to provide necessary services to exporters.
- To further strengthen Bangladesh's foothold in the global services market through higher remittance earnings, support will be provided through streamlining of procedures for recruitment of overseas workers and by providing credit and other support to migrant workers.
- To realise the potential benefits of expected openings in the global services market targeted programmes of skill up-gradation and training, including language training, will be undertaken. Bangladesh's vocational training system will be geared towards this.
- Migrant workers' remittances will be provided with appropriate support and incentives to encourage investment in productive sectors.
- Maximum effort will be undertaken to take advantage of the various preferential schemes and market access initiatives originating in the WTO and provided bilaterally.



## *Chapter 6*

### **GLOBALIZATION AND REGIONAL COOPERATION CHALLENGES**

The Bangladesh economy has become more integrated with the global market today than ever before, mainly through rapid growth in trade, massive out-migration of labour and remittance inflows, tariff reforms and lifting of quantitative restrictions, financial sector reforms including exchange rate liberalization, and creation of a favourable FDI regime. In terms of real trade growth, Bangladesh has done well (13<sup>th</sup> out of 130 countries) with exports rising from 10 percent of GDP in 2004 to over 17 percent at present. Nevertheless, Bangladesh is still regarded as a ‘least liberalised’ country ranking 140 out of 152, suggesting there remains much work to be done on this front. Its capital account, for example, remains restricted, there is widespread and arbitrary use of supplementary duties and taxes on imports, and both domestic and foreign investors find the cost of doing business very high.

#### **6.1 Remittance Inflows**

Remittance flow, currently about 10 per cent of GDP - about the same order as the revenue-GDP ratio, has assumed a resource of heightened importance and emerges as a very prospective source of external resources.

##### **6.1.2 The Challenges**

Two-prong issues are involved for expansion of remittance- recruitment of labour for overseas employment and facilities for sending home remittances. Due to the undertaking of some measures like disseminating information on remittance, quicker delivery process, enactment of Money Laundering Prevention Act 2002, exemption of remittance and remittance-born returns from taxes, offering 10 per cent quota in initial public officers (IPOs) of local companies to the non-resident Bangladeshis and allowing interest-bearing foreign country accounts in major currencies in Bangladesh, offering priority in industrial facilities - land, electricity, import of machine, raw-materials etc., remittance flow responded in a positive way. Similarly addressing the issues incorporated in the Fifth Five Year Plan – regulation of private manpower agencies, strengthening of the wage earners fund at important overseas workplaces and simplification of immigration procedures, evaluation and review of licensing system of manpower recruiting agencies will contribute to the furtherance of the resources.

##### **6.1.3 Strategies for Actions**

- Close monitoring and supervision of the activities and practices of the recruiting agencies in respect of providing to the migrants information of skill requirement, working condition, accommodation, benefits and obligations
- Introducing technology based system of effective practices for remitting money. Large non-bank institutions with ICT-based networks in rural areas may be engaged in clearing and settlement process
- Providing training of labours for the future overseas markets and skill requirement. The functions and roles of foreign missions be redefined to make such assessment and protecting the rights of migrant workers

- Making the recently finalized draft titled "Overseas Employment Policy", more comprehensive covering various aspects of migration including documentation of workers and employers, employment contracts their implementation, settlement of workers welfare etc.

## **6.2 Foreign Direct Investment (FDI)**

. The Perspective Plan will articulate a clear policy and remove the constraints for encouraging foreign direct investment (FDI) in adequate quantities. As the economy further opens up, FDI is likely to be attracted to the following sectors: (i) infrastructure and power; (ii) oil, gas, and mining; (iii) various export sectors like textiles and related industries; (iv) fertiliser and agro related industries; (v) retail marketing. The main problem for both FDI and local investment is low investor confidence, a weak property rights regime, weak infrastructure, lack of gas and electricity, poor governance, and high transaction costs. Net FDI rose from 0.31 percent of GDP in FY91 to nearly 3.0 percent of GDP in FY01 but relapsed to 1.4 percent in FY08.

### **6.2.1 Strategic Goals**

Notwithstanding a very FDI-friendly policy regime with generous incentives and safeguards for investors, FDI flow has not been picking up due to a number of negative factors - non-compliance with regard to some safeguards in the past with debilitating effects on FDI by US investors and constricting condition like infrastructural deficiencies - power shortage, gas scarcity, inadequate port facilities and communication difficulties, political unrest and poor law and order situation etc.

### **6.2.2 Strategic Actions**

The following strategic actions will be considered in the Perspective Plan:

- The problem of image can only be changed if there are meaningful changes in the ground reality. While the FDI regime is considered highly favourable, there remain crucial bottlenecks that will be removed.
- The general governance situation (and related high transactions costs) will be addressed to improve the country's image and stimulate foreign investment.
- A special effort will be made to encourage regional investment in emerging and potentially high return sectors (e.g. software development and IT from India, electronics from China).
- A major effort will be launched to set up a string of Special Economic Zones (SEZs) along the international borders. This will stimulate cross-border investments and trade. The successful examples of China and Vietnam will be emulated.

## **6.3 Addressing the Multilateral Trading Regime**

Addressing the multilateral trading regime will mean coping with the challenges relating to asymmetric and inequitable trading rules prejudicial to the trading interests and performance of LDCs including Bangladesh.

### **6.3.1 Major areas of negotiation**

Major areas of negotiation are agricultural trade liberalization, duty-free quota-free (DFQF) market access, non-agricultural market access (NAMA), trade in services etc. Also are the important issues like rules of origin, anti-dumping and aid for trade (Aft) etc.

Agricultural trade liberalization will imply market access opportunities for some LDCs as a result of reduced tariff barriers in the developed countries' markets but for Bangladesh this will lead to a high welfare loss and a significant rise in poverty. Duty-free quota-free (DFQF) market access will imply that Bangladesh's RMG export markets will be more concentrated. Also expansion of the unskilled labour-intensive export-oriented RMG sector will have a greater beneficial effect on the poorer households who depend mainly on unskilled labour income than other households. In respect of non-agricultural market access (NAMA) the existing tariff preference margin is not sufficient enough to cover the administrative costs associated with fulfilling RoO requirements. For trade in services, most important issues are temporary movement of natural persons under Mode 4 as well as on the cross border supply of services under Mode 1. As regards rules of origin, Bangladesh is often unable to fully utilize preferential market access provided to them due to stringent Rules of Origin (RoO) requirements which have to be fulfilled. The use of simple and transparent RoO criteria would undoubtedly enhance market access for exports originating in LDCs. The imposition of anti-dumping majors creates hurdles to achieve better market access. Developing countries including Bangladesh have not received the special consideration mandated by the ADA, and this has undermined their potential to benefit from trade liberalization. The WTO antidumping rules therefore need to be amended. Coming to the issue relating to aid for trade (AfT) which was incorporated in the Hong Kong Ministerial Declaration for the first time as a special and committed assistance, the benefits are yet to accrue to LDCs including Bangladesh due to the lack of trade-related infrastructure facilities and deficiency of knowledge on market access possibilities.

### **6.3.2 Strategies for Actions**

Specific strategic actions with regards to the areas and issues mentioned include the following:

#### ***Agricultural Trade***

- Being a net food-importing LDC, Bangladesh should negotiate to get compensation for higher food prices resulting from reductions and elimination of export subsidies as well as domestic support subsidies on account of agricultural trade liberalization.
- The issue of monetisation of food aid is also important for LDCs like Bangladesh. Food aid is essential for supporting the poor section of the population. However, when an LDC needs cash support, there should be flexibilities of monetisation of food aid. Bangladesh should negotiate along these lines.

#### ***Aid for Trade***

- Trade should be mainstreamed in the national development agenda of Bangladesh particularly for incorporation of the AfT.

#### ***Duty and Quota Free Trade***

- Bangladesh has a list of products covering 97 per cent of exports for receiving DFQF market access. Diplomatic and other steps are necessary to ensure that the 3 per cent exclusion list of developed countries. Also strategy for Bangladesh would be to seek low tariffs (say 5 percent) on commodities in the exclusion list.
- Bangladesh needs to mount the strategy to secure the political attention of the US administration and liaise with the US trade team to meaningfully enhance DFQF and tariff lines under Annex 4 of NAMA.

- Research should be undertaken to assess the DFQF schemes announced by the developing countries for the LDCs.

### ***Non-agricultural Market Access***

- Formation of a “competitiveness fund” or other development assistance due to affliction of preference erosion which will help to undertake adjustment programmes.
- Delayed or gradual reduction of tariffs on products that have significant export activity and margins of preference. An ‘index of vulnerability’ may be developed in order to identify products of special concern.

### ***Trade in Services***

- Negotiation for a mechanism to secure “permanent, non-reciprocal, special priority notwithstanding any provisions of the GATS.
- Negotiation strongly for market access for natural persons in Mode 4.

### ***Rules of Origin***

- Establishing a simple and transparent and preferential RoO. RoO similar to that of the Canadian GSP which stipulates 25 percent domestic value addition can be sought.

### ***Anti-dumping***

- Until ADA rules are suitably reformed, it is necessary to seek for a moratorium on anti-dumping action on exports for a certain period of time.

## **6.4 Strengthening Regional Cooperation**

The South Asian Association for Regional Cooperation (SAARC) comprising the seven countries - Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka - was formed in 1985 with the objectives like promotion of regional trade and investment, development of infrastructure, and communication and preferential trading arrangements. Subsequently the South Asian Preferential Trading Arrangement (SAPTA) came into being in 1995. Further efforts in this regard are made by given effect to the SAFTA from January 2006 and some progress has been already made to increase regional trade specially bilateral trade with India. Still the much needed cooperation for investments on important areas is yet to come by due to political tensions and asymmetry within the region. Other regional cooperation like Asia Pacific Trade Agreement (APTA), and the Bay of Bengal Initiatives for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) have not yet made the desired progress to boost regional economic cooperation and progress.

### **6.4.1 Case for Sub-regional Cooperation**

In recent years proposition for sub-regional cooperation among Bangladesh, India, Nepal and Bhutan, and the idea is gaining ground. Bangladesh, India - the eastern states of India to be more specific - Nepal, Bhutan and Myanmar are endowed with some rich complementary resources that offer great opportunity of cooperation in various fields : this region has one of the richest resource of hydro-electric power in the world and offer scope for generation of electricity and marketing the product in the deficient countries including Bangladesh. Within this region, Bangladesh has a unique geographic location advantage that can be reaped for significant economic benefits of the co-operating countries including Bangladesh. Nepal and Bhutan are land-locked within India but located very close to Bangladesh and closer to the seaports of Bangladesh than to India's. India surrounds Bangladesh but the eastern states of India are partly isolated by Bangladesh such that Bangladesh

offers closer route and cheaper transport cost between the eastern and other states of India besides Bangladesh offering the nearest seaports for these states. There are other complementary resources in the region that offer opportunity of cooperation. Growth triangles in ASEAN countries which formed an integral part of the process of regional cooperation and benefited the adjoining regions have provided empirical support to the idea of sub-regional cooperation in the eastern part of the sub-continent.

*Prospects of FDI and Joint Venture:* Foreign Direct Investment in Bangladesh has been small and FDI from the South Asian region has been much smaller. There are some Indian investments in Bangladesh but its volume is not substantial. The main constraints to FDI are inadequate and inefficient infrastructure facilities like power, transport and communication including port facilities.

In the early 1970s negotiations for joint investment involving Bangladesh and India reached an advanced stage. The projects were (a) fertilizer factory based on gas in Bangladesh, (b) cement factory based on limestone of NES of India and (c) Sponge Iron enterprise using gas of Bangladesh and iron ore of India. In addition, frameworks of cooperation in other areas were underway. These areas remain prospective even to-day. Other prospective areas of investment cooperation are gas exploration, petrochemicals, textile machinery, electrical goods and leather goods etc. Health, education, tourism remain yet other potential areas of investment cooperation.

*Cooperation on Road and Highway Projects:* The idea of greater economic cooperation among the Ganges-Brahmaputra-Meghna (GBM) basin countries - Bangladesh, Nepal, Bhutan and northern and eastern India was envisaged with the conceptualization in 1959 and proposal in the early 1980s of the Asian Highway System by UN- ESCAP. The objective of the GBM triangle envisaged by the ADB are: joint development and management of water and other resources, development of physical infrastructure such as roads, railways, ports etc. and (3) cooperation in other areas such as environment protection, tourism etc.

Like other cooperating countries in the grand Asian Highway System which is a roadmap for various regional, sub-regional and bilateral cooperation Bangladesh should not be left out of the opportunity of developing various links with other parts of the region and outside the region. The System will open the gateway of various domestic investments and FDI in Bangladesh. A very specific benefit relates to Bangladesh's strategic location for use as valuable route for trade and commerce of India, Nepal and Bhutan.

#### **6.4.2 Strategies for Action**

Strategies for strengthening regional cooperation include

- More vigorous efforts in various forums to make SAFTA, APTA and BIMSTEC effective organizations.
- Bilateral negotiations are important means of effective cooperation.

- Taking initiative to resolve cross-boarder issues and undertaking of joint projects like production and distribution of electricity, gas, coal, fertilizer and other products etc. win-win case basis.
- Participation in the grand Asian Highway System.

## *Chapter 7*

# **ENSURING FOOD SECURITY: STRATEGY FOR AGRICULTURE, WATER RESOURCE MANAGEMENT AND RURAL DEVELOPMENT**

## **7.1 Background**

One of the fundamental rights of the people stipulated in the Bangladesh Constitution is food security for all. Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to maintain healthy and productive life. Two elements of food security are a) availability of enough food in the market to meet the demand of the citizens through domestic production and/or imports, and b) access of the food to all people at all times through enough incomes and affordable prices.

Agricultural growth is crucial for making food available for the growing population, and for generating income for the 70 per cent of the population still living in rural areas to have access to food. In order to ensure food security for the nation and particularly for the extreme poor, the government will, among others, have to

- Maintain an optimum level of food stock
- Ensure access to food at an affordable price for the hard core poor, the disadvantaged group & persons with disabilities
- Operate special food program in the poverty/disaster prone areas
- Ensure food security through Public Food Distribution System (PFDS)

Agricultural production is inextricably linked to water resource management because Bangladesh has no further scope of expanding the land frontier. Future growth of production must depend on vertical expansion of continued increase in land productivity for which efficient irrigation, flood control and drainage are essential. Only seven percent of the river system of Bangladesh, that has shaped much of the economy, culture and the ecology of the country, lies within the country which makes water resource management extremely difficult and complicated issue. Much of the increase in cereal production in the past has been through expansion of irrigation, particularly through exploitation of ground water resources. But availability of fresh water resources has been declining partly due to harnessing of water for irrigation and generation of electricity upstream in India. It will continue to decline even at a faster rate due to increasing competition for water from the expanding urban and industrial sector. Water resource management has thus become a key area for sustaining agricultural growth and achieving and sustaining food security.

Despite a steady growth in agriculture and food production, Bangladesh has been facing persistent challenges in achieving food security due to natural disasters, fluctuations in food prices due to volatile international markets, sudden increase in the price of the staple food, rice and flour, that erode the purchasing capacity of the bottom 40 percent of the poor people, and huge un- and underemployment of the labour force who depend on the informal market for livelihoods. Access to food will continue to depend on comprehensive rural development based on the promotion of rural non-farm activities, including fisheries and livestock, agro-processing and value addition of crops and rural trade and transport operations that can generate employment for workers in households that have limited access to land. Development of transport and communication infrastructure, un-interrupted supply of energy, access to quality education and medical care and development of rural growth

centres are essential for broad-based and equitable rural development needed to ensure access to food for all people.

## 7.2 Crop Sector

### 7.2.1 Progress

The crop sector accounts for almost 12 percent of the GDP and 60 percent of the agricultural value added. Rice, the dominant staple food occupies over three fourth of the cropped area in Bangladesh. The other major crops are jute, wheat, potato, rapeseed and mustard, different types of pulses, chillies and onions and vegetables, sugarcane, tobacco and tea, and cotton.

Rice production has tripled from 11 million tons (milled rice) to about 32 million tons since independence in 1971. Most of the growth has occurred since late 1980s, through adoption of improved rice varieties supported by rapid expansion of ground water irrigation. Over 80 percent of the increase in rice production during the last two decades came from the expansion of irrigated *boro* rice in the dry season, with reallocation of land from low-yielding rain fed *aus* rice and jute crop. Over three-fourths of the rice area is covered with improved varieties. Wheat, the minor food staple also had a respectable growth till the late 1990s, but has recently given way to maize because of favourable agro-ecological environment and higher productivity compared to wheat, and a stable market as feed for the expanding poultry sector. Over the last two decades, good progress has also been achieved in the production of potato and vegetables. But the production of most other crops including pulses, oilseeds and sugarcane has either remained stagnant or has declined.

### 7.2.2 Challenges

Bangladesh has made good progress in reducing population growth from over 2.5 percent in the 1970s to 1.4 percent during the 1990s. But the population is still growing at 1.8 million per year. The production of rice must increase by over 300,000 tons per year to meet the growing demand for food from the additional population. Fortunately, the per capita consumption of rice has reached almost a saturation point for the rural areas and has started to decline in urban areas. The demand for other food items continues to increase much faster than the growth of population because of strong income growth induced demand (high income elasticity), recent acceleration in the growth of per capita income (Over 4.5 percent per year), and the diversification of diet in favour of non-rice food items associated with urbanization and income growth. The Report of the National Commission of Agriculture (2000, unpublished) estimated that if the GDP growth accelerated to seven percent per annum, the demand for food crops will increase at 3.1 percent per year during 2010-2020. The demand growth is estimated at 1.5 percent per year for cereals, 3 to 4 percent for pulses and vegetables, and spices, and over five percent for oils, sugar and fruits.

The natural resources, land and water and soil fertility, available for agricultural production has however been declining. It is reported that cultivated area has been declining by almost one percent per year due to its demand for increased habitation, industrial and commercial establishment, transport infrastructure, river erosion, and intrusion of saline water in the coastal areas. Conversion of prime agricultural land at both sides of newly constructed roads into sites for factories and commercial establishments for future use is a common site. The low-lying lands are being converted into ponds for aquaculture, and the highlands into orchard, particularly by absentee landowners. The soil fertility has declined due to high cropping intensity and un-balance and over use of chemical fertilizers. The exploitation of ground water for irrigation for dry season rice farming (*boro*) has gone beyond the capacity of annual recharge of aquifers, with adverse effects on the supply of safe



drinking water. The irrigated area has expanded to over 5 million ha out of 8.0 million ha of cultivated land, and over three-fourths of the area is irrigated with ground water, mostly by privately installed shallow tube wells. The arsenic contamination of drinking water in large part of the country is often blamed to excessive exploitation of ground water. In areas where water for irrigation is the constraint, it is important that agronomic techniques which can help to increase yield per drop of water are standardised and popularised. System of Rice Intensification (SRI) is such a system of water and crop management that helps to reduce irrigation water requirement by 30 to 40 per cent. This method thus helps to avoid the unsustainable exploitation of the aquifer.

Farmers continue to face large fluctuation in farm gate prices with prices remaining low at harvest that helps market intermediaries and large farmers to mobilize most of the farm surplus. The rapid urbanization and the inactive land market are leading to increasing concentration of land in the hand of the absentee landowners. The large and middle farmers are increasingly leaving farm in favour of non-farm activities in rural and urban areas and getting the land cultivated by agricultural labourers and marginal landowners. The exploitative rental arrangements, the inability to mobilize savings and credit to finance working capital needs, and lack of information and knowledge may act as constraints to adoption of improved technologies and invest in agricultural enterprises. The area under tenancy cultivation has increased from about 22 percent of the cultivated area in 1983/84 to about 36 percent in 2005 (BBS: Report of the Agricultural Sample Survey, 2005).

