

**POPULATION, URBANISATION AND SUSTAINABLE DEVELOPMENT IN
BANGLADESH**

A.H. Chaudhury*, **S.N. Ahmed** and **M.Z. Haider**
Economics Discipline, Khulna University, Khulna 9208, Bangladesh

KUS-00/51-121000

Manuscript received: October 12, 2000; Accepted: September 5, 2001

Abstract: As a third world developing country Bangladesh encounters a multiplicity of problems like over population, unplanned urbanization and so on. All these problems act as constraints of sustainable development. This study concentrates how population and urbanization features of Bangladesh challenge its sustainable development and the ways of removing these problems in achieving sustainable development. Proper population and urbanization planning and management accelerate economic growth and ensure sustainable development. But any improper planning and mismanagement in this connection create multidimensional impacts, all of which act as threat to sustainable development. So, to attain sustainable development, proper population and urbanization planning and management are essential.

Key words: Population; Urbanization; Resource base; Sustainable development; Bangladesh

Introduction

Urbanization is a process of transformation that creates nurtures and proliferates progress and civilization. It is both, the cause and consequence of civilization. With the power of its centripetal forces the urban centers draw resources to their prosperity; on the other hand there are also centrifugal forces that operate actively to diffuse development in the undeveloped areas around urban centers. Unlike developed countries, urbanization in developing countries is not an unmixed blessing. Characteristically most developing countries suffer from the problems, like, high population growth, high unemployment and mass rural-urban migration. Currently developing countries are experiencing high rate of urbanization where rural –urban migration plays significant role. Another characteristic feature of present urban transformation is the prevalence of mass poverty in urban centers. In resource constraint countries mass poverty is a major source of environmental degradation which consequently affects sustainable development.

Bangladesh is not only a developing country marked by high population growth; it is also a country with a rapid rate of urbanization. If the current level of living can not be raised within a very short time, unemployed, low-income underprivileged population will overwhelmingly dominate urban centers. Living in degraded condition, devoid of basic urban services, these urban poor will be a major source of environmental concern, which will be mounting up along with the growing level of urbanization. Since the growing

* Corresponding author. Tel.: +88-041-721791,720171-3;Fax: +88-041-731244;e-mail:< ku@bdonline.com>
DOI: <https://doi.org/10.53808/KUS.2000.2.2.0051-ss>

urban population is going to play a critical role in national demography, a close interrelation should be established between urban environment and sustainable development of the nation. Deteriorating urban environment will have far reaching impact on the nation's drive towards development. Unless the urban poverty issues are addressed properly, they will breed further problems jeopardizing the endeavor to sustainable development.

The current paper reviews the dynamics of demographic changes in the country and the trend in urbanization. Facts have been unveiled about the social consequences of present urbanization and their impact on environment. Finally, analytical discussions have been carried out on how urban environmental degradation is likely to handicap drive towards sustainable development and finally, the paper sheds some light on measures to way out.

Population Dynamics

Any discussion on environment and development must involve review of demographic issues as population forms the fundamental source of all environmental problems as well as the goal of all development activities.

a. Demographic trend and characteristics: According to 1991 population census total population of Bangladesh was 111.50 million with intercensal growth rate of 2.17 percent. Density of population was 755 persons per square kilometer. About 83 percent of the population lives in rural areas. It took nearly 80 years for Bangladesh's population to double from 22.80 million in 1871 (the year of first census) to 44.20 million in 1951. Population grew more than double in 30 years from 1961 to 1991.

Table 1. Population growth from 1901 to 1991.

Census Year	Population (Million)	Growth Rate (%)	Urban (Million)	Rural (Million)
1901, March 01	28.90	-	-	-
1911, March 10	31.60	0.94	-	-
1921, March 18	33.30	0.60	-	-
1931, February 28	35.60	0.74	-	-
1941, March 14	42.00	1.70	-	-
1951, March 01	44.20	0.50	-	-
1961, February 01	55.20	2.26	2.60 (4.71%)	52.60
1974, March 18	76.40	2.48	6.70 (8.77%)	69.70
1981, March 05	89.90	2.35	13.70 (15.24%)	76.20
1991, March 11	111.50	2.17	19.20 (17.22%)	92.30

Source: BBS, 1993; BBS, 1994; GOB, 1998. Note: Figure within parenthesis indicates percent of total population.

