

## The Interrelationship between Poverty, Environment and Sustainable Development in Bangladesh: An Overview

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### Abstract

*This paper attempts to focus on some of the issues and problems related to poverty and sustainable development in Bangladesh from the perspective of environmental protection and ecological balance. It has been argued that poverty alleviation and environmental protection are in harmony to reinforce sustainable development. This paper is an attempt to analyze the development scenario that aims at reducing poverty. However, in spite of the best efforts of government and NGOs the various indices of development in the developing countries have already faced difficulties in the context of achieving their goals and targets. This paper argues that instead of contributing to sustainability most of the development programs having a negative effect on overall environment and society.*

### Introduction

Bangladesh is a country with total population of 135.2 million, GDP of US\$56.4 billion and per capita income US\$417 (UNDP, 2005). It faces tremendous challenges in coping with the infrastructure and service requirements of its growing population, with a total public expenditure of US\$ 819.1 million. About 77 per cent of its population lives in the villages, but almost 31 per cent households have only one or less than one acre of land to cultivate (BBS, 2003). National rate of calorie intake is approximately 2,120 kilo calorie. More than 27 per cent of the households are getting below 1800 k calorie (BBS, 2003). The projected population of the country is about 250 million by the year 2035. About 31.2 per cent population has below US\$1 income per day (W.B., 2006). Access to food, sanitation, pure drinking water, health care, education and social security are obviously inadequate in both urban and rural areas of Bangladesh. For example, the public expenditure on health and population is only 6.4 per cent of total public expenditure. And the total health subsidy for the poor as a percentage of per capita expenditures is only 1.4 per cent (2003). The total expenditure on per capita health and population is only US\$ 12.2 (UNDP, 2005)<sup>2</sup>. But this does not portray the real poverty situation of the country: the silent feature of poverty is much more devastating in the events such as floods, cyclones, droughts, and other natural disasters. In these contexts government, NGOs and other development agencies concentrates more and more on poverty alleviation. Unfortunately, however, severe environmental degradation in Bangladesh, is often lost sight of in the poverty agenda, and should be linked with poverty. Even the recently introduced Poverty Reduction Strategy Paper (PRSP)

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has been criticized for giving less attention towards environment. It is necessary to alleviate poverty keeping environment in mind through proper use of the natural resources. It is also necessary to have ecological balance to make development sustainable and poverty alleviation more effective.

The pertinent issues raised in the present paper are: whether we have learned about the analysis of poverty, and, even more important, about the effects of attempts to reduce poverty have any lessons for the way we approach the analysis of the environmental sustainability? It may, however, be mentioned here that such systematic analysis of environmental phenomena, at least in the social sciences, is only of recent origin.

### **Definition of the Key Concepts**

In this paper three independent concepts are being used as major variables. These are poverty, sustainable development and environment.

#### **Poverty**

The World Bank defines poverty as “the inability to attain a minimal standard of living” (World Bank, 1990:26). Poverty is generally defined in the following two ways: 1. lack of “means” in relation to “needs” and 2. lack of “means” in relation to “means” (Sen, 1999:12).

Sociologists distinguish between relative and absolute poverty. Absolute poverty occurs when people fail to receive sufficient resources to support a minimum of physical health and efficiency, often expressed in terms of calories or nutritional levels. Relative poverty is defined by the general standards of living in different societies and what is culturally defined as being poor rather than some absolute level of deprivation. When poverty is defined relatively, by reference to the living standards enjoyed by the bulk of a population, poverty levels vary between societies and within societies over time (The penguin dictionary of Sociology, 1994:328). Poverty is a complex problem and is product, at least, in part, of political process and policy development. As such it is also a political and a moral concept, which calls for political action. Poverty is thus not the same as inequality although the two concepts are interrelated.

#### **Sustainable Development**

The idea of sustainable development has attracted both developed and developing world with very different interests. Now-a-days, the term ‘sustainable development’ is used over a wide range of affairs from the world of commerce to the realm of social and human welfare in both developed and developing countries. The questions often asked are: “to what extent is to be sustained?” or “how the idea of ‘sustainable development’ be translated into principles on which

practicable and effective policies can be based and which will reverse current unsustainable trends of resource depletion and human oppression in developing world?" (Hossain, 1998).

The idea of "sustainability" received serious attention in the so-called Brundtland Commission Report, 'Our Common Future' (1987). The report defined sustainable development as "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs." Brundtland's way of seeing the ends of sustainability has many attractive features (Sen, 2000:2). In broad terms the concept of sustainable development encompasses: a) help for the very poor because they are left with no other option but to destroy their own environment; b) people centered initiatives are needed; c) human beings are the resources (Tolba, 1987). In fact it is a kind of development that is likely to achieve lasting satisfaction of human needs and improvement of the quality of human life (Allen, 1980).