A large part of the increased demand for different food items is met through imports. The country has reached near self-sufficiency only in the case of rice. But import of most other food items, including wheat, pulses, oils and sugar has been at nearly 10 percent per year. The import for food items now accounts for over one-fifth of the total export earnings. The global market for staple food, particularly rice has become tight with rapid increase in prices since 2006. The market has also become unreliable with governments imposing export bans to protect the interest of the people. The prices of the food items in the world market fluctuate widely making the domestic market highly volatile in case of heavy dependence on imports. Sudden increase in prices emanating from the connectivity with the world market imposes hardship on low-income consumers.

### **Production and demand projection of rice over the OPP period**

Production projection of rice from 2011-2021 is based on 60,per cent yield gap minimization (YGM). Demand projection is based on population growth falling from 1.4 per cent to 1.2 per cent, increasing GDP growth and reduction in income elasticity of demand for rice from 0.31 to 0.20. Production projection of some important crops is furnished below. The projection is based on minimization of yield gap. The proportion of minimization is shown against each crop. Even with higher production there has to be significant import of wheat, oilseeds and pulses.

**Table 7.1: Production and Demand Projection of Rice (in million metric ton)**

| Rice                    | 2007/08     | 2015         | 2021         |
|-------------------------|-------------|--------------|--------------|
|                         | 60 %<br>YGM | 60%<br>YGM   | 60%<br>YGM   |
| <b>Total production</b> | <b>30.7</b> | <b>35.39</b> | <b>36.81</b> |
| <b>Total demand</b>     | <b>-</b>    | <b>28.8</b>  | <b>32.6</b>  |

**Table 7.2: Production Projection of some crops**

| Crop            | Production Projection in '000 tonnes |      |       | Minimization of yield gap (per cent) |
|-----------------|--------------------------------------|------|-------|--------------------------------------|
|                 | 2007                                 | 2015 | 2021  |                                      |
| <b>Wheat</b>    | 844                                  | 1157 | 1392  | 50                                   |
| <b>Potato</b>   | 6648                                 | 8759 | 10342 | 80                                   |
| <b>Oilseeds</b> | 358                                  | 448  | 516   | 70                                   |
| <b>Pulses</b>   | 204                                  | 262  | 305   | 25                                   |
| <b>Maize</b>    | 1346                                 | 1633 | 1849  | 70                                   |

### 7.2.3 Strategies

In our development efforts, we must adopt the following strategies to meet the above challenges:

- Achieving self-sufficiency in the production of rice, our dominant food staple, as we can no longer depend on the world market for meeting our needs. Studies show that we have comparative advantage in rice production on the import parity basis.
- We must also aim increasing diversification in food production to address the challenge of achieving balanced nutrition. To achieve this objective we must adopt system-based rather than crop based planning for crop sector development. We must also use the rich information on agro-ecological zoning for identifying areas suitable for different crops and also use it for area based approach to development.
- For crop intensification, the coastal zone, the Sylhet region and the char areas in the Northern *monga* affected areas must receive priority in crop sector development plans.
- The short winter season, November to February, which is ecologically favourable for growing the high-profit non-rice crops be kept for the production of non-rice crops. The remaining period could be used for growing two rice crops for meeting our rice needs. It will require development of shorter-maturity drought and submergence tolerant rice varieties. This strategy will also help reduce dependence on expensive ground water irrigation.
- For further increase in productivity of land focus on expansion and efficiency of the R&D system will continue. The potential of the hybrid rice technology for another 20 percent increase in yield must be exploited, shifting of the yield potential for favourable ecosystem where technological progress has reached the plateau should be further explored, and stress tolerant varieties (salt-tolerance, submergence tolerance, and drought tolerance for rice, and heat tolerance for wheat) must be developed and deployed.
- Further potential for increase in yield through reducing yield gap for existing technologies must be explored. There are possibility of substantial increase in yield through use of better quality seeds, efficient management of seed bed, and the adoption of the System of Rice Intensification (SRI) that includes among others use of young seedlings, one seedling per hill, larger spacing, wet and dry irrigation system, and use of compost and farm yard manure, direct seeding etc.
- Appropriate land reforms such as a) control of absentee landownership, b) control of rents for fixed rent system, c) distribution of khas land among landless and non-viable marginal

farmers where ever feasible, d) imposing restriction on conversion of prime agricultural land for non-agricultural uses, e) hourly rental system for irrigation equipment instead of crop-share based irrigation charge, and f) computerization of records of landownership and land transfer, etc must be attempted.

- *ICT for extension:* The information and communication technology could help information dissemination among farmers. Weather forecasts could be made available on a regular basis through T.V., radio and cell phone systems. Bangladesh Space Research and Remote Sensing Organization (SPARSO) can play a vital role in this regard.

## **7.3 Fisheries**

Bengal delta comprising Ganges, Brhamaputra and Meghna flood plains is the world's largest flooded wetland, containing more than 800 species of fish. It stands among top ten fish producing countries of the world. About 2.8 million ha of land remains waterlogged for more than four months. This vast flood plain currently remains under-utilized for fish production.

Fisheries offer an important source of meeting nutritional needs of the people along with vast potential for employment creation and export promotion. Without massive efforts at replenishing fish supply, the nutritional needs of the poorer people cannot be achieved. It is estimated that 30 per cent of women in costal area are directly or indirectly engaged in small scale fishing activities. More recently, large numbers of men and women in rural areas have undertaken pond aquaculture as an important economic activity.

### **7.3.1 Progress**

Fish production has increased rapidly since 1990s. This has been possible due to pond aquaculture (fish raised in ponds) using hatchery based fish fingerlings. In large part of the country, the low lying land is being converted into fish ponds by raising embankments around such land. The embankments are often used as orchards and vegetable gardens. But the production under capture fisheries has remained stagnated. So there has been under-investment in fishing in the flood plains. The fish habitat in rivers, creeks and canals has gradually reduced due to siltation and drying of the perennial water bodies.

The expansion of fish hatcheries in the coastal areas may have been over-exploited leading to environmental and social problems. The interest of the landless and marginal farmers affected by shrimp culture will have to be borne in mind. Promotion of smallholder aquaculture should get proper attention. The hazards from cyclone surges and tidal bores have to be reckoned with in the future shrimp culture.

### **7.3.2 Challenges**

Fisheries products have high income elasticity of demand. With urbanization and increase in per capita income, the demand for fish has been growing very fast. The Report of the National Agriculture Commission projected that the demand for fish will grow at 4.7 percent during 2000-2010, and by 4.1 percent during 2010-2020. Since the fish production has been increasing at a slower rate, the price of fish has been growing at a faster rate than other price, leading to growing inequality in the consumption of fish between rural and urban areas and across socio-economic groups in both rural and urban areas.

Small scale pond carp poly-culture and Chinese carps along with small indigent species will continue to be the largest source production and offers the greatest potential expansion, with high returns to labour and significant value added. Commercial intensive pond culture will possibly shift away from Pangas to carp poly-culture or other systems. The major constraints for large operators are a lack of large contiguous pieces of land in addition to a lack of high quality feeds.

Stocked beels and oxbow lakes, a form of extensive aquaculture, is unlikely to be of major importance. This activity can generate positive financial returns, and moderate production costs through beel-floodplain stocking by private entrepreneurs, or in association with government or NGO initiatives. Rice-fish culture is likely only to achieve a modest increase in production to perhaps 4,000 tonnes though this could expand much more with suitable support. Though benefits to fish and crop management are clear, poaching, pesticide use and water management issues are notable constraints. Pen culture has been increasing rapidly in popularity, with projected targets of some 20,000 tonnes of fish. There are however, high risks from loss of stock as a result of net damage, poaching or predation.

Shrimp (bagda) production has significant growth potential given continued international market access. Much of this could be accommodated through improved culture systems without major growth in area, though spatial expansion is also a possibility. Improved approaches will require better operational management with the support of extension, improved pond construction, better water management, a reduction in PL mortality, improved stocking ratios, and most importantly to the industry as whole, improvements in post harvest handling.

**Table 7.3: Production Projection of Fisheries**

|                              | Area (thousand ha) | Production (thousand tons) |       |       |
|------------------------------|--------------------|----------------------------|-------|-------|
|                              |                    | FY08                       | FY15  | FY21  |
| <b>Inland open water</b>     | 4,237              | 1,060                      | 1,690 | 1,764 |
| <b>Closed water bodies</b>   | 528                | 1,006                      | 1,409 | 1,761 |
| <b>Marine</b>                | ...                | 498                        | 566   | 614   |
| <b>Total fish production</b> | ...                | 2,563                      | 3,665 | 4,139 |
| <b>Total demand</b>          | ...                |                            | 3540  | 3,910 |

Prawn (Golda) production is likely to follow the trends of strong growth experienced over the last decade; Golda will require further expansion in area and can be grown in any fresh water pond, though hatcheries require saline water. As successfully demonstrated throughout the country, golda can be included in carp poly-culture systems, though the bottleneck is the lack of marketing outlets outside of traditional producing areas.

### 7.3.3 Strategies

- High priority should be accorded to closed water fisheries production.
- Possibilities of increasing production of fresh water Galda production instead of brackish water based shrimp farming should be explored in the coastal areas.
- Potential of using the flood plains with individual ownership based cage culture should be explored.
- The supply of inputs and promotion of technical knowledge among fish farmers, specially focusing on educated youth, in pond and other closed water bodies should be emphasized.

- The government owned water bodies should be leased to fishermen cooperatives materialising the slogan of “Jaal jar jala taar”.

## 7.4 Livestock and Poultry

### Issues in the sector

The objective in the livestock sector is to keep pace with the increasing demand for livestock products. There has been a significant growth in recent years in the livestock sector. Much of the increased production has come from the commercial poultry sector.

A high population growth rate, moderate growth of per capita income and higher income elasticity of demand for livestock products imply a further increase in the demand for livestock products for the next few decades. It has been estimated that the demand for milk, eggs, and mutton will increase, respectively, by 6 per cent, 5.2 per cent and 5.6 per cent. These rates are well above our recent production/ consumption growth rates.

Only the present growth of poultry and egg production was relatively close to these projections. The growth rate for poultry is expected to be 4.41 per cent p.a., the maximum of all species. Growth for sheep and goat would be around 1.99 per cent.

*Acute milk shortage:* Based on per capita daily milk requirement of 120 gm, the total demand for milk in 2002 was estimated to be two and half times the production level in the country. Therefore, meeting Bangladesh’s potential milk demand is a huge national task and the question arises how well-positioned Bangladesh is to meet this milk demand.

#### 7.4.1 Technical Constraints of Livestock Production in Bangladesh

Livestock density in Bangladesh is one of the highest in the world. Number of cattle and goat remain fairly constant or declining according to the Agricultural Census of 1960, 1977, 1983-84 and 1996. However, poultry population is increasing. Production of livestock could be increased if nutritional constraints, parasitic constraints, infectious diseases such as foot and mouth diseases or *Peste de Petits Ruminants* could be controlled effectively.

**Low Productive Genotype:** Carcass yield in Bangladesh are 70-100, 7-8 and 7-8 kg respectively, for cattle, goat and sheep and is very low for good financial return. Similarly, average milk yield of indigenous cow ranges from 1-2 kg/d. Crossbreeding of indigenous dam with Friesian sire for improving milk production is an on-going program in the country. However, crossbreeding with beef type sire for improving meat yield should be considered.

#### 7.4.2 Opportunities for Increasing Livestock Production

Nine critical areas have been identified for the livestock development in the country. These are : i) Dairy development and Meat Production, ii) Poultry development, iii) Veterinary Services and Animal Health, iv) Feeds and Animal Management, v) Breed Development, vi) Hides and Skin, vii) Marketing of livestock products; viii) International Trade Management; and ix) Institutional Development for Research and Extension. The most important stakeholder in agriculture and in agricultural research is the farmer, both men and women. Extension services and agricultural research need to be assessed so that they adequately reach the women and men farmers.

In the recent past, it is observed that small poultry farms have been able to combat contiguous diseases like bird flu to some extent for production of broilers but failed to manage it for production of layers. Small poultry farms have now almost stopped production of eggs. In this context, supply of veterinary services including vaccination would need greater emphasis.

**Table 7.4: Growth rate and projection of livestock and poultry population (in millions)**

| Species        | Agril. Census | Agril. Sample Survey | Projection |        |        |
|----------------|---------------|----------------------|------------|--------|--------|
|                | 1996          | 2005                 | 2010       | 2015   | 2021   |
| Bovine animals | 22.30         | 25.14                | 26.85      | 28.47  | 30.73  |
| Sheep & goat   | 14.61         | 17.469               | 18.27      | 19.78  | 21.41  |
| Poultry        | 126.67        | 188.40               | 208.72     | 231.45 | 239.85 |

**Strategy:** Breed development, feed production and supply, extension and supply of veterinary services including vaccination shall be promoted.

## 7.5 Forestry

### 7.5.1 Issues in the sector

**Forestry Prospects:** The state owned recorded forest land (not necessarily supporting tree cover), and the potential forest/tree growing areas of the country has been identified at 7 million acres or 20 per cent of land area. Tree cover is reported to be on 12 per cent of land area. There are considerable prospects for improving in this area.

**Ecological Imbalance:** Ecological balance and bio-diversity conservation are in critical state in Bangladesh. In Hill forests the most common environmental problems are erosion, over exploitation and loss of soil fertility. In Mangrove forest the most common environmental problems are poor water and pest and in the mixed Broad-leaved/Bamboo forests, erosion and over exploitation. In the plantations the environmental problems are loss of soil fertility, erosion, over grazing, flooding as well as poor water and drought.

**Productivity:** Productivity per unit of time or area from the state forests and plantations is unacceptably low. This has been caused both by social and institutional constraints. In the social side, revenue generation outlook of the management completely disregarded the basic needs of the local people who reciprocated through deliberate forest damage. Potential productivity was marred by lack of technological innovations and administrative accountability. There exists a serious shortfall in forest product availability compared to local demand. The major deficit is in the fuel wood sector and this deficit is met by using agricultural residue and dung. The scope of social forestry and agro forestry should be emphasized.

**Substantial Forest Area:** Being located in the tropical geographical belt and a deltaic formation in the confluence of the world's largest river systems, Bangladesh is endowed with fertile alluvial soil in its length and breadth, a favourable climate for faster tree growth and high output of tree products. Considering such high potentiality of growth and yield, a 20 percent productive forest cover under intensive cultivation, when established and sustained, should be, by any standard, considered as substantial forest area for the country.

### 7.5.2 Targets, Policies and Strategies

**Target:** Twenty percent productive forest cover by 2021.

**Policies:** These include increases in tree cover on the 2.84m hectares available for forest development, introduction of diversified tree species to sustain ecological balance, increasing employment under forestry, particularly for women under expanded social and agro forestry, saving

cow dung as organic fertilizer to get fuel wood from forests, according priority to the creation of coastal green belt and increasing accountability and transparency in public forest management

Considering the extremely poor and inefficient management of public forest areas by the Forest Department, (FD) the Government may seriously consider withdrawing forest management from the Department and turn the forests into participatory social forestry areas for more efficient and productive management, and for sustaining ecological balance. The functions of the FD may be restricted to research, training and extension.

### **Strategies**

- Increase in tree cover in the designated forest areas,
- Increase in productivity,
- To increase efficiency
- To undertake agro and social forestry.
- To sustain ecological balance

## **7.6 Water Resources Management and Irrigation**

Agriculture development, among other things, will require more water for irrigation to produce additional food grain. Innovations in mechanical irrigation equipment have led to a rapid expansion of irrigated agriculture in rural Bangladesh. These technologies have been taken up chiefly by men who use the pumps to irrigate their own land and/or to sell the water.

### **Goals in the irrigation sector:**

- Expand irrigation in greater Sylhet and south-west region
- Increase irrigation efficiency to 50 per cent from current 30 per cent by 2021
- Increase irrigated area of 5.0 million ha in 2009 to 7.6 million ha in 2021 by using water saved from improvement of irrigation efficiency
- Reduce the issue of overwhelming dependence on ground water
- Augment research abilities in respect of trans boundary river water negotiation with neighbours
- Enhance conveyance capacity of water resources through river dredging
- Creating reservoirs of flow water to use in the dry seasons

At present in Bangladesh only about 5.0 million ha have been brought under irrigation of which ground water accounts for more than 80 percent of the total. The country has 7.56 million ha of lands which are suitable for irrigation. But according to present estimate of available water resources, only about 7.0 million ha can be irrigated. This indicates that additional 2 million ha could be irrigated in the future years if water were available.

### ***The challenges:***

- The first is the water scarcity which means that there will be less water available for irrigation in future and we must produce more food with less water. The growing scarcity and competition for water for diverse uses may dramatically change the way we value water and utilize water and the way we mobilize and manage water resources.
- Secondly, with coming global climate change, the country is likely to face sea level rise, increase in temperature and fluctuation in precipitation, drainage congestion, and salinity in coastal areas and disturbances in morphological processes. As a result, Bangladesh's most

land under 1.0 metre elevation will be severely vulnerable. The country will require adaptation to climate change.

### 7.6.1 Supply and Demand of Water

**Wet season:** According to the National Water Management Plan (NWMP), there is no water shortage in the country during the wet or monsoon season (June to October), rather the problem is of excess water resulting in widespread inundation (WARPO, 2001). In an average year about 20 per cent of the country is flooded, increasing to more than 60 per cent during the severe floods (like those of 1988 and 1998). The normal sequence of floods starts with the flash floods in the northeast and in the eastern hills regions caused by the pre-monsoon rains in April and May. During the monsoon, the Meghna and the Jamuna rivers normally reach their flood peaks during July and August. The Ganges River reaches its peak normally about a month later during August and September. But, when the peaks of the three mighty rivers coincide, on average in about every six to ten years, catastrophic floods occur.

In the UNESCO (2009) study, the estimated wet season (July to October) demand (both consumptive and non-consumptive) is about 142 BCM against an average surface water availability of 850 BCM. Unfortunately, due to the flat topography of Bangladesh, storing this excess has not been possible. Storage would require a regional plan and the construction of facilities in the upstream countries of India and Nepal. Creating small scale reservoirs and retention of water for dry winter season may also be planned.

The excess water scenario may change dramatically once the Indian River Linking Project (IRLP), which is now under phased implementation stage, is completed by 2016 as planned. At present, the contribution of the Ganges and the Brahmaputra basins to the total Trans boundary flow are 380 and 537 BCM, respectively, which contribute to about 76 per cent of the total flow. Through IRLP, about 178 BCM of water (about 19 per cent of the average annual flow) is being planned to be diverted from the Ganges, Brahmaputra and Meghna basins to the western and peninsular India (NWDA,2006). The impacts of such massive withdrawal on the agro-ecology and the environment, in general and the hydro-morphology of the river systems, in particular are unknown. The problem has been exacerbated by non-availability of any data, both spatial and temporal on the withdrawal, from the Indian side. It has now become imperative for the government to negotiate with India for sharing the data on IRLP so that a holistic analysis of the probable impacts of such a massive withdrawal on the water resources, environment and the economy can be carried out.

**Dry Season:** Leaving aside the non-consumptive demand of in-stream use (56 per cent of the total water demand), the dry season water demand is overwhelmingly dominated by the demand of water for irrigated agriculture (32 per cent). As per projections of NWMP (WARPO, 2001), all other demands, except that of irrigation, are expected to increase insignificantly. The demand for irrigation is expected to increase by 25 per cent to about 20 BCM by 2025 from that of 2000 under a Best Case Scenario of irrigation efficiency. The total irrigated area by all modes of water abstraction increased from about 3.55 million ha in 2000 to about 5.05 million ha in 2008.