Crude Birth Rate (CBR) in 1998 was 24.96 per thousand while Crude Death Rate (CDR) was 7.90 per thousand per annum. The comparable figures for 1991 were 32.00 and 13.00 respectively. The Total Fertility Rate (TFR) has come down to 3.60 from 5.04 prevailing in 1981. Infant mortality rate also declined from 92 per thousand in 1991 to 76.79 per thousand in 1998. Improvements in mortality and fertility rates may be explained by extended health and family planning programmes. However, despite overall improvements in demographic parameters there exist sharp differences between urban and rural areas.

Table 2. Variation of demographic parameters between urban and rural areas.

Parameter	National	Urban	Rural
Crude Birth Rate	32.00	23.90	32.90
Crude Death Rate	13.00	7.30	11.50
Gross Reproduction Rate	2.06	1.38	2.17
Net Reproduction Rate	1.70	1.18	1.71
Infant Mortality (Per 1000 live birth)	92	69	94

Source: GOB, 1994.

Data in Table 2 clearly indicates that all the demographic parameters show comparatively better position in urban areas. This has been the result of improved health and education facilities and better income earning opportunities in urban areas than in rural areas. The prevailing demographic parameters also indicate a higher population growth possibility in rural areas.

b. Qualitative characteristics of population: The size of labour force in Bangladesh increased from 30.90 million in 1985 to 56.00 in 1996. The principal reason for sharp increase in such a short span of time is the out come of changes in definition where women's household activities have been recognized as economic activities. The male-female break up of labour force was 35.00 million male and 21.00 million female. On the other hand, the rural -urban break up of labour force was 45.00 million rural and 5.70 million urban. Of 56.00 million employed labour force, 63.20% were in agriculture, 7.70% in manufacturing and the rest in other economic sectors (BBS, 1994). The employed labour force of the country suffers from high degree of underemployed, estimated to be one third of the labour time. The labour productivity is low due to low level of technology and inadequate resources.

The gap of literacy between urban and rural areas is very wide-36.6% in rural areas and 63.0% in urban areas (GOB, 1998). Completion of rate of students enrolled at primary level was 60% in 1995 for the entire nation. Country's drive towards economic growth has not been blessing for all categories of people. Distribution of household income in Bangladesh has been found highly unequal. Movement of gini ratio which measures the degree of inequality showed an increasing trend rising from 0.39 in 1981 to 0.43 in 1996 (GOB, 1998). Various human development indices also indicate low performance. Only 45% of the people of the country area covered under essential health care. Estimates show that the figure will reach 70% by the year 2002 (GOB, 1998). Access to safe drinking water stands at 56% with 53.0% in rural and 76.3% (1991) in urban areas (UNDP, 1994). In 1994, percent of people who have access to sanitary latrine were 14.89 in rural areas and 60.57 in urban areas. Percent of people living in pucca and semi-pucca houses were 59.99 in rural areas and 85.87 in urban areas (GOB, 1999).

Growing Rural Impoverishment

Though social scientists have identified a number of social, cultural, demographic, physical and communication factors (Todaro, 1997) for mass rural-urban migration in developing countries, poverty remains to be the single most dominant root cause. Since greater number of population inhabit in rural areas in developing countries, the absolute number of poor in rural areas is much greater than that in urban areas. As evident from

the preceding sections, almost all demographic indicators exhibit comparatively lower level of performance in rural areas giving clear indication of poor quality of life in rural areas. In fact, the factors are both, the causes and effects of perpetual poverty in rural areas. Over the last few decades substantial resources have been pumped into various rural sectors but except agriculture there has been little improvement in the quality of life of mass rural households. High population growth and mal-distribution of benefits of development, due to prevailing social structure, have upset many of the achievements of development efforts.

The most popular way of measuring poverty is calorie intake. In Bangladesh context 2122 kilo calorie is required for normal physical activities, while minimum 1805 kilo calorie is needed just for survival (UNDP, 1994). The people taking former level of nutritional intake are termed as 'poor', while the people taking the later level are termed as 'hard core poor'. A review of poverty figures for last two decades reveal that the number of poor and the extent of poverty have fallen with respect to time. But due to rapid growth of poor population the absolute magnitude of poverty still remains at a very high level. The following table shows the findings of household expenditure survey 1995-96 by BBS about rural poverty.

Table 3. Rural poverty in Bangladesh.

Type of Poor	1983-84 (%)	1985-86 (%)	1988-89 (%)	1991-92 (%)	1995-96 (%)
Poor	36.7	26.3	28.6	28.3	24.6
Hard core poor	61.9	54.7	47.8	47.6	47.1

Source: BBS, 1998.