### **Environment**

It is difficult to define environment. The word 'environment' is a vast one: ranging from microbic action to the size of world population (Nasreen, 2000). Environment has been defined as "the aggregate of all the external conditions and influences affecting the life and development of an organism" (The Webster's New Collegiate Dictionary). The aim then, with either individual organism or communities, is to distinguish between factors arising from outside the system and factors inherent in the system itself. This sounds simple enough, but in practice the distinction between organism and environment is not always easy to make (International Encyclopedia of Social Sciences, 1984:91).

### **Sustainable development: Theoretical Perspective**

Sustainable development first came to prominence in World Conservation Strategy (WCS) in the year 1980. It achieved a new status after the publication of 'North and South: a programme for survival and common crisis' in 1983 (popularly known as Brundtland Commission Report) and 'Our Common Future' in 1987. In June 1992 sustainable development gained greater attention at the United Nations Conference on Environment and Development (UNCED). The last World Summit (August-September, 2002) further emphasized the importance of the issue of sustainability. In Bangladesh, as in many developing countries, the concept 'sustainable development' is a highly discussed topic but very little action is taken on the basis of these discussions.

The definition given by Brundtland Commission, while useful in drawing attention to the concern with the long term implications of present day development, ask as many questions as it answers. What constitutes "needs" and how will these change over time? What reductions in the options

available to future generations? What options are acceptable and what are not? The operational aspects of sustainable development were not answered by the Commission, although the report itself gave strong hints that the environmental degradation resulting from today's economic policies was a major source of concern from a sustainability view point (Markandya, 2001:2). Here we have found serious economic and environmental debates. From economic perspective, some of the earlier contributors (Pearce, Markandya, and Barbier, 1990) suggested sustainable development should imply that no generation in the future would be worst of than the present generation. In other words society should not allow welfare to fall over time. In the last 170 years or so, some OECD countries have achieved a slow rate of economic growth of 1-2 percent per capita annum increase in terms of Gross Domestic Product. (Maddison, 1995). Bangladesh, like many other developing countries, is advocating a high increase of GDP, but the number of landless people is increasing, unfit for the high rate of GDP. According to GOB, 57 percent of rural people are landless and live below poverty line. This is amply demonstrated in the data below.

**Table 1. The Rate of Landless People in Bangladesh**

Year	Landless People(in percent)
1947	14.30
1970	19.80
1975	32.00
1984	46.00
2001	68.8

Source: Islam, 2005

Economists have turned to looking at changes in the stock of wealth, where wealth is defined to include natural, human, physical and social capital (World Bank, 1997). If society's wealth per capita is declining, future generations have to live with less resources with the present level of consumption. Unfortunately it is quite difficult to measure all these forms of capital for any one country and even more difficult to do so in a way that permits comparison across countries (Hamilton and Clemens, 1999 and Hamilton, 2000). To show that the present tendencies in consumption behavior are unsustainable it supplements the idea of sustainable development by indicating that many consumption habits would have to be changed because they would interfere with the requirements of sustainable development (Sen, 2000:6). In the instrumental context, sustainability of consumption can help to illuminate the constraints that operate in pursuing long run development in general and improving sustainable development in particular. Indeed, even the danger of over population can be optimistically viewed. In this context, Bangladesh and other developing countries that have high population could follow the sustainable consumption policy to alleviate poverty to overcome the population problem itself. Sen (2000) further argued that it is

also true that the rate of population has been falling too, and while fertility rates have declined unevenly across the globe, the lessons from the more successful cases can be learned and used in other countries as well. Thus the traditional concept of sustainable development provides some warnings about human capital, natural resources and environment. The modern economic development, on the other hand, that occurred through technological advancement jeopardizes the ecological and economic sustainability. Lopez (1992:74) also refers to both "external" factors and "internal" factors that degrade the environment. Markandya (2001) further refers that per capita economic development degrades the environment and natural resources, a function of population policy changes and changes in institutional arrangement.

A popular line of reasoning among researchers begins by noting that a number of undesirable agriculture related policies have been introduced in the recent past, especially in developing countries. As a consequence of these policies, according to this line of argument, there had been an increased proliferation of environmental degradation causing miseries to the poorer communities. Following this line De Janvry and Garcia (1998) list the proximate causes of environmental degradation by the poor as presented below:

- Soil erosion due to excessive agricultural crop and serial production.
- Semi-proletarianization of the rural population and a collapse of local institutions due to agricultural modernization.
- Degradation of natural resources including forestry as a result of migrants seeking law (Janvry and Garcia, 1998:7).