### 7.6.2 Water and Climate Change

Climate change may also affect the rainfall in future though it has not been found to be statistically significant yet. Due to climate change, the increase in temperature may increase the crop water requirement and the agricultural demand for water. There would be increased variability in the



availability of seasonal rainfall and increased occurrences of extreme climatic events like floods, droughts and cyclones. The sea level would continue to rise resulting in increased flooding and drainage congestion and reduced availability of fresh water, especially in the coastal region. All these vagaries due to climate change call for an immediate action plan for adoption of mitigation measures.

For establishing the rightful and sustainable shares of water and also to facilitate negotiation on water sharing with India, studies of water demands with pertinent, rational and relevant data should be carried out for each of the Trans Boundary Rivers. A suggestion has been made for a Brhamaputra barrage in addition to the Padma/Ganges barrage for meeting the consequences of Trans boundary water redirection in the long-run. The impact of salinity intrusion of such ventures in faced with climate change induced salinity aggravation should be borne in mind. For the Perspective Plan, the major strategies are:

- Focus on surface water irrigation and move out of ground water gradually to stabilise at a sustainable level;
- Increase irrigation efficiency, reduce wastage and losses through better technology and better management;
- Encourage greater use of rain water and local storage for use in the dry season;
- Consider an efficiency increasing pricing policy for water;
- Encourage research on water efficient crop varieties;
- Undertake large O&M of embankments and polders to prevent salinity intrusion along the coast.

## **7.7 Rural Development and Institutions**

### **7.7.1 Rural Development Process**

Rural development is a process that encompasses the entire gamut of techno-economic and socio-political changes pertaining to relevant public and private efforts designed to increase the well being of the rural people. The principle aspects of rural developments are concerned with

- (i) Poverty alleviation and equity
- (ii) Village agricultural and industrial development
- (iii) Human development including primary and mass education, health and sanitation
- (iv) Employment creation
- (v) Transport including roads, bridges and culverts
- (vi) Equitable distribution of income and wealth
- (vii) Rural empowerment and
- (viii) Participation of local people in planning, decision-making, implementation process and equitable distribution of the benefits of planned programmes

### **7.7.2 Rural Institutions Conducive to Rural Development**

Bangladesh may claim to have experienced a plethora of rural level organizations in the last half a century. As distinct from the sectoral approaches to comprehensive rural development, the BARD launched the Comprehensive Village Development Programme in 1975 with the principal objective of ameliorating the social-economic status of all groups of people in a village through a common institutional framework. The primary objective of the programme was to study and evaluate the viability and effectiveness of organising marginal farmers and landless labourers into small

groups of their own for improving their socio-economic status through productive activities. This programme approach have to be expanded throughout the country.

**NGOs:** Alongside the public initiative, the voluntary and private organizations, more popularly known as the Non-Government Organization (NGO), cover a wide range of rural development activities including those oriented towards development of income and employment, health and sanitation, agriculture and rural craft, vocational education, relief and rehabilitation, family planning, mother and childcare. There are many NGOs in the country including international ones. One predominant approach to rural development by the NGOs involves poverty alleviation through rendering small scale credit to the purposively organized groups of rural poor and landless people, commonly coined as the 'micro credit model'. However, the micro-credit approach has turned into a 'credit plus' approach which is a more holistic approach of providing developing services, and 'micro-credit' has given way to a broader term, 'micro-finance'. A number of NGOs have achieved national and international reputation through this approach, notably, BRAC, Proshika Manobik Unnayan Kendra, ASA and Rangpur-Dinajpur Rural Service (RDRS). The Grameen Bank, a pioneering specialised micro-financing institution (MFI), has also earned world-wide reputation in providing financial services to the poor. The coverage of poor and landless households by the NGOs, their scope of development activities, and effectiveness of their programmes are significantly larger than that of the public sector organisations in Bangladesh.

### **7.7.3 Strategy for Rural Development**

People are more accustomed to thinking of co-operatives, NGOs, BRDB, etc as rural institutions geared to rural development. However, the outreaches of various government departments such as education, health and family planning, public health, LGED, Land Administration, etc. have also provided rural development institutions. Establishment of a powerful autonomous local government body is imperative to initiate and provide such coordination.

### **7.7.4 Rural Non-Farm Activities (RNFA)**

Rural non-farm sector is reported to account for 40 per cent of reported rural employment and more than 50 per cent of rural income. These activities are also growing fast. Thus the importance of the RNFAs may be easily appreciated. Wholesale and retail trade is the common RNFA. The manufacturing sector explains for a quarter of the RNFA enterprises.

It has been estimated that in 2021, rural labour force aged 15 years or more will reach 48.8 million. Out-migration will be not an option for everyone, and urban centres cannot be assumed capable of providing adequate livelihood opportunities for all those unable to make a living in agriculture. This implies that RNFA is a potential vehicle for poverty reduction in rural areas. With current labour force participation rate there will be need for providing or creating additional jobs for about 19.8 million of rural labour force in 2021.

### **Role of RNF Sector**

Government will need to create a framework conducive for the development of the rural non-farm sector and will seek ways to:

- Place a stronger emphasis on business development/non-financial services;
- Enhance women's participation in decision making and ownership;
- Improve market access and infrastructure;

- Target vulnerable rural populations and scale up their activities; and
- Increase budget allocation to rural area and implementation through a strong autonomous local government

### **7.7.5 Linkages Between Farm and Non-Farm Sectors**

Agricultural growth will be the necessary precondition for the fostering of all linkages between the two sectors. Non-farm activities will follow agricultural growth, and depend greatly on local and regional demand. For example, the Green Revolution acted as a driving force for small-scale industrial expansion in rural areas in Punjab and Haryana states of India. In China in the early 1980s, a combination of macroeconomic shifts, decentralization of local government, de-collectivization of farming and higher procurement prices allowed a rapid expansion of agricultural output. A dramatic expansion in small-scale industry and commerce followed from the consequent rise in incomes (driving consumer demand and house-building) and the availability of surplus capital retained in the localities.

A rise in farm income will stimulate the consumption of goods and services, many of which will be produced by RNF enterprises. Growth, in RNFAs will, in turn, reinforce agricultural production through lower input costs, technological change and the ploughing back of profit into farming.

#### ***Measures for Improving the RNFAs:***

Rural institutions through the gender-responsive cooperatives should have a big role in the development of the RNFA to alleviate poverty. Policies should be pursued which engage a wider range of institutions working in collaboration with each other, including cooperatives, NGOs, local financial institutions and the private sector.

Government will need to promote gender-responsive entrepreneurial development in micro, small and medium enterprises in rural areas facilitating their access to financial and non-financial services, improving their access to markets, and creating a supportive institutional environment.

Micro-credit should reach more women and men as small farmers, fishers and landless. Institutional credit for self employment programmes should be provided on a larger scale in view of its significance in relation to long-term benefits.

Policy actions are called for agro-processing and agri-business activities in rural areas within the general thrust of international trade rules and agreements and to harmonize sanitary and technical barriers with international standards.

### **7.7.6 Marketing Agricultural Products**

In Bangladesh, the small, medium and even large farmers are vulnerable to the exercise and influence of market power by rural traders, wholesalers, retailers and processors. With limited control over the pricing of agricultural inputs, agricultural outputs and with limited market information, farmer's are poorly rewarded for the efforts and risks they endure. Furthermore, poorly developed infrastructure and inadequate quality control often results in a significant reduction in product quality and gross returns as well as increasing product wastage.

#### ***Suggested interventions for marketing***

- Link growers with the traders/superstores/exporters

- Encourage establishing collection centre/pack house for sorting, grading and packaging
- Develop market for different agro commodities for both local and export destinations
- Utilize huge water bodies for fish production and link with the urban markets
- Develop packaging materials for different agro-commodities in consultation with stakeholders for export markets
- Help establish cold storages at wholesale markets
- Establish cooperative warehousing facilities at village/union level
- Develop modern testing facilities and arrange accreditation and consumers should be assured of product quality.
- Make awareness campaign on SPS and quality assurance system
- Training for the exporters on rules/regulations for different international markets
- Help create markets and competitiveness in every stage of marketing.

### **7.7.7 Rural Credit**

Reforms and innovations are necessary to improve credit market opportunities for the rural poor and increase the efficacy of rural finance.

The barriers hindering rural credit delivery to the poor farmers come from institutional failures for monitoring and enforcing credit transactions and ineffective mechanisms for reaching the poor farmers. Several innovative approaches introduced by micro credit institutions can be replicated in designing credit programmes for the small farmers e.g. pressure to make regular loan payments, training and technical advice to resolve low profitability, and portfolio diversification to reduce vulnerability. The retail banking for the small farmers can be expanded by incorporating successful features of financial intermediation for small clients e.g. character-based lending in lieu of group lending using local agents to assess creditworthiness, monitor performance and enforce contracts; decentralized decision making and performance-based remuneration system; non-traditional collateral (e.g. borrower's trustworthiness and character) and dependence on social hierarchies (e.g. elected local representatives) for contract enforcement. The Small Farmers' Development Foundation (SFDF) has recently been established as an autonomous institution by the Government to provide micro-finance to small and marginal farmers in Bangladesh. Full support should be provided to it to make it an effective institution to cater to the needs of this hitherto neglected group in the rural areas.

Micro-finance provided to small farmers, fishers and other rural poor will open the door to the adoption of innovative technology with new orientation in research and extension to make technologies relevant and accessible to the rural poor. Landless households have their strategies of survival. Vegetables, eggs or fruits can be purchased from the peasants, carried to the nearest market, and sold for margin. The returns to such petty trade are not high, but for the unemployed, they are an adequate remuneration for labour. A tiller can be purchased and rented for tilling operations and a diesel operated engine for irrigation, hauling and rice milling. In such cases, group ownership of agricultural equipment may be promoted, especially for the resource poor marginal farmers and landless labourers. All these strategies for survival need credit. In 2021, there will be at least 25 million non-farm and marginal and small farm households who will need the credit support. Micro-finance will have great instrumental value in turning about 15 million unemployed and underemployed labour into income-yielding assets with increased crop production, livestock farming, fishery and development of small and cottage industries and SMEs in the rural areas in 2021.

Major NGOs like BRAC and an MFI like Grameen Bank will continue to dominate by coverage of poor, timely and convenient delivery at the door of the rural poor; non-insistence on collateral; including promotion of thrift and saving habit; discipline in repayment schedule; low rates of overdue and high rates of recovery; favourable impact on the income of the rural poor; support to strategies of survival of the poor; and use of credit for asset development and obtaining for benefits of non-farm employment. It appears that the most feasible option in extending the benefits of institutional credit to the landless poor will be through cooperatives with the support of rural institutions and major NGOs; unless the commercial banks have established appropriate system of credit delivery to the poor with their personnel adequately equipped. The management of cooperatives, including KSS will have to be improved and equipped to serve the landless rural poor. However, a thorough overhauling of the present cooperative system is needed. In the new system, cooperatives would strictly follow cooperative principles of self-help in financing and management, which would ensure their sustainability and healthy growth.

GOs provide loans for marginal and small farmers. The loans are for high-value crop such as vegetable production and raising livestock animal. The amount increases if the preceding loan is repaid with agreed terms. The credit is useful for seasonal crop production and beef fattening. However, there exists room for further surveillance of the NGOs in terms of their accountability, transparency and political causes. Again, one may wonder why NGO effective rate of interest should be so high when they have achieved low rates of overdue and high rates of recovery of loans. NGO Bureau needs to be further strengthened

### **Cooperatives**

Cooperatives in Bangladesh have been the pioneer to introduce and administer rural credit programmes involving farmers. Initially three tier and subsequently both three and two tier cooperatives were formed to channelise government financed rural credit which played vital role in increasing agricultural production especially winter crops. Considering the increasing importance of rural institution to be used as viable platform for service delivery like subsidy, agricultural input support, credit support, technology transfer and marketing of agricultural products formation of restructured village based multipurpose cooperatives can be a good option. Therefore, the aim of the policy shall be streamlining the cooperatives for an effective rural financing and support service delivery system especially agricultural marketing, production and storage of fruits and vegetables, milk and SME based products.

## Chapter 8

### ENERGY SECURITY FOR DEVELOPMENT AND WELFARE

Electricity is an essential ingredient for development in both economic and social arena. Its consumption is synonymous with modern life style in the industrially developed world. Communication, transportation, food supply and preservation, housing, office and establishment, mill and factory that are set up at the present time, and even all forms of happiness and affluence, and recreation depend mostly on adequate supply and availability of electricity at an affordable price. Therefore the prerequisite for progress of the nation is the supply of electricity in a dependable manner at a reasonable price compatible with demand. Ensuring the availability of electricity is the prime responsibility of the Government.

#### 8.1 The Present Electricity Crisis

The country appears to have fallen into the vortex of power and energy crisis. . The present electricity crisis is manifest in the costly and annoying load shedding that has been going on over the past years and which could not be mitigated over a short period of time. The creeping energy tariff rise is another face of this crisis. The stalemate with the use of fine quality coal available in the country is yet another aspect of this power and energy crisis.

The crisis has snowballed through a long period, because of sheer neglect. Power load has mounted but power production has not increased. So more load shedding is the sequel. The electricity crisis has assumed critical proportion. During the tenure of the caretaker government, rental power has been procured at exorbitant rates on the plea of crisis mitigation. Small power plants have been installed though in private sector.

Programmes of reform for resolving electricity crisis and development of power sector are in progress. Foreign fund has been made available for implementation of the programme for reform and this fund is financing Power Cell.

#### Current Issues:

- Matching supply and demand for electricity
- To ensure energy security for all
- To reduce the consumption of natural gas, thereby releasing gas for fertilizer or to increase the use of coal for electricity production to release gas for alternative use
- Finalization of coal extraction plan
- Reasonable cost-effective price policy for gas, coal and electricity, these being under the control of the government
- Energy mix for electricity generation
- Efficiency of the power sector
- Reduction of system loss.

#### The Strategies, Constraints and Possibilities of the Sector

##### *Strategies*

- To diversify the use of primary fuel such as gas, coal, liquid fuel etc. will be used for power generation

- To have provision for dual fuel in power plants wherever possible
- To increase power generation through renewable sources e.g. solar, wind, micro hydro etc.
- To implement nuclear fuel based power plant
- To finance power generation projects through Public – Private Partnership (PPP), GOB funding for IPP etc.
- To increase the sector efficiency, the reform measures will be implemented

**Constraints**

- Absence of adequate Public & Private investment in Power Generation
- Absence of Cost Reflective Tariff
- Absence of Primary Fuel Supply Chain

**Possibilities**

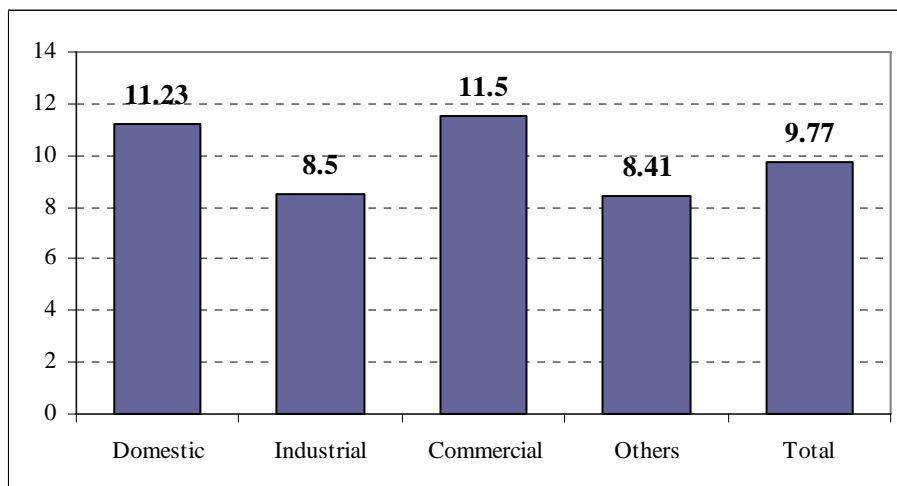
- Coal based power plants based on domestic coal and imported coal
- Ruppoor Nuclear Power Plant
- Availability of new gas both in offshore and onshore
- Public-Private Partnership Projects (PPP)
- Prospect of participation of local investors in the sector

**8.2 Energy Security and Electricity for all by 2021**

**8.2.1 Demand for Electricity**

Also, electricity is the cleanest source of energy. Indeed, in the concept of energy ladder, electricity occupies the top position and the demand for electricity rises as income rises and/or people desire a better quality of life. Overall, it has risen at the exponential rate of about 10 percent while by sectors, it is residential and commercial consumption which has risen fastest (Figure 8.1).

**Figure 8.1: Annual Rates of Growth (%) of Power Consumption by Sector, 2000-07**



There is one other aspect to this demand which have remained practically unnoticed. The intensity of use of electricity has risen tremendously over time. It had been only about 30 GWH per thousand crore taka. of GDP in the early 1980s but crossed 80 GWH by 2002. The change in the structure of GDP in favour of manufacturing and services as well as rapid urbanization and wasteful consumption may have been major reasons behind this increase of electricity intensity of use.

Under an average 12 percent rate of growth, the generation shall double every six years or so. That means by 2021, need for gross generation shall be more or less four times that at present. As of December 2009, the installed capacity of power plants had been 5,803 MW and the derated capacity was 5,250 MW. Under these circumstances, one would accept the figures of Vision 2021, i.e. 20,000 MW of power generation by 2021 as the minimum that should be accomplished.

## **Objectives and Targets of the Power Sector in the Perspective Plan:**

### ***Targets of electricity production***

Electricity generation in the country by the year **2013**: 7,000 MW

Electricity generation in the country by the year **2015**: 8,000 MW

Electricity generation in the country by the year **2021**: 20,000 MW

Electricity for all by **2021**

The government Power System Master Plan (PSMP-2005) projects that 62 per cent and 72 per cent access to power will be achieved in FY-2012 and FY-2014 respectively with relatively lower installed capacity.

## **Objectives during the Perspective Plan**

The following objectives for the sector have been envisioned:

- To ensure energy security
- Making the power sector financially viable and able to facilitate economic growth;
- Increasing the sector's efficiency;
- Introducing new corporate culture in the power sector entities;
- Improving the reliability and quality of electricity supply;
- Using natural gas, coal and oil as the primary fuel for electricity generation;
- Increasing private sector participation to mobilise finance;
- Ensuring reasonable and affordable price for electricity by pursuing least cost options;
- Promoting competition among various entities.

There are some government sponsored projections on power demand as given in the "Gas System Master Plan (GSMP): 2006". The Master Plan has three scenarios of power generation growth. Assuming GDP growth rate of 4.5 per cent, 5.2 per cent and 8 per cent, the Master Plan projected power demand to be 12,424 MW (Low case), 14,934 MW (Base case) and 27,377 MW (High case) respectively with an elasticity of demand taken to be 1.5. However, such elasticity of demand for power is not sustainable in the long-run. In India, such elasticity is 1.0 while in the next Indian Plan, the elasticity is projected to be 0.8. The elasticity of power too is decreasing in value due to the continuous development taking place in the technical, technological and managerial aspects of power generation and distribution and types of electrical equipments used. As a result, there is also the decline in the growth rate of power demand for the desired growth rate of GDP. It can be perceived from the experience of other countries that very soon it will be possible to acquire a power elasticity of 1.0, and by 2021 it may come down to 0.8.



***Efficient energy use:*** Energy saving bulbs is already in the market. In future energy saving household gadgets and equipments could come which will have the potential of reducing demand for electricity. Energy is not in crisis proportion in Bangladesh only; it is a world crisis.