Again, a study about changes in rural poverty conducted by Bangladesh Institute of Development Studies (BIDS) provides the following message. Data of Table 4 is found from household expenditure survey conducted by BBS in 1995-96. The following table shows land ownership pattern in rural areas of Bangladesh.

Table 4. Changes in rural poverty from 1987 to 1994.

Level of Poverty	1987 (%)	1990 (%)	1994 (%)
Poor	25.8	30.7	22.5
Hard core poor	31.7	28.6	29.2
Poor and hard core poor	57.5	59.3	52.7
Poverty gap ratio	21.7	24.8	19.2

Source: GOB, 1999.

Table 5. Household wise land ownership in Bangladesh.

Area of land (acre)	Household (%)
0-0.49	55.23
0.50-2.50	30.64
2.50 and above	14.13
Total	100.00

Source: BBS, 1998.

The incidence of poverty is high in Bangladesh, and it is higher in rural areas than in urban areas. Although poverty has fallen in recent years, more than 50 percent of the rural population still lives below the poverty line. Poverty in Bangladesh is a manifestation of increasing landlessness, high unemployment, low literacy rate and high

population growth. More than half of all rural households is landless, and population pressure has reduced the average size of farms continuously over the past several decades (for example, the average farm size fell from 3.5 acres in 1977 to 2.4 acres in 1984).

With limited land, 1.80% annual growth in the population has increasingly marginalized farmers. Only 45% of the active labour force is gainfully employed. The extreme pressure on land in Bangladesh forces a large section of the labour force to find marginal activities within the rural economy to survive. About 29% of the labour force was involved in marginal activities (those having very low productivity in 1989-90 (Sassen, 1995).

In 1995-96 the poor comprised 47.10% of rural population and 49.70% of urban population. About 35% of rural households suffer from food deficit. The situation of food deficit is even worse among the near-landless (owing land between 0.01 acre to 0.49 acre) who constitute about 55.23% of total rural households. About 54% of them have chronic food deficit and 34% have occasional deficit. A recent study unveils the fact that 72% of the hard core poor in rural areas possess at most half an acre of land (Barkat, 1996). The chronically deficit households are mostly engaged as wage labourers, particularly, agricultural labourers. Wage labourers and cultivators account for nearly three fourths of the rural absolute poor.

The leanest months in rural Bangladesh are the September, October and November, prior to the harvest of aman, the main rice grown in the country. Jobs are also scanty in supply during rainy season, from July to September. About 40% of the rural households suffer from food deficit during these two periods and increase the incidence of poverty. The highest incidence of poverty with 63% for absolute and 35% for hard core has been found in flood prone areas. For draught prone areas 54% are absolute and 25% are hard core poor.

Limited capacity of agricultural land under its present cultural practices fail to absorb the ever increasing poor unemployed in rural areas, where off-farm activities have also not developed. Although there are large number of NGOs operating for rural poverty alleviation side by side with government agencies, their actions are yet to have substantial impact on curbing massive poverty. Limited programme coverage due to limited resources seems to be the primary reason for not having expected level of output. After living a life of staggering poverty the rural poor, in large numbers, march towards more prosperous urban centers finding no other options for survival in their places of origin.

Rural-urban Migration

Rural-urban migration for last few decades is playing significant role in urbanization in Bangladesh. Economic imbalances, both, at inter-personal and inter-regional levels operating with rapid population growth induce large-scale shift in population from depressed rural to more prosperous urban areas. The factors influencing rural-urban migration are conventionally grouped as urban pull factors and rural push factors.

Both, the push and the pull factors, are subject to regional variations with respect to their type, intensity, size and location of urban center (UNDP, 1993). A host of socio-

economic, demographic, geographical and communication factors are responsible for continuous rural-urban migration. Rural population is on continuous increase every year against a fixed farmland, which is the main source of their livelihood. As land-man ratio deteriorates the number of landless increases, adding further to the rural poor. Due to its

Table 6. Contribution of migrants in urban population growth.

Year	1974	1981	1991
Urban Population as percent of Total Population	8.80	15.20	17.20

Source: BBS, 1994.

limited capacity, agriculture sector is unable to accommodate the growing population. As a result the surplus rural poor march towards urban centers in quest of living. Bangladesh is a country of natural disasters. Disasters like river erosion, cyclone, flood and draught occur regularly on regional basis. For obvious reasons the rural poor are the usual victims of all these disasters. Finding no other way to earn living most of these victims are forced to migrate to urban centers. For cultural reasons the educated people are unable to cope with rural environment. As a result those who come to urban areas for education purpose do not go back to their villages. Besides, educated ones usually take up jobs non-agricultural in nature in urban centers. For these reasons there is continuous flow of educated people from rural to urban areas. This flow increases further with the increase in rate of education.