According to Dasgupta (1995, 1996), 'as common resource management system break down, individuals are more able and willing to make family size decisions that does not take full account of social costs of child rearing with use of common resources treated as a free good' (Dasgupta,1996:8). It may be stated that a "self correcting" mechanism can exist, which implies that institutions evolve so as to respond to a deteriorating rural environment by increasing the level of cooperation over common resources (Markandya, 2001:9). Undoubtedly the most controversial of the internal factors is that of population growth. Many commentators point to the effects of increases in overall population in terms of pressure on land and increase in environmental degradation (Janvry and Garcia, 1988). From the experience of Kenya the colonial policy in the developing world and the load of population could be explained by a number of factors (Tiffen et.al, 1994). The problem is to know how much of this was due to a) the opening of land for all users, b) investment in infrastructure, c) access to non farm employment opportunities, d) technological development that were brought in from outside the region, and e) price incentive for products that were relatively environmentally benign. This inevitably leads to the question as

to whether the reduction of population growth into half lends to consequential change in land that could be more environmentally beneficial.

### **Poverty and development**

Poverty has devastating effects on people's life especially on physical, psychological and economic aspects. Poor people suffer from physical pain that comes with too little food and long hours of work; emotional pain stems from the daily humiliations of dependency and lack of power; and the moral pain comes from being forced to make choices such as to use limited funds to save the life of an ill family member, or to use the same fund to feed children (Narayan, 2002:3). Poverty remains a major challenge for our planet in the new millennium in spite of global efforts for poverty alleviation. The global poverty discourses over the last 30 years have been shaped by meta narratives of high radicalism, a massive head count ritual, a less visible drama of exclusion and an elusive search for program impacts. Poverty has been viewed as "individual deficits", social disadvantages and denial of specific rights or access to minimal resources. Poverty studies have thus mostly focused on the change in such deficits or disadvantages (Islam, 2003:1).

There have been different estimates on the level of poverty in Bangladesh. Poverty studies mainly concentrate on the measurement of poverty and the estimation of its magnitude. For this purpose, two methods are used to estimate poverty line, a) calorie intake and b) cost of basic needs (CBN) method. Two types of poor are distinguished under calorie intake, a) hard core poor; having less than 1,805 kcal per person per day and b) absolute poor; having less than 2,122 kcal per person per day. (GOB, 2001:55).

The CBN method constructs poverty line, which represent the level per capita expenditure at which the members of households can be expected to meet their basic needs, food and non-food. The allowance for non-food consumption yields two poverty lines, a) lower, which incorporates a minimal allowance for non-food goods for those who could just afford the food requirement, and b) upper, which makes a generous allowance for non-food spending for those who just attain the food requirement (GOB, 2001:55-6).

In a study of the Asian Development Bank (1997), urban absolute and hardcore income poverty lines are determined at Taka 3,500 (US\$88 equivalent) and Taka 2,500 (US\$63 equivalent) per household per month respectively. Thus the concept of poverty and its measurement has remained heavily economic and all poverty measurements ultimately boil down to income poverty. Even human development index (HDI) and gender related development index (GDI) have an income component. Thus a cultural construction of poverty has remained in oblivion.

Reducing poverty is the central theme of development dialogue in Bangladesh. According to government statistics poverty has declined in the 1990s, but still it remains at the greatest challenges to the nation. Both the lower and upper poverty lines indicate a statistically significant decline in poverty after 1991-92. The incidence of the very poor declined from 43 percent of the population in 1991-92 to 36 percent in 1995-96; the incidence of the poor declined from 59 to 53 percent. Although poverty has declined in both rural and urban areas, rural poverty is still higher than urban poverty. Reducing the poverty of the very poor in rural areas (which was 40 percent of the rural population in 1995-96), remained a massive challenge. The growing inequality associated with economic growth in Bangladesh does not imply that growth should not be pursued. Rising inequality has reduced the rate of poverty reduction. Over the period 1991-92 to 1995-96, inequality raised the least with agricultural growth, and as a result the net elasticity of poverty with respect to growth was the largest in agriculture. Public expenditures reduced poverty, but their targeting and efficiency requires further improvement. Government programs, such as Food for Education, Vulnerable Group Development, Test Relief, and Rural Maintenance are well targeted. A detailed assessment of Food for Education, the fastest growing program, shows that it raised primary school attendance and is also cost-effective, as measured by its long term impact. The role of NGOs in Bangladesh is unique: vital resource for faster poverty reduction can be achieved by them, but more is to be done to support partnership with Government. Bangladesh is pioneer in innovative NGO programs. The report made by World Bank that was presented as executive summary of the 1998 on Bangladesh poverty assessment. This report is part of a long term process of capacity building and mainstreaming of poverty analysis in Bangladesh. Its findings suggest five pillars of a possible poverty reduction strategy accelerating economic growth, promoting education for the poor particularly primary education, and more specifically for girls; investing in poor areas to take advantage of strong location effects on poverty reduction; improved targeting of public expenditures and safety nets to reach the poor better; and forming further partnerships with NGOs to reach poorest and not-so-poor in ways designed to make a stronger attack on poverty ([www.worldbank.org](http://www.worldbank.org)).