Under the circumstances, the figures of Vision 2021, i.e. 20,000 MW of power generation by 2021 (which is around 600 kwh per capita consumption compared to kwh 146 in 2007) could be accepted. This will indicate a power generation development growth rate of around 10 percent over the period of the OPP. This may be considered respectable for a sector that has been playing truant over the last decades.

### **8.2.2 Supply of Electricity**

In order to achieve these goals over the 2021 Vision Period, governance in the sector has to be strengthened, keeping efficiency and integrity at a very high level and political considerations at bay as much as possible. The sector is highly import-dependent for its machineries and maintenance equipments, which are very costly and enmeshed with high degrees of technicalities in an oligopoly market situation. Thus any move to purchase in this sector is apt to let loose the niceties of criticism about the manners of deals with foreign suppliers and their agents. In the past last minutes frenetic efforts at purchases make Bangladesh vulnerable in the world market. Thus corruption and inefficiency started right from generation and procurement process. Expenses were padded along with questionable plants. Procurement process has been also turned shaky, resulting in malingering and incompetence. Independent Power Producers (IPP) showed some promise in this respect; but the lack of transparency within a reasonably free press and media regime in the country stymied successful procurement process.

Power supply has always lagged behind demand in the past decades. In order to face this situation resolutely, bold decisions have to be made with regards to procurement of power plants. Along with this, the principles of pricing of electricity have to be based on true alternative cost of gas, the main input for generation. Maintenance and depreciation of the plants and machinery have to be properly looked after. Corruption at the distribution line has to be plugged in. In seeking to achieve a GDP growth rate of two digit figures, private investment including FDI has to be depended on. Also in the Investment Climate Assessment the availability of an even flow of electricity at competitive price figures prominently.

It should also be possible to dispense with the necessity to have captive generators for the business and industries, which, after all, are costly, particularly through the use of costly gas.

Power generation in line with Vision 2021 may be as follows:

FY 2015, 8000 MW  
FY 2021, 20,000 MW

### ***Balanced Generation, Transmission and Distribution***

In power sector planning, there should be a balanced growth of generation, transmission and distribution capacities. Even within the regime of generation, the availability of gas or coal should be taken into consideration.

There is a long list of projects and programmes under implementation or negotiation that could increase the generation, transmission and distribution of electricity. These would be better considered under the Sixth Five-Year Plan. Generation of electricity is mainly related with more non-renewable energy consumption that is coal, gas etc. As a result, the emission of Green House Gases

(GHGs) such as carbon-di-oxide would enhance the environmental degradation/pollution. However more power for development is needed, hence saving power as well as renewable energy for future generation is needed. To increase energy efficiency and capacity, switch from non-renewable energy sources to renewable energy sources for example solar, wind, small-hydro, geo-thermal, tidal, and wave should be a strategy. The Coastal Belt area of Bangladesh could be a good source of tidal and wind energy.

### 8.3 Contribution of Private Sector in Power Generation

Within the purview of the Private Power Generation Policy, the Independent Power Producers (IPP) have started power generation in the private sector from 1998-99. Buying of rental based power was initiated from 2007 to cope with the power crisis. The gas based power generation capacity through the Small Power Plants (SPP) and the Rental Power Plants (RPP) seems poised to increase. Hence, the generation of power by the PDB may be kept on hold for lack of Gas. Some analysts fear that this way the public sector power generation might become restricted or obliterated in the future.

Later, the rental based power generation increased to tackle the power shortage during the period of the Care-taker Govt. and, because this power had to be purchased at a unit price rate higher than the normal, an extensive imbalance ensued in the unit price rate of power.

A radical and revolutionary change in the power sector is so essential for building it up as a public oriented power sector. There lay the most severe weakness of the power sector reform.

The private sector power generation could be encouraged to supplement the power generation of the public sector. Presently the private sector accounts for almost one-third of the power generation in the country.

**Table 8.1 Public and Private Sector-wise Allocation of Generating Capacity of Plants**

| Sector        | Public Sector |         |            | Private Sector |      |              |               |            | Total       |
|---------------|---------------|---------|------------|----------------|------|--------------|---------------|------------|-------------|
|               | PDB           | Company | Sub total  | IPPs           | SPPs | RPPs (3 yrs) | RPPs (15 yrs) | Sub total  |             |
| Capacity (MW) | 2522          | 796     | 3318 (66%) | 1271           | 189  | 138          | 114           | 1712 (34%) | 5030 (100%) |

This high share of the private sector has come to pass for no particular preference or efficiency of the sector but for the compulsions of the situation of a severe shortage in the public sector generation of electricity.

**Public private participation (PPP)** may be inducted in this context. This may hold price escalation by the private sector to reasonable limits provided public sector representatives' efficiency and integrity could be ensured. Its best contribution could be adequate private sector-lead initiatives to foresee power demand and plan generation in time, thereby augmenting energy security. This will have the merit of reducing pressure on the government budget.

### 8.4 System Loss

System loss of more than 4 per cent in power generation is in no way acceptable. It has been stated that the system loss for power generation by PDB is 6.35 per cent on an average. The expenditure for operation and management of power generation in the public sector has been shown as average 20 per cent. As the operating capacity of the PDB is about 50 per cent of its installed

capacity, so this expenditure becomes near to 40 per cent for the power generated by the PDB. In case of the IPPs this expenditure is 11.12 per cent. The amount of de-rated power due to lack of proper repair, maintenance and rehabilitation is 553 MW. There is no investment, and also no plan, for improvement of these plants. Again, some plants belonging to the PDB are inefficient due to the expiry of working life. Hence, the energy consumption, i.e. gas consumption per unit of generated power is excessive. Besides, for lack of gas, the ancillary expenses of those plants that are shut down, or generate lesser amount of power, increase the cost of power generation. Hence the cost of power distribution is increasing due to unacceptable system loss in generation, excessive operation and maintenance cost and inefficient power generation.

## 8.5 Supply Price of Electricity

It is seen from the analysis of the above facts that the expenditure hike in the purchase, operation and maintenance of plants in the generation stage, and system loss and power purchase from private sector – all these show the way to increased spending and consequent higher cost of power supply. In the end the price per unit of electricity needs enhancement. While some enhancement will be necessary in the immediate future, causes for the increases in cost shall be examined and corrective measure taken.

A considerable loss of the PDB is attributable to rental power, besides its own system loss. This type of question is bound to arise in the power sector where the state and the private sector will both participate to produce the same electricity. A powerful Energy Regulatory Commission will have to face these issues. There is no alternative or one time fix of these issues.

## 8.6 Energy Mix and Bangladesh

The present energy mix in Bangladesh is compared to global position is as follows:

**Table 8.2: Present Energy Mix in Bangladesh Compared to Global Position**

| Energy    | Bangladesh |      | Global  |      |
|-----------|------------|------|---------|------|
|           | Current    | 2021 | Current | 2030 |
| Gas       | 87.5%      | 30%  | 18%     | 28%  |
| Oil       | 6%         | 3%   | 10%     | 5%   |
| Coal      | 3.7%       | 53%  | 37%     | 38%  |
| Hydro     | 2.7%       | 1%   | 17%     | 4%   |
| Nuclear   | 0%         | 10%  | 17%     | 19%  |
| Renewable | 0.5%       | 3%   | 1%      | 6%   |

About 88 per cent of this power is currently generated from gas. About 50 per cent of the consumed commercial energy is used for power generation.

**Coal:** Though 37 per cent of the present global power generated is from coal, in spite of Bangladesh being a country rich in coal reserves, the contribution of coal in her power generation is very meagre, and that is only 3.7 per cent. Due to crisis in gas, there exists barely any scope for gas based additional power generation. Therefore, there is no alternative other than depending on coal for the amount of fuel that will be needed for future power generation in compliance with the demand. However, even under the present electricity and energy crisis there is no initiative visible for generation of electricity using coal. Only in Barapukuria there are two units together with generating capacity 250 MW. The surplus coal available in the coalfield there can support another 125 MW

power plant. Initiative in setting up another plant remains. Coalfield development is suspended on account of lack of approved Coal Policy. Bangladesh is finding it difficult in crafting a coal policy. Though the power from coal is now 3.7 per cent, yet it has to increase several fold up to the year 2021. Bangladesh should firm up her coal policy.

*The coal reserve of Bangladesh* is unused till now due to lack of planning. The power generating capacity shall have to be 20,000 MW in order to meet the power demand in 2021. Presently, gas can help power generation of only 3115 MW. Thus, there is no alternative other than depending on coal for meeting the gradually increasing demand together with the power deficit. Bangladesh can easily meet her energy demand from her coal reserve up to 2021.

From the urgency of discouraging the use of carbon-rich energy sources according to the Kyoto Protocol, there is procedure for reducing the carbon emission under the provisions of carbon-trading. The countries that emit carbon dioxide in more quantities than a specified amount can create for them, within the provisions of carbon-trading, an opportunity to consume extra amount of carbon-rich fuel to the extent of such emission reduction as effected by a developing country by reducing her consumption of carbon-rich energy source. In this arrangement there is financial transaction between the countries that deprive themselves of fossil fuel for emission reduction and the countries that create for them through the use of fossil fuel the opportunity of carbon dioxide emission. This very financial transaction is the carbon-trading. A reckoning indicates that during 2008 there might have been financial transactions worth US\$ 92 billion through this carbon trading. Bangladesh has in the mean time taken up a few projects in this connection. By those projects there may be a yearly reduction of about 300,859 tonnes of carbon emission. Therefore Bangladesh might earn US\$ 5.415 million per year through carbon trading and the developed countries might take the opportunity of consuming an extra amount of fuel loaded with 300,859 tonnes of carbon. Besides, the international organizations spend billions of US\$ each year for global poverty reduction. A few millions of US\$ are also spent in Bangladesh. Therefore, the international community may be called upon to assist provided daily 1 kWh of power per family in order to bring the presently 90 million electricity deprived people of Bangladesh, from darkness into light. Besides, income of people will also increase in the period enabling a section of the 90 million people without electricity.

**Gas in Bangladesh** : The generated power from gas may be 30 per cent. Bangladesh has been swaying between optimism and pessimism with her gas resources. As late as February 2009, it was said that Bangladesh might have the potential to become a major gas producer as well as supplier to the vast potential market in the region. Bangladesh also could use its natural gas resources to power vehicles with Compressed Natural Gas (CNG) to help alleviate air pollution problems in Dhaka, and also in response to high petroleum prices, to produce electricity, petrochemicals, and fertilizers, which it also could use both within the country as well as for export. There was widespread household use of gas as fuel. Before that an impression was given that Bangladesh was floating on natural gas. Now, it is being said that Bangladesh's present known gas reserves was sufficient to meet the national demands up to 2019. The one estimate of gas availability is as follows:

- Norwegian Petroleum Directorate/Net Proven Reserve 16.3 Tcf.
- US Geological Survey/ "Undiscovered Reserve", Additional 32.1 Tcf.

There are estimates of other agencies. These vary but do not show satisfactory ratios of current production to net reserves or net reserves to demand projections. Many people in the country feel that Bangladesh gas resources first should be used for domestic purposes like electric power generation, fertilizer production, transportation, etc. Some will even press for more use of coal for electricity generation, releasing gas for very many other economic uses.

There is also a popular demand to restrict future exploration and drilling for gas to national organizations keeping offshore drillings to international companies.

## 8.7 Non-traditional Energy/Renewable Fuel

**Other sources of energy:** The power generated from renewable sources is now 1 per cent of total power generation in the world and it may become 3 per cent in 2021. The power now generated in Bangladesh from renewable sources is about 10 MW only, which about 0.5 percent of the total energy mix. Provided that foreign investment becomes available to implement a renewable 500 MW power generation project by 2021, its share in power generation may then become 3 per cent. Bangladesh is currently negotiating with the Russian Federation on the prospects of nuclear energy. The outcome in terms of production by 2021 is somewhat premature. It is hoped to be on the positive side. Solar energy, hydroelectricity, bio-gas, ethanol from zatropa seeds, windmills, etc. will have to be explored to face the ultimate withering away of the hydro-carbon.

**Hydroelectric power** generation in co-operation with Nepal, Bhutan and India are not too bright in the coming ten years but could be explored. Mention may be made that a 20-year long hydro-power development plan is being implemented in the Himalayan region including Pakistan and India. This plan will be implemented by the year 2027. It is thought that through regional cooperation this hydro-power will be the prime regulator in meeting the regional power deficit. But there is little possibility of this power making way to the regional grid by the year 2021.

**Solar energy** holds some real prospect in Bangladesh as has been seen by the pioneering work of some of our prospectors. In the long run, solar energy appears to have an unlimited supply. Research and experimentation in these lines including wind power should be encouraged. Prospect of ethanol with our land scarcity may be not be so bright. A vibrant economy with commensurate research shall explore these avenues of renewable energy. Advantage in technology will popularise Bio-fuels including Bio-gas to replace bio-mass energy. GoB will also take advantage of clean development mechanism (CDM) policies to secure external funding in the areas of energy efficiency, development of alternative sources of energy and enhancing carbon storage capacity in the country. To exploit the feasibility of using wind energy by using windmills. There should be a correct wind flow mapping for the whole year for the whole country.

**Power Imports:** The export of electricity from Bhutan to India or cross-border power export/import between India and Nepal are worth mentioning. Myanmar has satisfactory gas reserve. Under these circumstances, Bangladesh could negotiate power import from Bhutan or Nepal or gas import from Myanmar. But, Bangladesh has not yet gained the financial capability of buying such electricity at commercial price rate for meeting her demand. However, import of power lines from the border areas of the neighbouring countries could be given a thought in consideration of removing the power crisis of border zones. Besides, if it becomes possible to import power from Myanmar, then the cost that power will comparatively be lower. Hence the import of this power to the grid lines may be given consideration. Bhutan with her enormous hydroelectric potentials is exporting huge quantities of electricity to India. Bangladesh could negotiate with Bhutan for a slice of that exportable surplus.

## 8.8 Fuel: Oil, Gas and Coal

In the previous section gas and coal has been discussed as inputs for the production of electricity. However, there are other uses of gas and coal and other sources of fuel like imported petroleum or coal. These require attention along with energy security.

The objectives of the oil and gas sector/sub sector in the Perspective Plan (OPP) period (2010-21) is to include the following:

- Increase the reserve base and production of gas through accelerated exploration, appraisal and development of gas fields, production augmentation and optimization of recovery. Accordingly the transmission and distribution Network will be developed;
- Put all out efforts to convert probable and possible reserves into proven ones and also to convert delineated gas resources into reserves;
- Reduction of system loss, both technical and non-technical, and improvement of end use efficiency;
- Creating equitable development opportunities through gradual expansion of gas pipelines to southern, western and northern areas of the country;
- Improving the security of petroleum product supplies;
- Privatization plan for the LNG like liquid fuel sector; and
- Popularization & expansion of domestic LPG use to discourage new domestic gas pipeline connections.

Considering the Vision 2021 regarding electricity and possible POL needs, BPC will take all possible actions to enhance its import/refining, storage and distribution capacity. To meet energy demand, efforts will be made for regional energy security through mutual cooperation in addition to exploring internal sources.

**The current situation on present commercial energy consumption of Bangladesh is as follows:**

|  |       |       |
|--|-------|-------|
| Commercial energy supplied by indigenous Gas | ....  | 68 %  |
| Imported oil and coal                        | ..... | 26. % |
| Indigenous hydro-electricity                 | ..... | 5.4 % |
| TOTAL  | ..... | 100 % |

Therefore, the availability of gas and coal assumes considerable importance. Present consumption of coal is mainly limited to generation of electricity from plant and brick burning (which are mostly imported). It would not be wise to depend on Gas for generation of Electricity. As such demand of coal will significantly increase in electricity generation and moderately in brick burning and others. If necessary, coal should be imported to produce electricity.

### **Production of gas by public and private sector:**

Within last three years Gas production from the Private Sector has increased phenomenally i.e. from about 20 per cent to more than 50 per cent. This in one hand greatly helped to supply increased supply of gas and on the other hand created significant burden/pressure on the financial position of Petrobangla and dependence on the private sector though the public sector has much higher Gas reserve.

The demand for gas for power generation has had a rising trend all throughout the period under consideration while the trend for fertilizer was rising up to the mid 1990s. Since that time, the

consumption of gas by the fertilizer industry has remained largely static. All other sectors experienced rising trends. The fastest growth in demand of natural gas is from the industry sector, with at an exponential rate of about 13 percent, which means that demand is doubling in slightly more than seven years. The average rate of growth for the whole period for domestic use is around 12 percent, and according to this pace, demand for natural gas for domestic use will double by around eight years.

**Table 8 3: Average Annual Growth Rates of Natural Gas, 1991-2007**

| Sector       | Average growth rate (%) |
|--------------|-------------------------|
| Power        | 8.2                     |
| Fertilizer   | 3.9                     |
| Industry     | 12.6                    |
| Domestic     | 12.0                    |
| <b>Total</b> | <b>7.7</b>              |

The country has 22 gas fields of which 13 have producing wells while 3 have suspended production. Six fields have not yet started production. The total reserve (proven and probable) is 28.42 TCF of which the total recoverable reserve, according to latest estimates, is 20.51 TCF. Out of this recoverable reserve, by June 2005, 6.0 TCF has been extracted leaving a maximum of 14.47 TCF to be produced. On the basis of availability and the probable demand scenario, gas shortages are expected soon.

There are prospects of discovering more gas in the country. Some reports indicate a 95 percent probability of finding at least 8.43 TCF of new gas discoveries. The maximum that may be discovered are respectively 65.7 TCF with 5 percent probability and 64 TCF with 10 percent probability. The mean expected discovery levels (with 50 percent probability) are 32 TCF and 42 TCF. One possibility related to good prospects of finding more hydrocarbon including gas is that overpressure has been observed in many gas wells, indicative of good possibilities of large hydrocarbon pools in Bangladesh.

### **Regional distribution of energy and production of LPG**

Present production of gas in the country is about 2000 MMscft. Efforts should be taken to supply more LPG to the western part.

### **Strategies**

Relentless efforts must be made to keep energy supply abreast of burgeoning demand. Construction of power plants must proceed taking all possible risks and contract negotiations made transparent and accountable. Private sector involvement in electricity generation shall take into cognizance the cost price aspect comparable with the public sector. Energy mix shall have more use of coal, if necessary imported coal, in the short and medium term. Nuclear energy must be explored in such an energy poor country. Regional cooperation for augmenting electricity import shall get priority. There must be a deliberate policy of energy conservation. The sector being highly import oriented in a bulk form, transparency must be assured through specially designed modes involving parliamentary oversight.

## *Chapter 9*

### **BUILDING PHYSICAL INFRASTRUCTURE**

This chapter deals with the building of physical infrastructures, i.e. urbanization, transport and telecommunication. Building urban infrastructures like townships, roads, rails, inland water transport etc. helps economic development, employment creation and poverty reduction.

#### **9.1 Urbanization**

Increasing urbanization, a pervasive phenomenon on the Bangladesh economy, is due to rural-urban migration occasioned by the operation of ‘urban pull’ and ‘rural push’ factors in the economy. There is an inexorable urban pull that attracts people living in the countryside to move to urban places. Most often, it is the possibilities of receiving jobs under the government, traders and manufacturers or relatively well-to-do that attracts the people to the urban areas. There are many positive aspect of urban life that allures the rural people to urban areas.

There is also a rural push that promotes urbanization. Certain conditions in rural areas – unequal land distribution, landlessness, agricultural mechanization, and natural calamities like river erosion have strongly influenced population movements in Bangladesh. Rural development and Rural Non-farm activities and a deliberate policy of dispersion of industries may tend to modify the rush towards urban areas.