Improved and low cost of transportation also plays important role in augmenting migration to urban centers. Improved transportation system enables movement from one place to another with short span of time. Competition among companies brings down the cost of transportation. These opportunities encourage the low-income people to migrate easily. Big urban centers are always greater attractions to migrants than the smaller ones, as they offer more and varied job opportunities than the smaller ones. In this way the large cities pull more and more migrants and add to their volume of population. Census data of 1974 shows that about 37% of the population in Dhaka city were migrants from other districts (BBS, 1974). Needless to mention that overwhelming majority of this people comprised poor and low income. Besides, security of employment, education, health and other social opportunities also serve as urban pull factors.

Urban Population Growth

Current century is marked by substantial urban population growth not only in Bangladesh but also throughout developing countries. In Bangladesh this growth has been remarkable, both, in absolute and percentage terms. In 1901 only 700,000 people used to live in the urban centers situated in the areas of present Bangladesh. This was only 2.4% of the total population. In 1991 it rose to 192 million which was equivalent to 17.20% of the national population (BBS, 1994). From Table 7, it is evident that between 1961 and 1991, urban population increased by more than 600%. The growth rate of urban population is also more than twice to that of the national and rural population.

These major urban centers altogether account for approximately 50% of all urban population and about 10% of national population. Dhaka has been the main focus of the migrants from all over the country. During 1981-91 inter-censal periods Dhaka

experienced a net increase of some 3.1 million people which accounted for 42% of nation's net urban growth of 7.5 million.

Table 7. Urban and rural population growth from 1961 to 1991.

Year	Bangladesh		Urban area			Rural area	
	TP (million)	PGR (%)	TUP (million)	TP (%)	PGR (%)	RP (million)	PGR (%)
1961	55.20	-	2.60	4.80	-	52.60	-
1974	76.40	2.48	6.70	8.80	4.25	69.70	4.30%
1981	89.90	2.35	13.70	15.20	6.63	76.20	6.10%
1991	111.50	2.17	19.20	17.20	4.90	92.30	1.50%

Source: BBS, 1993 ; BBS, 1994; BBS, 1998; BBS, 1999; GOB, 1991;GOB, 1998. TP= Total Population; TUP= Total Urban Population; PGR= Population Growth Rate; RP= Rural Population;

Table 8. Population of large metropolitan cities of Bangladesh in 1991.

City	Population (in thousand)
Dhaka	6537
Chittagong	3347
Khulna	966
Rajshahi	560

Source: GOB, 1994.

Urban poor: Poverty in a New Dimension

Urban poverty in developing countries is now exposed in a new dimension, not only with respect to its size and nature, but also its diversity and variation from rural poverty. As already mentioned, about one third of the urban population growth is contributed by rural-urban migration as large number of landless poor move to cities and towns every year to escape the hard realities of poverty in rural areas. The new arrivals combined with the already existing poor make up a large group of urban poor community. Studies indicate that about 50% of total urban people of Bangladesh are poor. About 30% of them are hard core poor standing at the borderline of starvation. Studies (GOB, 1991) indicate that annually household income of the hard core poor was less than Tk.2600 in 1991, which was considered to be the minimum amount to meet daily calorie requirement and other basic needs.

The spatial dimension of urban poverty, widespread in major cities, is indicated by the proportional growth of squatters and slums. The first quest of a poor migrant is to earn a living for survival and it is evident that urban centers are comparatively better places than rural areas at least for survival through earning.

The migrant urban poor have to give up many opportunities they used to have in their rural habitat. The most significant of such opportunities is the low density natural physical environment congenial to healthy living. Recent studies show that, under government and NGO programmes, though the urban poor are having better access to urban services, in many slums the overall conditions are worse than in rural areas. High land value, higher house rent forces the low-income households to choose their habitations in areas with degraded environmental condition. For the reasons stated above the low-income habitations are usually found in fringe areas. For obvious reasons these

areas are deprived of almost all municipal services and hence have low rents. Perpetual habitation by poor in degraded living environment pose serious threat to health, social formation, physiological development of young generation of this large section of urban dwellers.