The Nobel laureate economist Amartya Sen has noted that in recent times Bangladesh experienced an unusual sharp reduction in fertility rates. This is associated, it appears, with a variety of factors, including the expansion of family planning opportunities, greater involvement of women in economic activities (for example, through micro-credit movements), and much public discussion on the need to change the prevailing patterns of gender disparity, the greater social and economic role of women in Bangladesh has been widely noted (Sen, 2000:10).

A convenient starting point for a strategy of poverty reduction would be initiated if the multi-dimensional nature of poverty is taken into consideration. Consequently, it would call for sub-

strategies to address four problems: a) lack of economic opportunity, related to low economic growth, the level and distribution of physical assets such as land, human capital and social assets, and market opportunities which determine the returns of these assets b) low human capabilities, related to improvements in health and education indicators, especially among specific socio economic groups. c) low level of security, related to exposure to risk and income shocks, which may arise at the national, local, household or individual level and may be due to natural disasters as well as socio economic factors, and d) lack of empowerment, related to the capacity of poor people to influence state institutions and social processes that shape resource allocations and public policy choices. (Frederick and Zaidi, 2004:1). These are the most common features of Bangladesh poverty alleviation scenario without the notion of environmental concern.

The major portion of the development scenario has been prescribed by the World Bank, IMF and other development agencies as a part of top-down approach, which is obviously not environmental friendly. Here the question of sustainability has been raised to a greater extent.

During the 1970s, when Bangladesh come into existence as an independent nation, many scholars and observers either termed it a baskets case or were worried about its economic viability(Kissinger,1973;Arthur and Nicoll,1975; Khan and Hossain, 1989) But the nation ,since then has made some progress in population control, food self-sufficiency, and innovative community level approach to poverty alleviation and economic and social development, in addition to the restoration of the democratic system of governance (:Khandker et al,1994;World Bank, 1998.)

Most of the Governments of Bangladesh have concentrated on a vigorous countryside program of poverty alleviation. Firstly, fundamentalists may sometimes oppose the poverty alleviation program such as women employment and women emancipation. But the overwhelming majority of the rural people from all walks of life are highly appreciative and supportive off all poverty alleviation programs. Second, making foreign aid available is the key concern of foreign donors in poverty alleviation program, and the availability of simple, cost effective, and modern technologies have made poverty alleviation program a viable proposition. Money and resources themselves, though necessary, are not sufficient for an effective poverty alleviation program, since political and economic inequality distort its actual implementation capacity. Therefore the process is slow in showing progress in poverty alleviation (Amin and Pierre, 2002: 26).

The overall performances of the public sector, the largest leading sector concerned with delivering basic public services in health, education, agriculture and poverty alleviation in rural Bangladesh, is far from satisfactory. Many of these government agencies are inefficient,



ineffective, with no accountability, and therefore, unable to deal with the backlogged and emergency needs of the people.(The World Bank,1998). As Blauner and Wellman (1973) poignantly observe in a not altogether different contexts, the authority of the poor and the powerless to diagnose group problem and interpret culture and lifestyles (Pivots around notion of group self definition and self-determinations [and is] central to the consciousness of the racially oppressed. This means that the rural poor of Bangladesh must be treated as subjects and not, as it now seems to be the case, objects.

It may, however be mentioned here that many of the NGOs who prefer to practice poverty alleviation, in effect have turned themselves into business organizations which help them to accumulate capital. In fact from the very initial stage of capital formation foreign assistance played a dominant part and thereby raises questions as to their bonafide in proposed aim of alleviating poverty.