The extent of urbanization over the years may be seen below:

- 1961 – 5 %
- 1999 – 21 %
- 2005 – 25 %
- 2021 – 38 % (Projected)

Though urbanization in Bangladesh is moving fast yet it is not the most urbanized country. In an inter-country comparison it is observed that industrialized South Korea currently has 80 per cent of the population in urban areas compared to 48 per cent in Indonesia and 32 per cent in Thailand.

While rural population of about 10.78 crores will start to decline with effect from 2021, it will take about 15 years (2035) to approximately equalize the number between urban and rural population. This process of urbanization could be seen also from the development of towns and cities in the country. The number of urban centres of all sizes grew from 78 in 1961 to 522 in 1991. It has been aptly said that with her population density all of Bangladesh will be an urban place within the next few decades or the remotest village will be within a few kilometres of an urban centre.

##### **9.1.1 Challenges of Urbanization**

Any discourse on urbanization in Bangladesh quickly tends to bog down to a lucid description of the urban blight and squalor, particularly with reference to Dhaka. The fast deteriorating traffic congestion, frustrating electric load shedding, air and water pollution, scattered garbage, lack of sanitation, inadequate water supply, dilapidated and hazardous roads, traffic accidents, lack of open space or children parks and playgrounds, inadequate schooling or public libraries, law and order problems, lack of recreation facilities, meager foot paths that exist under control of the vendors, the ubiquitous sight of pathetic slums all over the city, the pitiable beggars roaming in street junctions



etc. all come to mind in a never ending procession of horrid spectacles. It is about time to look into the prospects of an improved urban life.

### 9.1.2 The Goals of Urbanizations in the OPP period are:

- To undertake meaningful and effective urban planning
- To reduce the urban plight and to make cities liveable through provision of urban amenities
- To disperse the population among other towns and growth centres and satellite townships
- Transform slums into legitimate communities
- To improve the lives of poor urban people and promote equity
- Strengthen urban governance

#### Targets

- The targets for urban transport of Dhaka are placed in the transport section.
- Establishment of four Satellite towns around Dhaka.
- Beginning shall be made with compact towns in several areas of the country.
- Accelerate the policy of decentralization of power and functions to pave the way for effective urban governance.

### 9.1.3 Strategies and Policies

The government and the policy planners must recognize that urbanization is inevitable and important for development. To succeed, an urbanization and urban development policy must have realistic goals, and be integrated into the national economic development plan. A sense of urgency has to permeate efforts to address the challenges and opportunities exhibited by the urban transition.

***Need to stabilize urban concentration:*** Faced with opportunities and challenges associated with urbanization, the government has consistently considered the spatial distribution of population as a concern. Finding an effective mix of policies has been difficult, however, the experience does not prescribe any single strategy for achieving either objectives. Migration controls, land-use planning, investment in satellite cities, special economic zones, controls on industrial location, rural development, urbanization and service provision, fiscal incentives and other schemes have been pondered over time and some of these have been tried at different times. It has been seen that their impact depends on the consistency of policies, institutional capacity and coordination, and the available resources.

***Need to energize economic and social development:*** Energetic economic and social development may enable the economy to face the urban challenge as well as check the drift of the rural poor to the urban areas. Urban policy must be linked with a policy of rural *development*. Employment opportunities in the rural areas must be improved through intensive agricultural development and development of cottage industries, animal husbandry etc. A rural development policy will not only reduce urban migration but also help improve the quality of urban life itself.

***Reverse Neglect of smaller towns:*** One critical concern is the increasing concentration in Dhaka, the primate city that has become mega city with all conceivable urban plights. .

While urban Bangladesh as a whole faces huge problems, particularly of infrastructure, to support a burgeoning population, the worse off are the small urban centres that have to contend with the absence of basic services, inadequate new investment and entrenched poverty. One of the reasons for the absence of these basic services is the low investment in the urban centres and the inability of the local bodies to raise independent revenues. Thus while the big cities and metros can generate funds through local taxation, because the urban economy yields higher revenues, greater poverty in the smaller towns makes it impossible for urban local bodies to collect funds for local services, thereby feeding into the vicious circle that compound urban problems. Despite this, the bigger cities and metros continue to attract funding from outside as their problems are more visible while the smaller urban centres continue to be neglected. Systems of governance too are poor in the smaller urban centres. Given the state of many of the smaller towns, it is hardly surprising that many migrants prefer to move to a bigger city, even if they have to live in slums. In some of the Dhaka slums, for instance, despite the overcrowding, people somehow manage to access to water and electricity and some modicum of sanitation. In the long run, the pressure on the bigger cities can only be stemmed if there is fresh investment in the smaller urban centres

***Development of Services Based Urban Growth:*** One of the reasons for the absence of these basic services is the low investment in the urban centres and the inability of the local bodies to raise independent revenues. The phenomenon of static rate of urban holding rates vastly increased the difficulties cities already face in providing adequate infrastructure, housing, employment and social services.

***Balanced urbanization and Satellite towns:*** These cannot be achieved without a deliberate state policy. Well-distributed urban growth is therefore beneficial not only for the less developed areas of the country but also for the population in existing metropolitan complexes since it helps to limit the increase in their cost of living.

One strategy the government can run in terms of developing *compact towns* which can be so located that they criss-cross the major corridors of urban and industrial growth which link the large metropolitan cities. These could be in line with the proposed four **satellite towns** around Dhaka.

And yet another addition in the futuristic ideas could be the development of rural areas *in the format of a town main street* with provisions for urban amenities for the households, thereby reducing the cost of present unplanned homestead building while keeping arrangements for farm yards and cattle and poultry rearing. Experimentation in this line could be encouraged. This will save land from scattered homestead building.

***Provision of Housing for the Poor:*** Another important area of any national policy-plan on urbanization is the housing of the poor. To solve the low-income housing may be the concept of “an urban village”, a place with fixed boundaries. The village would have one market, one clinic, one station on the transit, several primary schools and several bath and wash facilities. A housing policy should exist which should be binding on all urban authorities in different parts of the country. Such a national policy should also provide for the conservation and improvement of housing stock in any town or city.

***Curbing Environmental Pollution:*** The fight against environmental pollution is another aspect of a policy on urbanization where some decisions need to be taken at the national level. It is necessary to

have a national plan as well as enforcement authorities, to make pollution control effective to the extent that industry (i.e. tannery in Dhaka) is decentralised or shifted from the heart of the city.

***Devising effective Urban Governance:*** Effective urban governance can provide sufficient space to city corporations, municipalities, Upazila centres, neighbourhoods and communities. It also involves enhancing the capacity of city and local authorities to partner with the private sector and civil society in delivering services and promoting economic development. Governance issues in these cities are critical. Parallel with decentralization and local government reforms initiatives, sector reforms in such areas as land, housing, water, sanitation, education, health, etc., have to be undertaken effectively.

## **9.2 Transport**

Bangladesh's network of roads, railways, river-ways, air service and ports has been serving the cause of development and their future strides are delineated in the Perspective Plan (2011-2021).

Over the years, the growth in the demand for transport has been more than the growth of GDP in Bangladesh. The total number of passengers carried and freight moved in each mode have experienced an absolute increase. However, as reflected by the modal share figures, growth in three modes has not occurred at the same rate. Due to the massive development of the road network, the modal share of roadways for passenger travel has increased over the years at the expense of railways and inland waterways.

### **9.2.1 Improving Roadways**

The primary road network consisting of National Highways, Regional Highways and Zila Road (former Feeder Road Type A) is looked after by RHD and measure up to 21,571 Km. On the other hand, rest of the roads, which are classified as Upazilla Road, Union Road and Village Road mainly to serve rural areas, are looked after by the Local Government Engineering Department (LGED). The discussion here took advantage of the Integrated Multi-Modal transport Policy, Final Draft (2008) and the Road Master Plan of the RHD and Rural Road Master Plan of the LGED.

## **Objectives, strategies and policies**

- There is hardly any scope to increase the allocation for roadways, because already its allocation is much more than the railways or inland waterways. Attention now should be given to maintenance, especially routine and periodic maintenance, in the next 10 years.
- New road construction should be as few as possible as Bangladesh already has an extensive road network, considering the rural roads. However, new Zila roads will need to be constructed to connect the 16 Upazilla headquarters, which are still not under the RHD network.
- The major highways of the country are National Highway 1 to 8 should receive the highest attention in order to ensure high level of service, safety, and quality. Already there is a project to make the Dhaka-Chittagong Highway (NH1) a four-lane road. Gradually the other seven roads should be turned into four-lane roads in the OPP years and beyond according to priority. The primary task of these roads should be to provide high mobility with limited access. They should be the backbone of eight transport corridors, which would facilitate speedy movement of freight to and from the ports and a high passenger-km volume. These roads can form a part

of the regional road network as well as the Trans-Asian road network. They will facilitate trade between Bangladesh and its neighbouring countries.

- To ensure a balanced development across the country, there should be adequate number of east-west connections. The Padma Bridge will be a milestone in this regard. This 6.15 km long and 22m width Bridge will serve southwest part of Bangladesh and improve the connection between Mongla Port and Dhaka. Every effort should be given so that the project starts and finishes on time.
- To monitor the overloading of trucks and buses, weight bridges should be installed on different RHD roads in phases. This would prevent the damage of roads from heavy axle-load and reduce the need for road maintenance.

### **Maintenance and other issues in the Road Sub-Sector**

The development of the road sector has given rise to some problems and issues. With the extension of the road network, the responsibility of sustaining the network at a satisfactory standard has become a challenge for RHD. In case of Regional Roads, both the surface condition and underlying strength are not satisfactory. This situation has occurred as the routine maintenance was not carried out at a level, which is necessary to ensure the sustainability of these roads. Unless routine maintenance is given importance, the value of the investment on rebuilding and periodic maintenance will diminish over time.

More than one-fourth of Zila Roads is in poor condition. Besides, there are 16 Upazilas which are not yet served by Zila roads. Zila Roads have an additional issue to deal with; 10,000 kilometres of Zila Roads are paved, while 3,600 kilometres still remain to be paved.

There are as many as 15,000 structures on the RHD road network. Like the roads, bridges on the RHD road network needs massive rehabilitation in the form of major repair or full/partial replacement, because a significant proportion of them have been damaged. Overloading of trucks and buses is putting excess pressure on the roads, causing their early damage. This phenomenon results in a loss of Taka 300 crore per year in the form of additional maintenance and rehabilitation requirements.

The design of recently constructed small bridges and culverts has not taken into account of the country boats that ply the watercourses. As a result, the vertical and width clearances under these bridges and culverts are not sufficient for the smooth movement of waterborne traffic

The Road Master Plan (RMP: 2010-24) of the RHD has the following important roads and bridges to be completed by the end of the 2010-2024.

- Dhaka-Chittagong (4 Lane)
- Dhaka-Mymensingh 4 Lane (to Mawna)
- Mynamati-Brahmanbaria
- Sylhet-Sunamganj Road
- Dhaka Eastern Bypass
- Dhaka Western Bypass
- Dhaka Outer Orbital Road

- Upgrading Bhatiapara-Narial-Jessore Road
- Deep Sea Port
- Chakaria-Chittagong (4 lane)
- Dhaka-Tangail (4 lane)
- Baneshwar-Belephur (4 lane)
- Dhaka-Baniajuri (4 lane)
- Bhairab-Moulvibazar (4 lane)
- Dhaka-Bhariab (4 lane)
- Habiganj-Sylhet (4 lane)
- Jessore-Benapole (4 lane)
- Chittagong Bypass
- Hatazari Link Road
- 2<sup>nd</sup> Meghna Bridge
- 2<sup>nd</sup> Meghna Gumati Bridge
- Padma Bridge

Besides the above priority list of the RMP the following projects have been identified for seeking external assistance in the long run

- Construction of Lebukhali Bridge on Barisal-Patuakhali National Highway
- Construction of Kazirtak Bridge over Arialkha River of Mostafapur-Madaripur-Shariatpur-Chandpur Road (7<sup>th</sup> Bangladesh-China Friendship Bridge)
- Construction of 2<sup>nd</sup> Meghna-Gomti Bridge on Dhaka-Chittagong National Highway
- Improvement of Faridpur-Barisal-Patuakhali National Highway
- Construction of Rail-cum-Road Bridge over the River Karnaphuli at Kalurghat
- Construction of Tunnel under Karnafuli River
- 4-Laning of Nabinagar-Chandra-Tangail-Jamuna Bridge Road
- Construction of Bhatiapara-Kalna-Lohagora-Narail-Jessore Benapole National Highway including Kalna Bridge
- Construction of Tunnel from Bir Shresta Shaheed Jahangir Gate to Agargaon Rokeya Swarani
- 4 Laning of Dhaka-Mawa-Bhanga Road
- Construction of 2<sup>nd</sup> Padma Multipurpose Bridge at Paturia-Daulatdia
- Construction of Moghbazar-Mouchak (Combined) Flyover in Dhaka Metropolitan city

### **LGED Roads**

The Local Government Engineering Department (LGED) under the Local Government Division of the Ministry of Local Government, Rural Development and Co-operatives has the primary mandate of construction and maintenance of Upazila Roads, Union Roads and Village Roads and bridges/culverts and the development of Growth Centres, Rural Markets and Union Parishad Complexes with the objectives to improve quality of life of rural population through improved physical infrastructure, agriculture, employment opportunities and improved governance along with the Local Government Institutions (LGIs). The objectives are:

- To identify/prioritise a most useful and effective rural road network through out the country to ease the rural life as a whole.
- To provide all weather access to all Growth Centres, all Union Parishads Complexes, most of the rural markets and other service delivery centres of the rural areas.
- To improve rural accessibility for facilitating agricultural production and marketing of different products.
- To reduce poverty through employment generation and accelerating economic activities in rural areas.
- To strengthen the Local Government Institutions and promoting local governance.

The total length/number of rural infrastructure to be developed/improved beyond the length/number covered under the existing LGED projects and resource requirement for development of those are given in Table-10.1

**Table 9.1: Length/Number of Rural Infrastructure to be Improved**

| <b>Component</b>  | <b>Target<br/>Total Length/Number to be Improved</b> |
|---|--|
| <b>Upazila Road (to be completed by 2014-15)</b>                    |  |
| Road (km)   | 18277<br>(100%)                                      |
| Bridge/Culvert (m)  | 112233<br>(100%)                                     |
| <b>Union Road (to be completed by 2019-20)</b>                      |  |
| Road (km)   | 33818<br>(100%)                                      |
| Bridge/Culvert (m)  | 125267<br>(100%)                                     |
| <b>Village Road (to be completed by 2024-25)</b>                    |  |
| Bridge/Culvert (m)  | 216957<br>(100%)                                     |
| <b>Growth Centre (no.)</b><br>(to be completed by 2009-10)          | 1041<br>(100%)                                       |
| <b>Rural Market (no.)</b><br>(to be completed by 2024-25)           | 14307<br>(100%)                                      |
| <b>Union Parishad Complex (no.)</b><br>(to be completed by 2009-10) | 2979<br>(100%)                                       |

### 9.2.3 Improving Railways

#### Long-term Vision and Objectives

An efficient and improved railway system can play important role to achieve the Vision 2021. The vision of Bangladesh Railways (BR) is to sustain its growth momentum to contribute to the development effort of the country along with its continued help to poverty reduction. As always, the first priority is to secure what railway already has and to improve its service quality and performance. BR has vision to provide safe, reliable, effective and efficient rail transport service in the country as well as to foster International rail links to serve regional/sub-regional connectivity and Trans Asian Railway. BR has also vision to expand and improve railway system to provide safer, better and less

expensive transport facilities to the national and international traffic to increase its market share. BR has vision to establish e-governance, introduce modern technology such as Metro rail, Electric train, circular rail line to provide better service to contribute transforming into digital Bangladesh. Railway has a big role to play in mass transportation of goods and passengers and poverty reduction in the future. As the government runs it, it can look after the interest of the low-income people by moving them and their goods at low rates.

### **Goals and Objectives:**

BR's objectives are to-

- (i) BR's goal in the OPP period is to expand and improve railway system to provide safer, better, environment friendly & less expensive transport facilities to the national and international traffic to increase its market share.
- (ii) Rehabilitate, upgrade/improve and replace old and obsolete assets to improve service quality and to built the image of railway as a safe and reliable means of transport;
- (iii) Augmentation of line capacity along selected corridors, acquiring modern locomotives, coaches & wagons to improve performance;
- (iv) Increase its market share in freight transport, in container transport between Dhaka-Chittagong Port and in passenger transport;
- (v) Organizational reform of BR along with introduction of modern financial management system, improved maintenance & operational system and human resource development;
- (vi) Establishment of Trans Asian Railway and Regional railway connectivity;
- (vii) Establishment of Chittagong- Cox's Bazaar Rail route;
- (viii) Introduce modern technology such as metro rail (underground rail), mono rail (sky rail), electric traction, etc.;
- (ix) Reduce road traffic congestion in Dhaka city.

### **Strategies to Revamp BR**

The following strategies/policies are proposed to revamp Bangladesh Railway and make it a popular mode of travel again.

- The transport sector received an allocation of only 2.26 percent of GDP in fiscal year 2000-01 (Carlson 2004). This is quite low from the viewpoints of allocations for transport in other similar countries and general poor condition of transport infrastructure. The percentage need to be raised to 3-4 of GDP and allocation for railways as well as waterways should be increased
- Priority to Railways vis-à-vis other modes of transport in view of past low priority to BR should be given
- The facilities at all railway workshops should be improved so that locomotive repairing and overhauling can be carried out efficiently, and rolling stock can resume service quickly.
- It is not possible to produce skilled staff (such as mechanics and loco master) in a short time. Bangladesh Railway should aim for having adequate number of skilled personnel in all the departments by 2021. The recruitment process and training programmes should be consistent

with this aim. The Railway Training Academy at Chittagong should have skilled instructors and facilities to run useful training programmes for the staff.

- By 2021, all the routes should have dual gauge so that meter and broad gauge trains can run from East and West Zones and vice versa comfortably.
- BR should identify its main corridors for both passenger and goods travel and take steps to connect the origin and destination by shortest possible routes. For example, by 2021, the Dhaka-Laksham chord line should be complete to reduce the Chittagong-Dhaka route length by about 60 kilometres and travel-time by one hour.
- To reduce ticketless travel, and improve onboard service, the responsibilities of these services can be leased out to the private sector on more routes.
- To accommodate the demand of different classes of passengers, there should be different categories of coaches in an intercity service. Timely running of trains should be emphasised for attracting passengers.