Urban Poor's Living Environment

a. Shelter and land: Low level of income of the large section of the urban community does not permit them access to standard shelter and services. In Dhaka estimated 60% of the urban households live below poverty level (absolute poverty) earning between Taka 1724 and Taka 2600 annually (CUS, 1989). There are only 2% high income people who have access to 15% of residential land, while 70% have access to just 20% (UNCHS, 1993). According to population census 1991, about 84% of urban shelters are made of temporary or semi-permanent building materials like thatch and bamboo. Usually, such dwellings are found in areas with poor urban services and amenities. Though average floor space per capita is approximately 5 square meters in urban areas which is higher than rural (4.4 square meters) and national average (4.5 square meters), but the average goes down as 1.4 square meters to 1.9 square meters per person in densely populated urban poor areas (UNCHS, 1993).

b. Water supply: From last few decades it has been observed that the rate of urbanization has been faster than development of infrastructure. In most cases infrastructure follows growth of urban areas. As a result large section of urban community, obviously low income, has no access to municipal services. About 60% of the urban population are deprived of public water supply. They have to obtain water from private sources including pond, other surface water reserves and tube wells. Except Dhaka and Chittagong the fringe area slum dwellers in other urban centers do not have any access to piped water supply system (UNCHS, 1993).

c. Sanitation: Only 25% of the urban population (UNCHS, 1993) approximately 5.4 million have access to hygienic sanitation. The remaining 75% rely on open latrines, defecation in fields, drains, ditches, rivers or bucket latrines served by sweepers. Drainage is a crucial problem in fringe areas of big cities inhabited by low-income poor.

d. Social Services: The situation regarding social services is equally dismal. Health sector can be cited as an example. While, overall condition in health are better in some urban areas. But it is found to be worse than national average. The crude death rate at national level was 9.0 per thousand in 1995 (GOB, 1998). In urban areas it is 7.8, but in some urban slums it is 43.6 (UNCHS, 1993). In education sector only 20% of urban poor school age children are enrolled, while drop out rate is 80%. There are health and education programmes for rural areas, but no such programme is yet to be taken up in comprehensive manner for urban areas.

The urban scenario just depicted does not reveal a promising for vast urban population who is to play key roles in creating an urban based economic structure. Living in an unhealthy environment deprived of basic urban and social services a new urban generation is being created who will not only become a burden for the sluggish national

economy (instead of serving as fore runner in the process of augmenting growth) but will pose as impediments to a healthy urban socio-economic growth.

Urban Informal Sector: A Strong Support to Urban Economic Base

Generally, the economy of developing countries exhibits a dualistic nature of national economy. The modern urban capitalistic sector comprises capital intensive, large-scale production and a traditional subsistence rural economy consists of labour intensive small -scale production system. In recent times the economists have discovered idealistic nature within urban economy and the urban economy has been redefined as 'formal' and 'informal' sectors. Different from organized and registered 'formal' sector the 'informal' sector is that part of developing country's urban economy characterized by small competitive individual or family firms, petty retail trade and services, labour intensive production method and market determined factor and production prices. In developing countries it is often found to be the most important source of employment in urban areas. The bulk of new entrants in urban labour market are found to set up their own enterprises or to work for small-scale family owned enterprises with simple technology. The informal sector occupations vary in a wide range from street hawking and junk collecting and snake charming to street medicine seller and prostitution. Many find jobs as mechanics, carpenter, small artisan, barber and household servants. In developing countries informal sector absorb almost 20% to 70% of the urban labour force (Todaro, 1997). And this sector is likely to play far more significant role in employment generation as formal sectors in rural and urban areas fail to absorb the additions to the labour force. In Bangladesh urban informal sector plays very significant role in employment generation. However, the absorption capacity of big urban centers is more significant than small ones due to their greater volume of economic activities and large population size. In Bangladesh urban informal sector is linked with rural sector by way of allowing excess labour force to migrate to urban areas to escape rural poverty and unemployment. The informal sector population makes up the urban poor class in urban poor class in urban centers. Dwellers dwelling mostly in slums and quarters are the most under-privileged group in cities and towns. They are the cause as well as the victims of urban environmental degradation.

Quest for Sustainable Development

Sustainable development means the management of the earth's resources in such a way that their long-term quality and abundance is assured for future generation. The world commission on Environment and Development in 1987 first introduced the concept 'sustainable Development'. Activities related to economic development and planning damage the environment through pollution and deplete resources. A polluted environment not only threatens the health and well being of the present generation but also of their future generations (Karpagam, 1991). Similarly unplanned resource utilization limits the entrance of the future generation in resource base. As a result the objective of attaining sustainable development is disrupted. Unplanned population planning and urbanization are the main causes of such disruption. Bangladesh is Asia's fifth and world's ninth most populous country at present. Its total population and population growth rate was 128.10 million and 1.67% respectively in January 1999(GOB,

1999). The population of Bangladesh has a tremendous growth potential in its age structure. Still population below 15 years is around 43% of the total population and they are not playing any significant role in production and income generation activities. But they are depleting a huge amount of natural as well as other resources for the fulfillment of their basic needs like food, clothing, education, housing and medicine. Besides, recreational demands of the people of Bangladesh also utilize huge amount of resources.