**Targets:** Specific activities have been targeted to be accomplished during the OPP period as shown in table 9.2.

**Table 9.2 BR's Targets for OPP**

| <b>Activities</b>  | <b>2015</b>   | <b>2021</b>                              |
|--|---|--|
| Undertake Construction of new rail line or re-opening of closed rail line along with other infrastructures to expand railway network                                 | 931 km  | 120 km                                   |
| Undertake double tracking of track and bridges   | 213 km and 2 bridges                                      | 267km and 2 bridges                      |
| Undertake rehabilitation/ up gradation of existing rail line   | 1402 km   | 1000km                                   |
| Undertake remodelling stations & construction of new stations, improvement of level crossing gates, construction of one ICD and improvement of other infrastructures | 5 stations, 824 level crossing gates, 1 ICD at Dhirasram. | 10 stations, 1500no level crossing gates |
| Undertake procurement of new DE locomotives  | 186(146 MG & 40 BG)                                       | 75 (30 MG & 45 BG)                       |
| Undertake rehabilitation of DE locomotives to enhance availability & performance of locomotives and to ensure reliability & punctuality of running trains            | 143 nos.  | 120 nos                                  |
| Undertake procurement of passenger coaches   | 450 nos.(300 MG & 150 BG)                                 | 450 nos.(300 MG & 300 BG)                |
| Undertake rehabilitation of passenger coaches  | 560 nos. (400 MG & 160 BG)                                | 600 nos. (300 MG & 300 BG)               |
| Undertake procurement of wagons and improvement of wagons  | 1403 nos. & 377nos  | 2000 & 1500                              |
| Undertake modernization of signalling system of stations to ensure safety.   | 113 stations  | 30 stations                              |
| Undertake line capacity incensement and procurement and procurement of new DEMUs to reduce road traffic congestion and other mass rapid transport system in Dhaka.   | 74 km and 20 nos. DEMU/DHMUs                              | 320 km and 32 nos. DEMU/DHMUs            |
| Organizational Reform of BR  | Reorganization following LOB Principle                    |  |



## **Current and future challenges for the sector/sub-sector**

Due to deplorable condition of track and bridges speed restrictions have to be imposed to ensure safety of running trains resulting excess running time and excess operational expenses. Almost 74 per cent of the locomotives and 28 per cent of passenger coaches are beyond their economic life resulting downgrading of reliability and service quality of rolling stocks and need immediate replacement 70 per cent signalling system has become old aged and obsolete and need modernization/up gradation to ensure safety of running trains. BR is also suffering from shortage of skilled maintenance staff. All these result in serious deterioration of the performance of BR. This has contributed to rail service losing its competitive edge over bus service.

.Government has embarked to establish regional railway connectivity and Trans Asian Railway (TAR) connectivity. Trans Asian Railway network's implications will be unlimited in the socio-economic sector of Bangladesh. Trade and Tourism sector of Bangladesh will increase tremendously by the impact of TAR. Increased Economic activities will reduce poverty through huge employment generation and provide sustainable socio-economic development to the country.

In order to create opportunities for bringing in efficiency as well as to attract more private sector involvement in railway, there is a strong argument in favour of separating infrastructure from operation, in the light of the National Land Transport Policy (NLTP) and the Integrated Multi-modal Transport Policy (IMTP). Infrastructure separation means that the operations of transport services work at arm's length from the provider of the fixed facilities. The full involvement of private sector in railway operation is necessary to improve the services and to reduce the budgetary burden of the government.

### **9.2.4 Improving Inland Waterways**

There is a potential for the Inland Water Transport (IWT) to play a big role for the movement of the people and freight. Unfortunately, that has not been the case because, like railway, IWT has been neglected for many years. That is why there has been no growth in the amount of cargo carried by IWT in more than a decade, while passenger travel by river mode has decreased by 1.3 percent per annum in the same period, despite a growth of seven percent for total transport demand (The World Bank 2007). Bangladesh's *National Strategy for Accelerated Poverty Reduction* underscored the need to improve the access to services and provide cheaper modes of transport. If properly nurtured, IWT could have contributed to both of these aspects. Nevertheless, about one-eighth of the rural population has access to the transport system only through IWT. This mode compares favourably with road transport with regard to accessibility when the length of network is considered, as only 37 percent of the rural population live within two kilometres of an all-weather road, though the road network is 274,000 kilometres long compared to only 24,000 for waterways.

### **Objectives of IWT**

- To improve the channel of the existing waterways through dredging
- To improve day and night navigation of water crafts by providing navigational aids
- To develop inland container river port for transportation of containers by waterways to/from two sea-ports and one deep sea port (at Sonadia)
- To develop river port handling facilities as well as storage facilities and introduce mechanical equipment for handling cargo in order to save waiting time for berthing of vessels

- To develop rural launch landing stations by providing pontoon facilities for smooth embarkation/disembarkation of passenger and loading/unloading of cargo etc.
- To improve its capacities to render service to traveler and freight transportation;
- To introduce digitization systems in preparing hydrographic chart, pilotage services and traffic management.

### **Strategies and policies:**

The following strategies/policies are proposed to improve the IWT sector and increase its modal share for carrying passengers and goods.

- To ensure that waterways can be used throughout the year, steps should be taken to increase all-season routes from the present length of 3,600 kilometres. This length should be doubled by 2021 through dredging by IWTA and the existing private sector.
- To reduce the number of accidents and create positive image for the potential users, safety regulations should be properly enforced. This will require increase and development of human resources. By 2021, the number of major accidents should be drastically reduced and number of fatalities should be made zero.
- The country boat sector should be decentralised and country boat owners should be more involved in decision-making process so that investment matches the local needs.

### **Strategies**

The following strategies will be undertaken:

- a) Intensification of the dredging program including procurement of dredgers to develop existing channel conditions of inland waterways and provision of navigational aids for smooth navigation of water crafts
- b) Establishment of inland container river port on priority basis
- c) Priority will be given for upgrading port facilities (both cargo & passenger) as well as storage facilities so that vessels can be loaded/unloaded without daily and mechanical equipment will be introduced for handling of cargo at river ports to avoid the head-load system;
- d) Implementation of the development projects of rural launch landing station
- e) Implementation of projects for improving the traditional country boat sector
- f) Undertaking feasibility studies for providing landing facilities in the coastal areas

### **The main objectives of the Port Authority include:**

- Maintain and improve the navigational channel through capital dredging and regular maintenance dredging;
- Develop efficient inland distribution of container traffic by road, rail and inland water transport to relieve the congestion problems being experienced by the Chittagong Port as well reduce high dwell time of container in the port.

- Increase container capacity through expansion of terminal/yard facilities, acquisition of modern container handling equipment and procurement of harbour crafts and vessels to ensure improved operation system.
- Decongest the port there is an urgent need to setup ICDs/CFS by the Public/Private sector at all potential cargo distribution centres across the country.
- Involve private sector participation in port management and port development infrastructure on BOO/BOT/PPP model for which a clear, transparent policy guidelines is to be approved by the Govt.
- Improve institutional capability for training, planning, safety and environmental control in the port.

## Challenges to IWT

**Lack of Navigability:** Due to massive siltation, the riverbeds are filled up, causing navigability problems for the vessels (BIWTA 2008). Inadequate number of dredgers, and that too quite old ones, is hindering BIWTA's effort to ensure navigability of waterways. The strength of dredger fleet of IWT and BWDB and the private sector needs to be rationalized.

**Launch Accidents:** Based on the data for 15 years, on average 148 people were killed in a year in accidents on waterways as opposed to 2,400 people on roadways. When the figures are converted to fatalities per billion of passenger-km, it becomes 158 for roads and 41 for waterways. Nevertheless, scope exists for reduction of launch accidents.

**Low IWT Tariff:** The tariff for carrying goods by IWT is cheapest among all the transport modes. It costs Taka 1 per ton-km on waterways, Taka 2.5 on railways and Taka 4.5 on roadways. IWT is also an environment-friendly mode, at least compared to road transport, as opting for IWT over road transport could save up to 58.5 litres of diesel and 155,000 tons of CO<sub>2</sub> per year owing to lower diesel consumption.

**IWT Major Component of Transport:** More than 50 percent of total land area of Bangladesh lies within 10 kilometres of a navigable waterway (The World Bank 1996). This sector including country boats is environment and employment friendly and needs to be patronized with suitable incentives

### 9.2.5 Air Transport

For a few types of trips, particularly for international trips there is no alternative to air transport. Air cargo service can assist in quick transport of exportable perishable goods, such as fresh vegetables and frozen shrimps. It can be a vehicle for international and national tourism.

#### Targets

- Second runway in Hazrat Shahjalal International Airport for cargo planes
- Second International Airport near Dhaka
- Greater accessibility of foreign carriers
- Biman, the national airways, may be made fully autonomous by 2015

## Strategies and policies proposed for the improvement of air transport

- A detailed research should be conducted on air transport in the next five years giving importance to aspects, such as, limitations of aviation infrastructure and problems and prospects of development airline industry in Bangladesh.
- In order to stay competitive, Bangladesh needs to upgrade its facilities and air security measures to an optimum level following the development around the world.
- Many of the buildings near the international airport have violated the height limits, creating an unsafe situation for the aircraft. In the short term, these buildings should be identified and in the medium to long-run actions should be taken to bring them within the height limits.
- Second runway could be added to Hazrat Shahjalal International Airport mainly to accommodate cargo planes.
- It is foreseen that the airports at Bangkok and Singapore are likely to run out of capacity due to increased air traffic in the future (The World Bank 1998). Bangladesh can take advantage of this situation by constructing a new state-of-the-art airport in Dhaka, possibly at Trishal/Shakhipur.
- The private sector can be encouraged to take lease of some unused airports, such as, Shamsernagar and Thakurgaon, for operation and maintenance.
- The privatisation process of airlines has brought about positive results so far. This trend should be continued up to 2021 and beyond.

### 9.2.6 Rural Transport

Vast majority of the people (about 75 per cent) still lives in rural areas. Agriculture contributes a significant part of GDP. Therefore, it is necessary to pay attention to the economic activities of the rural people and how they can be supported through rural transport infrastructure. Most of the rural people are engaged in the agricultural industry. In fact, even if the whole country is considered, 48 percent of the labour force is engaged in agricultural activities. The physical infrastructures, which are exceedingly important for rural development, include roads, waterways, markets, electricity and mobile phones.

Rural markets are important for the farmers and their proper functioning depends on the transport infrastructure, which serves them. The farmers sell their products in the markets and earn their livelihood. Considerable amount of non-farm trading also takes place in these markets.

**Rural roads:** roads or waterways or both either serve Most of these markets and growth centres. Upazila Roads (former Feeder Road Type B) connect growth centres to the RHD road network or to the Upazila headquarters or one growth centre with another one, while the Union Roads connect union headquarters with the Upazilla headquarters or local markets with each other and Village Roads connect villages and farms to local markets/union headquarters. All these types of roads along with waterways are important for the efficient functioning of all types of rural markets. It is no use improving the internal facilities of the markets, such as providing sheds and paved surface, unless access to them are improved.

**Rural Waterways:** Waterway is also an important mode for the rural people. Quite an extensive waterway network plays an important role in the life and business of the rural people. More than 50 percent of country's land area is within on average 10 kilometres of a navigable waterway.

Since the 1980s, there has been a trend to attach diesel engines, mainly imported for irrigation purposes, to country boats, turning them into mechanized boats. About 80 percent of the boats have now become mechanised. This process has made the boats reliable, faster and competitive with other modes. Despite its potentials, the waterway has got its share of problems as well. The boats lack adequate berthing facilities, especially at riverside markets. There is problem due to siltation, resulting in lack of navigability. The movement of the boats is also hampered as in some places, especially under the bridges constructed by the Roads and Highways Department (RHD).

The roadways and waterways are both very important for supporting the economic and social activities of the rural people. These two modes could be integrated and made to complement each other.

### **9.2.7 Transport Scenario in Dhaka**

The transportation system of Dhaka can hardly cope with the demand of the increasing population. The transportation scenario in Dhaka is characterized by congestion, high level of pollution, accidents and high user costs. The increase in the number of inefficient modes, such as, cars in recent years, has exacerbated the situation. The number of private cars has increased from 87,866 in 2003 to 1,15,880 in 2007 (Bangladesh Road Transport Authority 2008). Other reasons responsible for the congestion include improper or lack of land-use planning, on-street parking, mix of different types of modes on the same street, and defying of traffic rules by the road users. For example, the suburb of Dhanmondi was established for residential purpose only. Therefore, the internal roads were developed mainly to give access to residential plots and transfer traffic to a higher order road. However, over the years land-use changes occurred in Dhanmondi, as residential uses were converted to educational, commercial and institutional uses. Many schools, colleges, and universities, as well as hospitals, clinics and shopping centres have been established in Dhanmondi in the last two decades. Therefore, the roads that were planned to give access only are carrying huge volume of traffic. It is creating congestion not only inside Dhanmondi, but the impact is distributed in the surrounding road network as well.

Dhaka roads have hardly the number of lanes required to accommodate the traffic on them. In this situation, if one or two lanes are used for parked vehicles, the traffic jam becomes worse. Unlike most of the mega-cities, a number of modes ply on the same road in Dhaka. These modes have different operational characteristics, which make them incompatible with one another. For example, still in some streets, rickshaws and motorised vehicles use the same right-of-way. This reduces the running speed of the vehicles. Road users, such as car, bus and Compressed Natural Gas (CNG) baby taxi drivers, as well as the pedestrians hardly follow the traffic rules and show little respect to other road users. Recent earmarking of different lanes to different types of vehicles is showing some improvement in terms of traffic congestion.

A Strategic Transport Plan (STP) has been prepared recently for planning the transport system of Dhaka City (The Louis Berger Group and Ltd. December 2005). The STP has proposed a number of short, medium and long-term measures to cope with the traffic problems in Dhaka. A number of measures have already been taken, such as construction of new links of people have pinned down quite a hope on the construction of elevated expressway and metro rail are under consideration.

Without these drastic measures, the burgeoning congestion on the Dhaka roads could not be mitigated.

An effective interfacing is required for integrating the modes, so that riders can transfer from one mode to another without much trouble and loss of time. There are different types of modes available in Dhaka to have a balanced and integrated system.

## **Targets**

- Overhead mono rail system
- Elevated express way
- Circular water ways around Dhaka city
- Improved road safety and reduced traffic congestion

## **Strategies/policies to improve the traffic scenario of Dhaka**

- In the short term, attention should be given to traffic management measures in order to optimise the available road capacity. The traffic management measures may include one-way operation, restriction on a particular mode on a street or in an area, and parking restrictions.
- To have a balanced and integrated transport system, rickshaws should not be totally banned, but their use should be limited. They should be registered by Dhaka City Corporation, and licence can be issued to them to operate in a particular area.
- It is thought that increasing the roadway capacity, for example, by constructing expressways is not going to bring any long term solution. This is because the improved roads will push up the demand and ultimately the excess capacity will be exhausted. Therefore, travel demand management measures are proposed in the short and medium terms. Examples of travel demand management include introducing a school bus system and encouraging car-pooling.
- The behaviour of the road users is unlikely to change if not enforced. Therefore, adequate number of traffic personnel should be recruited and trained. So far, expenditure on improving the signalling system has not brought enough benefits.
- The increase in the number of buses on the streets of Dhaka is a good sign, as they are an efficient mode in terms of space requirement per passenger. Attractive Bus Rapid Transit (BRT) system should be introduced in the medium term.
- A mega-city like Dhaka could possibly explore the possibilities of a metro-rail system to move a large number of people in a quick time through the main transport corridors. Examples include Kolkata and New Delhi.

### **9.2.8 Multi-modal Transport**

Multi-modal transport has the potential to reduce transport expenditure and time. The modes should be integrated for this purpose and the communication system should be improved to facilitate tracing the vehicles and sharing of information among different stakeholders, such as, importers/exporters, shippers, port authority and shippers. ICT, i.e. computerized connectivity will improve the communication among them and adoption of Digital Bangladesh policy will help the cause. The transport corridors of the country, especially the Dhaka-Chittagong Highway, should be upgraded to facilitate the movement of container lorries. In the long term, another ICD should be constructed in the periphery of Dhaka. This ICD can assist in distributing freight to all parts of the country and be the focal point for multi-modal transport. ICD should be constructed at major river and road joints. With the current status of transport in Bangladesh, multi-modal transport enjoys high

priority. With tickets bought in Dhaka one could travel India, Sri-Lanka, Maldives and Pakistan. Transshipment of goods over a long distance internationally will take place automatically.

### 9.3 Telecommunication

#### Introduction

The telecommunication sector has progressed significantly with the involvement of the private sector in the provision of mobile phones in the early 1990s. And yet the teledensity is quite low compared to neighbouring countries. The rural connectivity of some of the operators are still low.

**Table 9.3: Comparative Position of Countries with Land and Mobile Telephones (2007):**

|            | Fixed line | Mobile subscribers |
|------------|------------|--------------------|
| Bangladesh | 1%         | 22%                |
| India      | 4%         | 21%                |
| Pakistan   | 3%         | 39%                |
| Sri Lanka  | 14%        | 40%                |
| Thailand   | 11%        | 124%               |
| Indonesia  | 8%         | 36%                |
| China      | 28%        | 42%                |
| UK         | 55%        | 118%               |
| USA        | 54%        | 85%                |
| Germany    | 65%        | 118%               |

*Source:* World Development Indicators 2009

The monopoly of the single mobile-phone operator was broken when license was given to more operators including Grameenphone in the late 90s. The handset price, connection fee, and airtime cost have come down to an affordable limit now. The situation changed drastically with mobile phone converting into a vital communication device for the village traders and rickshaw-pullers from the status icon of the elite class of the society. It has played a big role in poverty reduction. The supermarkets in Dhaka can order their agricultural and other products before their stock run out and the producers of these consumable products can get a better price as they can sell their products directly to the end market without having to deal with the intermediary traders. The villagers can now communicate directly with their family members working overseas and plan out when and how remittance can be received. New employment has been created by the selling of scratch cards for topping up balance on mobile phones and transferring balance from the bulk accounts to individual subscribers or through payment of bills through Cell phone agents.

The average tariff of mobile phones has gone down from Taka 11.37 per minute in December 2001 to Taka 0.88 in June 2008 (Hasan 2009). Many believe costs and prices could be significantly reduced as per the experience of India and China. The oligopolistic market structure of the mobile phone industry is marked by over advertisement.

Private operators have started to get involved not only in mobile phones, but also land phones, removing BTTBs monopoly in the business.

The quality and coverage of Internet have also improved over the years. Bangladesh is connected with the rest of the world through submarine cables owned by Submarine Cable Co. and Very Small Aperture Terminals (VSAT). In the initial years, Internet service was provided only through dial-up accounts. A second submarine will be made operational by 2015. These days they are mostly being replaced by the fibre-optic broadband connections, increasing the browsing speed many times. As more and more Internet Service Providers (ISP) get involved in the business, the connection charge and monthly fees are coming down. Still, it is beyond the affordable limit of most people. People in need of Internet service on an irregular basis, have the option to go to Cyber Cafes. These cafes have opened the door for new business opportunities and created employment opportunities for some people. Internet has not only opened the gateway to huge volume of information all the around the world, it has given new dimension to speedy communication through electronic mails or e-mails. The information technology is upgraded with time and an initiative has been taken to introduce Worldwide Interoperability for Microwave Access (WiMax) technology in the country soon. Already licenses have been issued by BTRC in this regard.

#### **9.4 The Print and the Digital Media**

Like the telecommunication sector, the digital and print media have also advanced in the past few years. After independence, Bangladesh Betar was the only radio service and Bangladesh Television was the only television channel. People hardly had any access to unbiased information. The situation has changed for better since the introduction of private television channels. Due to competition in the once monopolised industry, the quality of programmes has generally improved, with the news being the primary one. Television reporting has assumed standards close to international channels. The choices for entertainment programmes have also increased. However, absence of TV advertisement policy is apt to make some thoughtful people uneasy.

The show business has grown so big that media personnel can take it as a profession, a far cry from the days when it was their hobby. All the channels except for Bangladesh Television are broadcast through cable television network, implying that only those having access to cable television are able to watch them.

Radio is still a common device for the rural people. As radios are cheap and do not require electricity for running, rural people usually can avail the opportunity to listen to the radio. Programmes, such as, information on cultivation can benefit the farmers, and cyclone warning can help the fisherman as well as the residents of coastal areas. Radio again started to become popular among the urban people, especially the young generation, with the introduction of FM channels since the middle of this decade. The young people even do not have to carry a radio as they usually have FM radio as a standard feature of their mobile phone. The advent of FM radio channels has created part-time employment opportunities for the students, mostly as radio jockeys.

The print media has also come a long way. There are many Bengali and English dailies published now. Reader around the glob now has access to Internet versions of the newspapers. People have wider choices and access to biased as well unbiased news. Most of them have an electronic version, available free on the web. Therefore, Bangladesh nationals living abroad can be updated on the news in Bangladesh. In addition to the dailies, there are many magazines specialising on specific areas, such as, sports, show business, crime report, and education.



### **Strategies/policies proposed for the digital and print media**

- A few of the present cable television channels can be given permission for terrestrial broadcast, so that more people can watch them.
- In the short term, the government may act conservatively in giving permission to new channels, as already there are many channels and a limited number of quality production houses and advertisement trade to support these channels. The quality of programmes may suffer with bounteous licences in a limited market.
- For each channel, there should be some broadcast-time slots reserved for non-commercial educational programmes. These programmes should target the rural people as well as the students. They should also create awareness for different issues among the people.
- The government should encourage the establishment of FM Radio news channels, besides the entertainment channels.
- Digital and print media would do well to keep close liaison with ICT discussed in Chapter 12.

## **9.5 Postal Service**

In the era of electronic communication, postal service may appear to be outdated. However, a few aspects of postal service make it hard to replace. For example, digital documents are still not recognised for legal purposes in most parts of the world. For the delivery of documents there is hardly any substitute for postal service. People in the rural areas do not have access to Internet and have to depend on postal service. Hand written letters are still considered to possess a personal touch, which the type-written emails lack.

Bangladesh Post Office offers a range of postal services that includes, Express Mail Service (EMS), which offers to provide speedy and accurate mail service. It introduced an electronic mail service in the name of E-Post in 2012. It basically provides Internet and e-mail services. The Post Office also offers tracking of mails via the Internet on a limited scale. The recent introduction of Post Office vans is big steps to reach the people instead of having the people reach them. EMS and e-post services will be expanded including rural areas.

### **Strategies and policies proposed for the improvement of the postal service**

More urban areas should be brought under the Guaranteed Express Post (GEP) for inland express mail service. Express Mail Service links should be established with more countries, and by 2021 most countries of the world should be brought under this network. The EMS service should be accompanied by a guarantee to deliver the mail within a specific period.

Bangladesh Post Office has more post offices in rural areas than urban. While the number of urban post offices has remained the same from 1994-95 to 1998-99, the number of rural post office has grown by 7 percent in the same period (Bangladesh Post Office 2021). The need for postal service is likely to reduce in the long term unless postal department can incorporate use of ICT.

## Chapter 10

### ENVIRONMENTALLY SUSTAINABLE DEVELOPMENT

Environmental and natural resources give rise to several concerns depending on its economic functions, life-support or environmental balancing, environmental pollution, extreme natural events and amenity support. There is the issue of environmental pollution which arises due to release of waste products into the natural systems of air, water, land and the like which may severely compromise the systems capacity to assimilate them quickly to regain natural equilibrium. Climate change is one of the major second round effects of such failure of the atmosphere to assimilate carbon di-oxide and other gases due to various human activities. Environmental pollution caused by improper or inadequate solid waste management or treatment of industrial effluent is a major cause of concern particularly in and around cities.

#### 10.1 Objectives

Environment and climate change policies will revolve round adaptation strategies and mitigation measures as to environmental and climate changes in the following areas:

- *Coastal Zone*
- *Managed Retreat.*
- *Selective Accommodation.*
- *Protection-cum-accretion Promotion.*
- *Water Resources Response*
- *Responses in Agriculture*
- *Forest Ecosystem Responses*
- *Human Health Response*
- *Increase drought ,flood and cyclone response*

**Bangladesh Climate Change Strategy and Action Plan 2009** has the following objectives and targets to face the climate hazards to the endangered people:

- *To support the endangered people with food, shelter, safe drinking water and health services*
- *To plan enough rehabilitation for internal and expatriate refugees*
- *To help the UN in formulating policy frame work for the above climate refugees and other affected persons*
- *To draw attention and cooperation of the international community to the island states and others whose coastal areas are adversely affected*
- *To safeguard the interest of the climate change vulnerable groups effective measures to be taken to combat climate changes*

#### 10.2 Key Environmental Concerns and Strategies

**Floods:** Flooding in Bangladesh is almost an annual phenomenon, and this recurrent natural hazard causing enormous losses of crops and infrastructure is now a major issue in environmental management. Normal inundation during the rainy season is often credited with contributing to soil

fertility through silt deposition. However, flooding above normal levels causing loss of life, crops and property has impelled policy makers to plan for sustainable flood management.

**Strategies:** Strategic thinking on flood protection started in the 1960s; however, after several planning experiments, the current focus is on a mix of structural and non-structural measures to manage floods under an umbrella plan of integrated water resources management. Structural measures include embankments, drainage and channel improvement, and river training works. Non-structural measures include flood forecasting and warning, flood proofing, flood preparedness and response, and flood plain zoning. In the event of increased vulnerability to floods from climate change impacts, both types of measures – especially the construction of new embankments and strengthening of flood forecasting capability through enhanced regional cooperation in data sharing with India, Nepal and China – will require greater emphasis.

**Tropical Cyclones:** The coastal zone of Bangladesh is hit by tropical cyclones, accompanied by storm surges, almost every year in the pre-monsoon months of April-May and the post-monsoon months of October-November. The maximum devastation occurs in the greater districts of Khulna, Barisal, Patuakhali, Noakhali and Chittagong, and the offshore islands. In the most severe tropical cyclones, the surface wind velocity may exceed 250 km/hour. The cyclones hit the coastline with strong winds and torrential rain, causing both losses of life and property. The devastating consequences from the cyclones are largely due to storm surges (often more than 10 meters in height) and resultant floods.

**Strategies:** Availability of access to global early warning systems through satellite technology enables Bangladesh in its cyclone preparedness programme, and thus reduces or minimizes damage and loss of life.

**Drought:** Drought is characterized by less-than-normal rainfall for a prolonged period, causing marked hydrological imbalance. It leads to parching of the ground and withering of vegetation. While Bangladesh is free from annual aridity, parts of the country in the western-north-western zone, with a mean annual rainfall of less than 1,600 mm, are considered drought-prone. Inadequate pre-monsoon showers, a delay in the onset of the rainy season or an early departure of the monsoon may create drought conditions and adversely affect crop output. Drought acts as a catalyst of land degradation through reduced soil moisture content and overexploitation of sparse vegetation, and thus demonstrates early symptoms of desertification.

**Strategies:** Although Bangladesh is a signatory to the UN Convention to Combat Desertification, a comprehensive drought management policy is absent. Such policies and strategies are essential for outlining programmes for drought preparedness, early warning systems and drought relief measures.

**Water Supply:** Water is generally considered a renewable resource, yet its supply is finite. The surface water resources in Bangladesh are largely obtained from the country's dense network of river systems, which include a combination of upstream inflows and runoff generated from rainfall within the country. Although there is a common perception that Bangladesh is richly endowed with water resources, the seasonality of water availability causes water stress in the dry season (November to May), even scarcity in certain parts of the country. Almost 80 to 85 percent of this water availability is concentrated in the five-month monsoon period of June to October. The dry season rainfall is sporadic, irregular and variable. Not only that the river flows diminish in the dry season, groundwater – a major source of irrigation in Bangladesh feels the stress owing to the lowering of the

water table. Groundwater is an important component of water supply in Bangladesh, especially for domestic and irrigation requirements. The quaternary alluvium of Bangladesh constitutes a large aquifer with good transmission and storage properties, which is annually replenished through recharge from rainfall and flooding. However, the detection of arsenic in groundwater in parts of Bangladesh since 1993 has completely altered the dimension of groundwater utilization in the country.

The water supply requirements in the urban sector also pose a formidable challenge in Bangladesh. While over 90 percent of the urban population has access to improved water source, the rate of increase in supply is unlikely to keep pace with the rate of urban growth.

Salinity management is another major problem in the water sector of Bangladesh. The southwestern coastal zone is extremely vulnerable to saline ingress from daily tides, which affect both surface and groundwater. The problem is very severe in the dry season when the stream flow diminishes. Discharge from upstream sources is the most crucial factor determining the magnitude of salinity in the southwest, and since the upstream diversion of water in the Ganges diminished the flushing capacity of the hydrological system in the Ganges Dependent Area (GDA), its environmental balance has been adversely affected. There is strong probability that salinity problem in the southwest could get very serious with sea level rise due to global warming and climate change.

**Strategies:** Long-term flood control and water management programmes are in order. Padma Barrage near Pangsas is thought to be a device that could mitigate the water problem. Urban water supply need to be planned and executed in due time.

**Deforestation:** Cutting down of trees has become an endemic phenomenon in Bangladesh. From a canopy cover of 24 percent in 1947, the figure has now come down to less than seven percent. The principal causes of deforestation are: (a) farm encroachment, (b) logging for timber (most often illegally), and (c) fuel wood collection.

**Strategies:** In consequence to the awareness for current biodiversity conservation, the government has declared certain areas as 'Protected Areas' in various parts of the country. Illegal felling of trees shall have to be combated.

**Pollution:** The magnitude of *water and air pollution* has become an issue of serious concern in Bangladesh in recent years. The Environment Conservation Act (ECA) of 1995 and the Environment Conservation Rules (ECR) of 1997 have addressed the water and air pollution mitigation issues, although enforcement so far has been less than satisfactory. Water pollution has three major sources: industrial effluents, agrochemicals, and urban sewage. The Department of Environment (DOE) has the responsibility for water quality monitoring. Another contributing factor for the deterioration of water quality is untreated domestic sewage, including faecal pollution. The problem is certainly going to increase in future with increasing urbanization, and due to the concomitant lack of any sound waste disposal capacity and facility.

The more serious problem in urban areas, however, is air pollution. Ambient air quality depends on several factors; the more important ones are automobile and industrial emissions. In rural areas, the principal polluting agents are the brick fields.

Exposure to air pollution is a major health hazard, including severe respiratory disorders. Some success has, however, been achieved in improving the urban air quality through banning of

two-stroke engine fleet of auto rickshaws in Dhaka, and conversion to unleaded gasoline or compressed natural gas (CNG) engines in automobiles.

**Strategies:** The Department of Environment (DOE) has prepared guidelines and standards for the polluting industries and is also engaged in air quality improvement exercise with assistance from the World Bank. Strict adherence to the measures shall have to be ensured.

**Arsenic contamination:** Bangladesh is affected by one of the worst cases of arsenic groundwater contamination in the world. Since 1993, arsenic has been detected in tube wells, and has shattered the notion that tube well water is safe. Empirical evidence suggests that it takes years of exposure to arsenic contaminated water to develop symptoms of arsenicosis.

**Strategies:** The urgent need at present is a comprehensive arsenic mitigation program with a view to providing safe water to worst affected areas. Mitigation options include treatment of arsenic contaminated water, develop arsenic-free groundwater sources, and increase the use of surface water sources. Deep aquifers appear to offer a long-term source of arsenic-free and safe drinking water. With rural electrification the scope of distribution of deep tube well water through pipes in the village may hold some promise.

### **10.3 Climate Change and Global warming**

Bangladesh is one of the most vulnerable countries in the world to climate change impacts. The Intergovernmental Panel on Climate Change (IPCC), in its Fourth Assessment Report (2007), presents an up to date report of findings based on advanced modelling studies involving hundreds of experts in drafting, reviewing and finalizing the assessment. It predicts that global temperature will rise between 1.8 °C and 4.0 °C by the end of this century. For South Asia, the IPCC Report also predicts that monsoon rainfall will increase, resulting into higher flows in the Himalayan rivers flowing through and into Bangladesh, India, Nepal and Bhutan. These flows – in the medium term – are also likely augmented due to increased melting of the Himalayan glaciers due to warmer temperatures. The IPCC also makes a forecast that globally sea level will rise between 18 and 79 cm, which could cause coastal flooding and submergence as well as saline intrusion in the southern parts of the country. Moreover, rainfall is expected to be both higher and erratic throughout the whole country, along with an increase in the intensity and frequency of droughts in the North-Western parts of the country.

#### **Implications of Global Warming**

Sea level rise would result from the melting of ice sheets and glaciers, and from thermal expansion of oceanic water. Other sectors, which are also vulnerable to climate change, include water resources, agriculture and food security, tropical storms, salinity etc. The predictions from different models, however, vary in their impact levels and differ in the projected degree of warming, yet the general conclusion from all of them is that, with global warming. Bangladesh would get warmer and wetter along with a probable submergence of the coastal zone from sea level rise in the Bay of Bengal. The ‘best estimate’ scenario for the year 2030 is that monsoon rainfall could increase by 10 to 15 percent. The consequential impacts would be increased runoff, increased flooding and drainage congestion.

## 10.4 Climate Change Response Options

There are two broad categories of response options to meet the challenges of climate change; mitigation and adaptation. Mitigation refers to actions that would prevent or limit the emission of greenhouse gases (GHG). Adaptation, on the other hand, involves adjustments – passive, reactive or anticipatory - in practices, processes or structures that has the potential to substantially reduce adverse impacts of climate change and to enhance beneficial impacts. There are some climate change impacts for which adaptation is the only available and appropriate response.

The array of potential adaptive responses available for different vulnerable sectors is quite large, ranging from purely technological (sea defence structures), through behavioural (change in food choices), to managerial (altered cropping practices) and to policy measures (planning regulations). Bangladesh's per capita contribution to global emission of greenhouse gases is infinitesimal (0.2 metric tons). Hence, adaptation is considered here as the most widely considered response to climate change for Bangladesh.

## 10.5 Sectoral Adaptation Strategies

The challenges facing the different sectors which are vulnerable to environmental degradation and climate change impacts require to be addressed through different – often cross-sectoral – approaches and strategies. The government toward that end in the past has made several planning endeavours, aiming at mainstreaming environmental conservation and management in national planning, although some of the planning agenda were not in harmony with each other.

### *A. Coastal Zone Responses*

Sustainable methods to address the issues of the coastal zone are to follow the concept of Integrated Coastal Zone Management (ICZM), which seeks to strike a balance between economic welfare and environmental sustainability of the coastal region. In order to meet the problem of drainage congestion due to higher levels of water in the rivers and increased sedimentation, several types of structural interventions would be required. These physical adaptation measures could include increasing the drainage capacity of existing infrastructure (culverts, bridges, regulators etc.), constructing new regulators, planning for tidal basins, and pumped drainage systems. The response to the problem of salinization of soil and water due to saline water intrusion should focus upon a variety of approaches like resuscitation of the Gorai river (the principal distributaries of the Ganges), the construction of the proposed barrage on the Ganges at Pangsha, and promoting the research and use of salt tolerant species of rice for the long term.

A pragmatic approach to adapting to the erosion/accretion dynamics along the coastal region is a combination of measures like coastal afforestation (including planting mangrove greenbelts in the foreshore areas and along the coastal embankments), river training works, constructing cross dams to accelerate accretion, and providing for bank protection to the estuarine rivers. Coastal embankments and afforestation would also serve the additional purpose of modifying or mitigating the impacts of cyclones and storm surges.

The coastal zone management subgroup of the IPCC identified three categories of possible coastal response options, the specifics of which would, of course, vary among different coastal ecosystems. These options are:

- (a) **Retreating** from the coastline in order to relocate inland;

- (b) **Accommodating** with the altered environment (including submergence) through adjustments in livelihood pattern; and
- (c) **Protecting** the coastal land, its population clusters and natural resources by constructing hard structures.

#### ***Managed Retreat.***

- Regulatory measures to enforce the location of new developments at a designated minimum distance from the coastline;
- Financial incentives for the coastal population to help them relocate in inland growth centres and assist them to be absorbed in alternate occupations; and
- Phasing out non-essential development in the coastal zone and encourage out-migration through introducing disincentive fiscal measures.

#### ***Selective Accommodation***

- Continuation of habitation of less vulnerable coastal sections through making *in situ* changes and minor adjustments to sea level rise; and
- Introduction of livelihood and lifestyle changes like cultivating salt-tolerant crops, increasing practice of aquaculture, converting farmlands into fish ponds, elevating homesteads and other structures, enlarging the network of inland water transport etc.

#### ***Protection-cum-Accretion Promotion.***

- Continuation of the existing land use by providing protection to the coastline through the construction of hard structures in order to keep out the rising sea water;
- Construction and strengthening of coastal polders and embankments, especially around dense population clusters, urban centres, transport nodes and other important infrastructure; and
- Implementation of projects aimed at coastal erosion control as well as land accretion promotion in the estuarine area, including the construction of cross dams with a view to accelerating accretion process and land reclamation along the coastal zone.

**B. Water Resources Response:** The principal water resource related problem resulting from climate change in this century is the likelihood of increased runoff from higher precipitation in South Asia and the resultant greater magnitude of floods occurring in Bangladesh. Adaptation to increased flooding would require full flood protection embankments along the major and medium riverbanks. Since the country's population continues to grow resulting into huge pressure for settlements to extend into flood vulnerable zones, embankments are *sine qua non* for flood protection in Bangladesh.

Physical adaptations to channel morphological changes as well as drainage congestion would include structural protection measures against bank erosion, dredging of silted channels to enhance their conveyance capacity, installation of pumps for drainage, enhancing the capacity of drainage through more culverts in the road transport network, and continuous monitoring of the channel morphology.

In addition to the adaptation strategies against increased flooding, measures are also required to meet the insufficient supply of freshwater in the low flow season as well as an increased incidence

of droughts. Physical adaptation to this scenario could be to ensure a provision for storage through the construction of a barrage on the Ganges within the country.

Management is considered the best mechanism to deal with the issues of water supply and demand, and develop a strategy for sustainable management of water resources.

**C. Responses in Agriculture:** Potential adaptations in this sector should focus on such issues as increased irrigation efficiency, crop diversification, salinity in the coastal zone, access to credit and training facilities for the vulnerable communities along with overall institutional strengthening. Crop diversification including the introduction of new species would be required to adapt to such climate change impacts like frequent droughts, increased soil and water salinity, and increased duration and depth of floods. Adaptation to these changed conditions could be made possible through the development of drought resistant crops for drought prone areas in north-western Bangladesh, salt resistant rice varieties for the coastal zone, and faster maturing and less inundation sensitive crops for the flood prone areas.

**D. Forest Ecosystem Responses:** Climate change could severely impact the forestry sector through (a) saline intrusion into the Sundarban ecosystem, and (b) increased drought stress in the northwest causing loss of vegetative cover. This sector also has a low probability for anticipatory adaptation measures on a wider scale. Adaptation measures to protect the threatened forestry sector from impacts of climate change include general activities to protect ecosystems as a whole as well as activities directed toward protecting threatened species in particular. One of the measures to ensure the rejuvenation of the Gorai river is to excavate its off take point from the Ganges through regular dredging and a prioritized implementation of the proposed Ganges Barrage, which would, in addition to facilitating dry season irrigation, allow freshwater supply in the Sundarban.

Coastal afforestation, which has multipurpose uses, is a continuous program undertaken by the Forest Department in collaboration with the non-government organizations, and the strengthening of the process of expanding these coastal 'greenbelts' would be an effective adaptation strategy. It should be emphasized that adaptation strategies for the integrated ecosystem planning of the forestry sector must incorporate community based management so that the users' perceptions and local knowledge are fully utilized in adaptation practices.

**E. Human Health Response:** Climate change is likely to exacerbate the environmental risks to health in Bangladesh where health and nutrition status are not strong. Adaptation to such risks involves changes in institutions, technology and behaviour to reduce potential negative impacts or increase positive ones. The most important and cost-effective adaptation measure in Bangladesh would be to strengthen public health infrastructure and to focus on improving the health care system as well as training, surveillance and emergency response, and prevention and control programmes; and to sensitize people about improved sanitation practices to reduce the risks of water- and vector-borne diseases like diarrhoea, cholera, malaria and dengue.