Natural and other resources are the inputs in the production process of consumer goods and services. So, consumption activities deplete resources. On the other hand, investment is the main tool of the maintenance of the existing resources and invention of new resource items or sources. The overall feature of Bangladesh in the field of consumption and investment for last few years is shown in the table given below.

Table 9. Consumption and investment in Bangladesh during last few years.

Indicator	Year	90-91	91-92	92-93	93-94	94-95	95-96	96-97	97-98	98-99
Consumption- GDP Ratio		95.90	94.20	93.00	92.50	91.80	92.50	92.50	91.40	91.60
Investment-GDP Ratio		11.50	12.10	14.30	15.40	16.60	17.00	17.30	17.80	18.50

Source: GOB, 1999.

The average consumption – GDP ratio for each year of the last decade of the 20th century was 92.80 where as for total investment – GDP ratio this statistics was only 15.60 on the basis of base year 1984-85. And only a small portion of this investment was directed directly or indirectly towards renewal or innovation or preservation of resources. So, present high rate of depletion and low rate or in many cases no steps for resource renewal or innovation or preservation is a serious threat to the country's resource base.

At present 2.45 million hectors, that is, 17% of the total land of the country is under forest or potential forests (GOB, 1998). Wide-spread destruction, unplanned extraction, clearing of forest land for agriculture etc. have reduced the forest coverage to about 8% as against the minimum requirement of 25% for ecological and environmental balance.

Natural gas is currently the only indigenous non-renewable energy resource of the country which is being extracted and consumed in significant amount. Currently, about 90% of the country's power generation is based on natural gas and the whole of the urea fertilizer requirements of the agriculture sector is met by using gas as feed stock. Natural gas output now accounts for about 70% of the country's commercial energy supply. Gas reserve has been estimated at about 20.18 trillion cubic feet (TCF) of which 10.88 are considered as recoverable as on October 1996. New discovery in Sangu (off shore), Shahbazpur, and other blocks may augment the gas reserve to several times the present reserve. As stipulated in the energy policy, gas supply will required to be limited to a maximum of 365 billion cubic feet (BCF)) per year provided significant increase in the natural gas reserve does not take place. If remarkable addition to reserve occurs, the situation may significantly be improved in the coming years. Production and supply of and demand for gas in Bangladesh are shown in the table given below.

Table 10. Production and supply of and demand for gas.

Item	1996-1997	2001-2002 (projected)
Peak demand (BCF)	401.50	620.50
Average demand (BCF)	328.50	496.40
Annual production capacity (BCF)	292.00	500.00
Annual gas supply (BCF)	285.00	495.00

Source: GOB, 1998.

Petrobangla's estimation of production and supply of and demand for gas is shown in table 10. It shows that the projected value of all the items, that is, peak demand, average demand, annual production capacity and annual supply are greater than 365.00 billion cubic feet in 2001-2002. Such a situation is also a threat to the gas resource base.

Water resources have the multifarious demand like, domestic, irrigation, fisheries, livestock, forestry, environment, etc. It is an important component of the resource base of Bangladesh and its demand is increasing day by day. Two main sources of water are surface water and ground water. Improper urbanization and industrialization degrades the surface as well as ground water quality. Again, in excess of surface water, to meet the increasing demand of water resource, a substantial amount of ground water is collected. This high rate of ground water collection moves the available layer of water resources to a deeper stage. These quality degradation and water layer deepening are also threats to the water resources as well as to the sustainable development.

Present trend of use, maintenance and mobilization of forest, water and natural gas is a threat to sustainable development. Population is the principal factor in producing such threat through its demand. Unplanned urbanization is another factor that also constitutes a threat to sustainable development. Urbanization accelerates the economic growth of a country, no doubt. History of development does not show any country that has been able to noticeably raise its economics, or forge linkages with global commodity markets without the benefits of urbanization. Urban centers contribute in the economy by absorbing population increase, affording a base for more diffused productive activities and providing infrastructure and services required for marketing and export. The share of urban areas in GDP for countries like Singapore, Hong Kong, Republic of Korea and Philippines are 100, 95, 79 and 53 respectively and about 100, 95, 74 and 38% of total population of these countries live in urban areas (UN ESCAP, 1993). It is true that countries having greater level of urbanization gave greater proportion of GDP contribution to the national economy. To achieve sustained growth, Bangladesh must develop its cities that provide the economies of scale and agglomeration and serve as important hubs of production, employment and innovation. Here the most important factor that should be considered is proper planning about urbanization. In Bangladesh, many people are living in the villages and in many cases they are suffering from poverty, severe income inequality, poor health, low living standard, inadequate sanitation, etc. In many cases the villagers are unable to fulfill their basic needs. Such a situation forced people to migrate in urban areas. Existing urban areas of Bangladesh are already over-populated. Existing huge number of urban people and extra added people to the urban areas are creating a serious damage to our environment. They create a huge amount of household wastes that are not decomposed and recycled properly. Again, these people create extra pressure for unplanned industrialization in the urban centers. Such

industrialization produces industrial wastes, which also degrades the environmental quality. Besides, additional people require extra vehicles to go here and there. These vehicles discharge smoke and other pollutants to the environment that causes environmental pollution. Low standard of living, poor housing facilities, inadequate sanitation facilities of the urban poor people also causes environmental damages. All these damages hamper the quality of resources and ultimately constraints the goal of achieving sustainable development (Callen and Thomas, 1996).

Measures to Way Out

Sustainable development is the key element for achieving long run economic development. Following steps may ensure the achievement of the objectives of sustainable development in Bangladesh.

- a. Accurate measurement of the natural resources:** Resources are associated with people's everyday life. So, for continuation of people's daily activities and for improvement of the living standard, at first, the items, sources, quality and quantity of resources should be traced. A clear conception about present status of the natural resource base is an important precondition for initiating any sustainable development planning, here, the answers of the following queries should be searched. What are the important resources of Bangladesh? What are the sources of these resources? What are the alternative uses of these resources? What about their quality and quantity and so on.
- b. Preventing misuse of resources:** In many cases resources are misused in Bangladesh for negligence of people or for the lack of proper planning. Proper planning for ensuring efficient and optimal uses of resources is very important. Increased awareness about the importance of resources, strict control, planning and monitoring of resource use can eliminate or at least these misuses.
- c. Increasing resource generation rate:** Resource generation is the key concern to sustainable development. A development plan that utilizes all or maximum amount of the resources at present will not sustain in the long run as future generation will not get any amount or will face shortage of resources to continue and expand the on going development plans. Such a situation will make the life of the people of the future generation difficult. So, steps for increasing resource generation rate should be initiated immediately and this task should be highly prioritized.
- d. Technological advancement to increase the production capacity of resources:** Increased population and their increasing demand of consumer goods are narrowing down the country's resource base day by day. This trend will lead the future generation to face a tougher situation. The prime way of facing this challenge is technological advancement that increases the production capacity of resources. This technological advancement will ultimately reduce present consumption of resources and preserve that for the use of future population.
- e. Searching alternatives of non-renewable resources:** Natural gas, oil, etc. are important non-renewable resources of Bangladesh. As these are non-renewable, firstly, the optimal utilization of these resources should be ensured. Secondly, searching alternatives of these resources should be encouraged so that their reserve remains intact for future generation. Successful invention and use of alternatives of non-renewable resources will be a milestone for sustainable development.
- f. Preserving and upgrading quality of resources:** Quality of resources is a very important phenomenon for attaining desired goals. High quality resources are associated with high production efficiency and operational capacity that ultimately reduces or at least restricts the mass use of resources. People's daily activities in many cases degrade the resource quality,

which ultimately creates serious pressure for over consumption of resources. So, to ensure sustainable development, proper steps in preserving existing quality of resources and initiatives for qualitative up gradation of these resources should be taken.

g. Proper population planning: All sorts of social, political, cultural and religious activities of today's world are either directed for the population or by the population. That is, population is the principle concern of this world. So, any mismanagement or improper planning in this regard will ultimately create multiple impacts in all other sorts of activities. Bangladesh faces improper population planning that result over population, poor health and sanitation facilities, high dependency ratio, mass poverty, severe inequality and so on. All these, either directly or indirectly deteriorate or reduce the quality and quantity of resources that act as constraints of sustainable development. So proper population planning is very essential for sustainable development.