**F. Increased Drought and Flood Response:** Adaptation measures to meet the challenge of increased drought incidence should include regular drought forecasting, increase in irrigation efficiency, reforestation of denuded/degraded areas, re-excavation of surface water ponds, introduction of drought tolerant crops, adoption of rainwater mechanism, and monitoring of groundwater usage in the drought prone region of north-western Bangladesh. Adaptation measures against urban flooding in Dhaka would include (a) extensive construction (and reclamation) of storm sewers along the main arterial city roads, (b) full flood protection embankment along the Balu river in the east in order to



protect the entire city from all sides, (c) develop and preserve the flood retention zones in eastern part of Dhaka for holding excess rain water, and (d) adequate pumped drainage facilities to allow the water from internal rainfall to be discharged into the surrounding rivers.

**G. Increased Cyclone Response:** The impact of global warming increasing & intensifying number of disaster like cyclones, floods & drought etc. which need to be addressed through proper mitigation measures like a. Awareness raising b. effective early warning c. building of new flood & cyclone shelter, cyclone resistant houses and DRR (Disaster Risk Reduction) activities d. Cyclone Shelter Management Information System (CYMIS) e. early warning message dissemination through cell broadcasting etc. Currently, there are nearly 2,000 cyclone shelters, which – during normal times – are used as schools or community centres. The cyclone shelters should be redesigned to offer safe accommodation for women, who are often reluctant to come to the shelters during the cyclone for lack of privacy. Coastal embankments and expansion of coastal greenbelts would also provide protection against strong winds, flooding and saline water incursion during cyclones.

### **10.5.1 Mainstreaming Environment and Climate Change in National Planning**

In its endeavour to mainstream environmental issues in national planning and development, and demonstrate its commitment to global environmental sustainability, Bangladesh has signed and ratified various environment-related international conventions, treaties and protocols. Bangladesh Climate Change Strategy and Action Plan (BCCSAP) 2008 will serve as the framework to combat climate change over the next 10 years.

The newly elected government has set up a secretariat on climate change under the Ministry of Environment and Forests to monitor the activities for combating climate change impacts and deal with the climate change fund. The government has also decided to form climate change cells in all ministries to monitor the activities to mitigate climate change impacts and suggest remedial programmes.

The capacity of the Planning Commission in mainstreaming environment and climate change issues in the medium and long term plans for the country will be further strengthened.

## **10.6 Disaster Management**

Climatic and environmental hazards often give rise to disasters. Disaster management has assumed an important concern for the government and the people.

Disaster management (or emergency management) is a discipline that deals with (i) preparing for disaster before it occurs, (ii) disaster response when it occurs (i.e. evacuation to cyclone shelters) and (iii) rebuilding society after natural or man-made disasters have occurred.

To be effective, disaster management involves in the process of its implementation all individuals, groups and communities to avoid and ameliorate the impact of disasters following hazards. The success of Disaster Management of Bangladesh widely hailed by the World community Cyclone Preparedness Programme (CPP) is a major success history of Bangladesh. Coastal afforestation, building up of cyclone & flood shelter, effective early warning system introduced by the CPP volunteers, introduction of Standing Orders on Disasters, effective search and rescue operation, risk reduction activities for all disasters, timely relief and rehabilitation activities are the major success.

## *Components of Disaster Management*

Disaster management is sometimes *called disaster risk reduction*. In this sense, disaster management has four processes, i.e.

### **Adaptation**

### **Preparedness**

### **Response and**

### **Recovery**

The action programmes in the country would incorporate all these sequential processes.

#### **(a) Adaptation**

**Adaptation** efforts attempt to prevent hazards from developing into disasters altogether, or to reduce the effects of disasters when they occur. The implementation of adaptation strategies can be considered a part of the recovery process if applied after a disaster occurs. Adaptation is the most cost-efficient method for reducing the impact of hazards; however it is not always suitable. Adaptation does include providing regulations regarding evacuation, sanctions against those who refuse to obey the regulations (such as mandatory evacuations), and communication of potential risks to the public.

#### **(b) Preparedness**

In the preparedness phase, emergency managers develop plans of action for when the disaster strikes. Common preparedness measures include:

- Communication plans with easily understandable terminology and methods.
- Proper maintenance and training of emergency services, including mass human resources such as community emergency response teams
- Development and exercise of emergency population warning methods combined with emergency shelters and evacuation plans
- Stockpiling, inventory, and maintain disaster supplies and equipment
- Develop organizations of trained volunteers among civilian populations. (Professional emergency workers are rapidly overwhelmed in mass emergencies so trained, organized, responsible volunteers are extremely valuable

#### **(c) Response**

The response phase includes the mobilization of the necessary emergency services and first responders in the disaster area. This is likely to include a first wave of core emergency services. Armed Forces personnel, CPP Volunteers, Community Volunteers, Local Administration, Fire Service & Civil Defence are the immediate responder for the victims for Disaster(s).

#### **(d) Recovery**

The aim of the recovery phase is to restore the affected area to its previous state. It differs from the response phase in its focus; recovery efforts are concerned with issues and decisions that must be made after immediate needs are addressed. Recovery efforts are primarily concerned with

actions that involve rebuilding destroyed property, re-employment, and the repair of other essential infrastructure.

### **Institutional Process in disaster Management**

Various government and non-government organizations are working in the field of disaster management and mitigation. The focal point for disaster management is the Ministry of Food and Disaster Management and the Disaster Management Bureau under the Ministry. The Bangladesh Meteorological Department (BMD) is responsible for forecasting natural disasters, particularly cyclones, droughts, storms etc. The Bangladesh Space Research and Remote Sensing Organisation (SPARRSO) is responsible for providing satellite images while the Flood Forecasting and Warning Centre (FFWC) of Bangladesh Water Development Board is entrusted with the responsibility of forecasting flood.

A number of institutions and Bureaus under different ministries such as the National Disaster Management Council headed by the Honourable Prime Minister, the Directorate of Relief and Rehabilitation, the Directorate General of Food, Department of Public Health Engineering, The Local Government Engineering Department, Water Resources Planning Organisation (WARPO) and Armed Forces Division are involved in disaster management.

### BUILDING A DIGITAL BANGLADESH

Vision 2021 has eloquently referred as *Digital Bangladesh* the myriads of Information and Communication Technology (ICT) that may be adopted in the country during the Perspective Plan period. The national ICT Policy 2009 has expressed its vision in terms of the expansion of information and communication technology and its multifarious application to establish a transparent, committed and accountable government, to ensure the development of skilled manpower, to improve social justice, to ensure public services through private – public partnership and to offer its assistance to the raising of the country to the status of a middle income country by 2021. It is believed that through the successful implementation of the vision of the ICT policy and its principles it would be possible to construct a Digital Bangladesh as promised by the government.

#### 11.1 Knowledge Economy

People spoke of labour or capital intensity previously, now people talk of knowledge intensity. Thus, in the 21st century, comparative advantage will become much less a function of natural resource endowment like coal or iron and Capital-labour ratios; it will be much more a function of technology and skills. Natural physical endowment and history will play a much smaller role; human ingenuity, ideas and skill will play a much larger role.

#### 11.2 Information Revolution

The IT revolution has intensified the move towards knowledge codification, and increased the share of codified knowledge in the knowledge stock of advanced economies. All knowledge that can be codified and reduced to information can now be transmitted around the world at relatively little cost. Market transactions are facilitated by codification, and the diffusion of knowledge is accelerated. Codification is also reducing the importance of additional, duplicative investments in acquiring knowledge. It is creating bridges between fields and areas of competence and reducing the ‘dispersion’ of knowledge. These developments promise an acceleration of the rate of growth of stocks of accessible knowledge, with positive implications for economic growth. Information and communication technologies (ICT) have greatly reduced the cost and increased the capacity of organizations to codify knowledge, process and communicate information. *ICT is the vehicle of knowledge Economy.*

#### 11.3 ICT in Bangladesh

For a country like Bangladesh with scant natural resources, a piece of land that is only 1/1300<sup>th</sup> part of land mass of the world but sheltering as much as 1/40<sup>th</sup> part of world population, national development and realization of Vision 2021 goals will not be hastened unless it harnesses the benefits of science and technology in every conceivable area to increase productivity and efficiency.

Realizing the importance of science and technology in general and ICT in particular, Government of the People’s Republic of Bangladesh formulated National Science and Technology Policy and National ICT Policy -2009 of the country. Moreover, appreciating the potential of biotechnology in agriculture and health, National Biotechnology Policy has already been adopted. The current government has also pledged for digital Bangladesh with the hope of effectively fighting

against corruption that brought the country to the brink of disaster, establishing transparency in government activities, ensuring citizen's right to information.

From the perspective of policy reform and development, "Access to Information (A21) Programme" based at the Prime Minister's Office (PMO) identified over 53 e-citizen services termed as Quick-win activities which are being implemented by the respective ministries/divisions. 21 of these quick win activities have already been launched while the rest are being pursued either independently by the implementing ministry/implementing agency with technical/financial assistance from A21. The project has already provided technical assistance to ministries and divisions to develop their websites. In order to ensure regular update and maintenance of these website A21 successfully arranged training sessions for all the Deputy Commissioners and Upazila Nirbhahi Officers (UNO) of the country. The programme also arranged computer training for newly appointed government officials at PMO. As part of the digital Bangladesh strategy, formulation and planning, the project developed a concept note on digital Bangladesh and assisted Ministry of Science and ICT to develop a five year budget for implementing digital Bangladesh projects.

ICT Policy is cross-cutting with many other thematic groups like Education, Science and Technology, Infrastructural Development, Employment Generation, Private Sector Development, Agriculture, Health Including Nutrition, Small and Medium Enterprises (SME). Science and Technology Policy including ICT will be primarily dealing with the overall policy leaving details to the above concerned thematic groups.

In this context the main objectives of science, technology and ICT may be highlighted here :

- Production of more internationally recognized scientists through establishment of more institutes of higher learning in science and technology.
- Allocate a higher share of GDP to R&D
- Productivity increase in all spheres of the economy including SME
- Induction of ICT in education and research in order to expand the orbit and standard of knowledge throughout the country; to ensure computer literacy at all levels of education and government; to encourage creativity through research and development; to help in the creation of talents and absorption of ICT in all sphere of life
- Avail employment opportunities at national and international level through production of ICT professionals of international standard
- Establish a prosperous software industry, to offer services based on ICT, e-commerce/e-business and to ensure growth in ICT industry with a view to meet the demand in the domestic and international markets, to increase income from external trade, to attract FDI and to reduce import dependence
- Quality healthcare is to be provided to all citizens through innovative application of ICT
- Ensure universal access to internet/telecom connection as a part of public welfare
- In the areas of Environment, Climate Change and Disaster Management, improve the management of Climate Change through application of ICT in evolving and absorbing environment friendly green technology, safe disposal of polluted waste including e-wastes generated in the country,

- Reduction of response time in case of disaster, and to ensure effective steps in the overall management of climate change.

### **Factors that are adversely affecting ICT**

Some of the burning issues, in which science, technology and in particular ICT can contribute and that are adversely affecting our progress towards development and prosperity, are-

- High rate of illiteracy
- Inadequate rural health facility
- Gender inequalities in access to and control over the resources and benefits of development
- Lack of strong educational framework
- Inadequacy of the current education system in promoting creativity and problem solving skill among young women and men
- Insufficient ICT/scientific infrastructure in rural areas
- Insufficient power generation
- Inadequate research initiatives/financial support in science and technology including ICT and bio-technology
- Lack of initiatives for development of indigenous technology; reverse engineering and local technology through appropriate import/export policies.

#### **11.3.1 Recent Progresses Made in ICT**

Meanwhile, some progresses have been achieved in Science and Technology for sustainable development. Some of these achievements can be summarized as follows:

- National Task Force on ICT has been reconstituted as Digital Bangladesh Taskforce.
- Copyright Act has been amended.
- The Government has already taken for IIG in the private sector.
- National Infra-network Project for Bangladesh Government (BanglaGovNet) is being initiated to connect the ministries/divisions, departments, districts and Upazilas to establish the public network for the effective implementation of e-Governance in the country.
- BCC is in the process of establishing 1400 computer lab cum training institutes throughout the country to disseminate ICT skill among people of remote areas.
- Through Support to ICT Task Force (SICT) projects have been undertaken to ensure transparency of the Government.

### **11.4 A Few Issues Relating to ICT and Digital Bangladesh**

While appreciating the contribution that ICT can make towards development in Bangladesh, a few words on the balancing of ICT and Digital Bangladesh with other areas of the economy may be in order.

**Leapfrogging with Digital Economy and Balanced Growth:** It is understandable that countries which will be following the principles of digital technology, and knowledge economy may be able to

grow faster than those who are bypassed by such Digital technology. However, the “leapfrogging” argument whereby a digital compliance country downgrades heavy infrastructure building and transportation directly into knowledge economy may not be tenable. There has to be a balance in priorities.

The productivity of agricultural labour skyrocketed with the use of industrial and biological innovations including tractors, irrigation systems, fertilizers, pesticides and genetically engineered seeds. Historically, industrial innovation in developed economies has created great wealth and improved living standards across societal divides. This progress has set them up in an ideal position to create and exploit knowledge as they transform into knowledge-based economies. Crucially, the greatest source of productivity and growth attributed to the knowledge economy derives not from the knowledge economy itself, but from its effects on the industrial economy.

In fact, it has been argued that a wide base of manufacturing is necessary to reap the benefits of Digital Economy and Knowledge Economy. One could argue that Bangladesh could more aggressively pursue manufacturing and agro-base industries to build a robust industrial economy that could be made more efficient with ICT.

**Software market:** Educated people here in Bangladesh have quite an enthusiasm for software market in the United States and Europe. It is but quite normal, especially through demonstration effect from the immediate neighbourhood. The Indian success in this respect has been attributed to in-depth training in IT in India and the expatriate connection with the US Silicon Valley and to some extent on the standard of English language among the relevant section of the Indian IT people. \*\*Nevertheless, the thrust of the policy for exploring software market in the USA remains considering the large export market India now enjoys in USA, 60per cent of the software import market or about US \$40 billion. Bangladesh could project the possibilities of out sourcing following an extent of out sourcing of the value of US \$40 billion currently by the neighbour.

## 11.5 E-governance

There is a difference between e-government and e-governance. E-Government is related to the delivery of government services and information to the public using electronic devices. It views on how citizens related to governments and citizen related to each other. E-governance is not just about government web site and e-mail. It is not just about digital access to government information or electronic payment of taxes and bills. E-governance will take care of citizens dealing with the government and dealing with each other. E-governance will allow citizens to communicate with government, participate in government policymakings and planning and citizens to communicate with each other. The governance could allow citizens and civil society to participate in the government discussion-making processes, reflect their welfare needs and aspirations by utilizing e-governance as a tool.

Reviewing Bangladesh’s economic and educational standards, it could be predicted that e-government or e-governance will be the main phase of digital Bangladesh. We will not be attaining a high degree of Digital Bangladesh immediately, but within a span of a decade, with computers and cell telephones and e-government we could go a long way with Digital Bangladesh. The following may be noteworthy in connection with e-government.

**Strategy for E-Governance:** Any sound e-government policy means that e-government would be an end-user or demand-driven services. Government services will be made available through e-

government. Government should prioritize the services that they will initially offer online such as (i) revenue collection, (ii) improve financial management, and (iii) create a better environment for investment. An example would be online tax payments, renewal of licenses and permits, registration of businesses, and ordering of various data (i.e. birth and marriage certificates). On-line information on tender documents could improve clandestine episodes connected with tendering.

***E-Governance Promoting Digital Democracy:*** Digital democracy is a term used when the use of information and communications technology enhances citizen participation in the democratic process. It is the computerization of political discourse, policy-making and the political process with the end in view of increasing, enhancing and deepening citizen participation in the policy and decision-making processes of government through a spectrum of activities - electoral campaigns, voting, consultation and participation in the policy process, public opinion polling and communication exchange between elected officials and constituents.

**E-Agriculture, E-Medicine, E-learning,** and many other areas of knowledge will develop with the assistance of ICT. It will not be a one sided affair. Mutual reinforcement and linkage will allow every one to prosper.

### Targets

- To promote scientific pursuits, R&D will be greatly promoted, bringing expenditure on R&D as a percentage of GDP from current 0.6 per cent to 1.4 percent, being the average of such expenditure among the LMI countries.
- ICT education will be made compulsory:
  - at secondary level by 2013
  - at Primary level by 2021
- Telecentre/Community e-centre with Inter-net facilities at unions; 50 % in 2015, 100 % by 2020.
- Computer lab will be established at the primary s government school  
(First with 5 by 2014, then with 10 by 2017 and finally with 20 computer sets by 2021)
- E-Governance model will be developed and implemented starting with e-tender and e-bill payment
- Introduction of E-governance at all executive levels of Govt .by 2015
- Network among communities for pest control and grain conservation in short-run
- Arrangement for electronic GD and FIR at all Police Stations, short run in Dhaka, by 2015, other metropolitan areas by 2015 and in all police stations by 2021.
- Increase teledensity to 70 % in 2015 and 90 % in 2021
- Expansion of Broad Band to 30 % in 2015 and 40 % in 2021
- Introduction of Wireless Broad Band (Wi Max) across the country by 2015

## 11.6 Strategic Goals

**The National ICT Policies 2009** has produced a detailed time bound action plan of 306 activities. These are slated to be implemented in the short-run, medium-term (5 years) and long-term (10 years). The following strategic goals are based on, among others, the ICT policy and the participatory national level consultation held under the auspices of the OPPP project.

In the light of the above objectives and current policy initiatives, the following strategic goals are presented for the OPP period.



1. Facilitate quality education for disadvantaged section of population including marginalized women/girls and men/boys, by innovative application of ICT technologies;
2. Create stimulating environment for educational excellence by introducing Olympiad competitions for boys and girls in all levels of education;
3. Improve quality of gender-responsive health care of the rural poor through development of computer-based medical consultation systems and installing them at Upazilla hospitals;
4. Introduce and strengthen bio-technological research for increased crop production;
5. Increase power generation substantially by use of nuclear energy and thus inspire industrial growth;
6. Generate employment through making ICT literacy available particularly for the young men and women of disadvantaged areas of the country;
7. Contribute to increased transparency, reduced scope for corruption, more efficient governance and thus save illiterate and disadvantaged section of population from harassment by application of e-Governance and thus help create a Digital Bangladesh as pledged by the current government;
8. Create a centre of excellence in science and technological research that will formulate solutions to our technological problems and reduce dependence on foreign experts;
9. Ensure effective utilization of resources like computers, internet connectivity, industrial complexes by close monitoring through ICT tools and processes;
10. Improve teledensity to bring greater mass of population into the streams of ICT activities including introduction of e-community centres. In addition, emphasis may be given to connectivity for internet and other e-education activities. Building infrastructure for high-speed internet and related support services such as telemedicine should be a major goal to accomplish in the coming future.
11. Reformulate science and technology policy in the light of the revolutionary developments in ICT and bio-technology fields with focus on poverty reduction strategies.
12. Ascribe adequate importance to indigenous technology and inspire local technology through appropriate import and export policies.
13. Make serious efforts to develop technologies for community housing in bay areas.
14. Establish Bangladesh as a Business Process Outsourcing (BPO) destination.
15. Ensure ubiquitous connectivity through various means including Universal Service Fund (USF) in order to connect the unconnected.
16. Promote latest technology, value added services, content generation and to promote/facilitate content service providers.
17. Open more international connectivity by means of Submarine Cable or Satellite.
18. Introduce IP Telephony and Video Conferencing Services.
19. Promote soft-term loans for young and fresh entrepreneurs and promote self employment initiatives.

It is hoped that by implementing plans set out in Digital Bangladesh policy the country will move towards a poverty-free middle-income prosperous country.

***The End***