h. Planned urbanization: Huge number of population, mainly the poor village living population of Bangladesh, creates a tremendous pressure for rapid urbanization. But this urbanization process is not well managed or properly planned in many cases. Urban poverty, income inequality, health hazard, environmental degradation, etc. are the outcomes of this unplanned urbanization. These outcomes are also threats in sustaining development plans. So to ensure sustainability, well managed development plans are very essential. Planned urbanization can play a significant role in this regard. Urban centers should be restructured in such way so that daily urban activities do not degrade resource quality and environmental balance. Access of people to income generation activities, health and sanitation facilities, education, recreation etc. should also be considered at the time of restructuring urban centers. Again, new urbanization should be encouraged only after managing sufficient infrastructure base and other daily necessary facilities. Besides, income and employment generation activities should be spreader all over the villages to discourage rural –urban migration and to encourage urban-rural migration, if necessary. All these steps will ensure steady state urbanization process that will ultimately ensure sustainable development.

Conclusion

Needs and aspirations of the people are the guiding principles in determining the strategy for development in any society. Once, population was thought to be a burden for a society. But it has been proved that through education and skill development a population can easily be transformed into human resources. These human resources can play a significant role in the economic development of any society. Similarly, urbanization is also an important precondition of any nation's development. It improves standard of living, economic condition and social status and promotes industrialization. All these ensure sustainable development.

But here the most important thing is proper planning and management of population and urbanization. Improper planning and mismanagement of population and urbanization leads to haphazard growth, high population density, low investment, over population, environmental degradation, ecological imbalance, poor health and sanitation facilities, quality degradation of resources, poverty, inequality, unemployment and under-employment, deterioration of production and operational capacity of resources and so on. All these act as constraints and threats to sustainable development. So, for attaining sustainable development in Bangladesh, proper population and urbanization planning that best suit to time and environment should be launched. But above all, development

strategy of a country is the crucial factor which matters most, for the solution of not only other problems but also population problem. Hence an appropriate development strategy along with suitable population and urbanization programmes will transfer Bangladesh from today's developing country status to developed country status and will ensure a significant position in tomorrow's global economy.

References

- Barkat, A., 1996. Population distribution, urbanization and internal migration, In: A. Barkat and S.R. Howlader (eds.), *Population and development: National Plan of Action*, Govt. of the People's Republic of Bangladesh, Dhaka.
- BBS, 1993. *1992 Statistical Yearbook of Bangladesh*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Govt. of the People's Republic of Bangladesh, Dhaka.
- BBS, 1994. *Bangladesh Population Census 1991*. Analytical Report, Vol. 1, Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Govt. of the People's Republic of Bangladesh, Dhaka.
- BBS, 1998. *Household Expenditure Survey 1995-96*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Govt. of the People's Republic of Bangladesh, Dhaka.
- BBS, 1999. *1998 Statistical Yearbook of Bangladesh*. Bangladesh Bureau of Statistics, Statistics Division, Ministry of Planning, Govt. of the People's Republic of Bangladesh, Dhaka.
- Callen, S.J., and Thomas, J.M., 1996. *Environmental Economics and Management: Theory, Policy and Application*. IRWIN, London, pp. 21-24.
- CUS, 1989. *The Urban Poor in Bangladesh*. Sector Report, Vol. 9, Land and Housing, Center for Urban Studies, Dhaka,
- GOB, 1991. *Report of the Task Forces on Bangladesh Development Strategies for the 1990s*. Vol. 3, Planning Commission, Govt. of the People's Republic of Bangladesh, Dhaka.
- GOB, 1998. *The Fifth Five-year Plan 1997-2002*. Planning Commission, Ministry of Planning, Dhaka.
- GOB, 1999. *Bangladesh Economic Review 1999*. Finance Division, Ministry of Finance, Dhaka.
- GOB, 2000. *Bangladesh Economic Review 2000*. Finance Division, Ministry of Finance, Dhaka.
- Karpagam, M., 1991. *Environmental Economics: A Text book*. Sterling Publisher Private Limited, New Delhi, pp. 3-13.
- Sassen, S., 1995. *Urban Impacts of Economic Globalization*, In: J. Brotchie et al. (eds.), *Cities in Competition*, Longman Australia Pty., Melbourne.
- Todaro, M.P., 1997. *Economic Development in the Third World*. Orient Longman, London, UK.
- UN ESCAP, 1993. *State of Urbanization in Asia and the Pacific*. United Nations Economic and Social Commission for Asia and the Pacific, Dhaka.
- UNCHS, 1993. *Bangladesh Urban and Rural Sector Review*. United Nations Center for Human Settlement, Dhaka.
- UNDP, 1994. *Human Development Report 1994*. United Nations Development Programme, Dhaka.