### **Environment and Poverty Reduction Strategy Paper**

Being directed by IMF and the World Bank, Government of Bangladesh has finally produced the Poverty Reduction Strategy Paper (PRSP) in October 2005<sup>3</sup>. Although Government declared that the PRSP has been finalized in a participatory way, many believe that such participation was restricted to bureaucratic dependency. The non-participation of politicians in the process has been identified as one of the major weaknesses. Because poverty has been identified as a political issue, the non-participation of political leaders and of people in finalizing PRSP makes Government's good wills questionable. However, the discussion on environment in the PRSP has been done under the 'Supporting Strategy IV: Caring for the Environment and Sustainable Development'. PRSP has been emphasized on the achievements in reducing poverty and way forward through different activities.

The issues included in PRSP on environment are: Conservation of Nature, Agricultural Land Degradation and Salinity, Biodiversity, Public Commons (resources), Rural Energy and Afforestation (including tree plantation) and Urbanization Related Environmental Issues. To combat pollution PRSP also included discussion on air pollution, water pollution, rural water and arsenic pollution, noise pollution and International aspects of environment. Some policy agendas for 2005-2007 have been identified in the strategy paper such as ensuring sustainable employment for the poor, coordinating among all the policy and planning related to environment, emphasizing the environmental analysis while planning and implementing projects and focusing on achieving main goals such as increasing the opportunities of poor for production, collection of

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<sup>3</sup> Unlocking the Potential: National Strategy for Accelerate Poverty Reduction, General Economic Division Planning Commission, GoB, 2005.

natural resources to improve health and nutrition, increasing access of poor to common resources and increasing the participation of poor in forest resource management. The processes of implementing such strategic goals have already been started through projects under NEMAP and SEMP.

Implementing Act for saving environment, proper utilization of environmental law, decreasing deforestation, saving bio-diversity, controlling air pollution, improving the waste management system, improving the livelihood and environment of slum dwellers, mainstreaming environmental issues with other relevant policies, activities and projects are the other aims of PRSP related to environment. Some process and policy agendas have already been taken to achieve such goals.

However, whatever hope PRSP raises, there are limitations regarding its discussion on environment. For example, by the name of saving biodiversity such areas were identified (be it Sundarban or Hakaluki haor or Gulshan-Baridhara), where many of the poor people live and maintain their sustenance. PRSP does not provide any suggestion regarding the alternative for their sustenance or ensuring their participation in the process. The possibility of poor people's access to village common property resources is hardly possible as either there is no common resource in rural areas or the poor do not have access to it.

Although the discussion on environment in PRSP has been included as a supporting strategy, it has included 'social forestry' under the major strategic block. However, there is no clear direction in PRSP on various debatable issues related to forestry such as the negative impacts of foreign tree species on environment, Eco-park etc. Increasing the intensity of cyclone and rising of sea level as a result of global climate change also did not receive due attention in the PRSP.

There are some highlights on the water management in the strategy paper which includes the limitations of using underground water or encouraging using surface water. However, the increasing marketing system of water and people's continuous dependency on bottled water have been ignored by the PRSP. Moreover, the problem of arsenic contamination in groundwater, one of the major concerns of most people in Bangladesh, has not received proper attention and is restricted to three sentences only.

The discussion on rural energy resources in PRSP did not provide any specific direction on how to encourage people to use renewable energy through reducing dependency on non-renewable energy. The participation and access of the poor to alternative techniques of energy use has not been elaborately discussed. Moreover, PRSP did not give importance to implementing the renewable energy policy 2002 of GoB, where the use of biomass, hydro electric power, and solar energy has been emphasized.

Finally, PRSP ignored the international context of environmental problems. In many occasions poor people are blamed as the polluters of environment, which should not be accepted. This is because the degradation in the environment is done more by the industrialized countries than the poor/non-industrialized countries. There is no such discussion in the PRSP. Moreover the reservation of rich countries in implementing the Quito protocol and regional problems, such as planning of river linking project, constructing Tipaimukh or other barrages by India, have not been mentioned<sup>4</sup>.

### **Environment and economic development**

Economic development should help reduce poverty and improve the environment. But the unplanned development activities contribute to severe environmental degradation in developing countries. A significant problem in environmental regulation in developing countries arises from difficulties in controlling small scale enterprises, because of their limited financial and human resources, and low-level of technology. (Markandya, 2000:12). The vulnerable are often the users of marginal resources and also dependent on the common resources of the community in which they live. (Dasgupta, 2001:10). Hence it is these groups that are most impacted when deforestation, soil erosion and other negative incidence occur, often as a result of natural disasters. (Dasgupta, 2001:10). We can here show a silent feature of infrastructure development activities such as construction of roads, railways, set-up of modern industrial units, massive industrial plantation, plantation of exotic trees, tea plantation, construction of office buildings, settlement of people in the hilly areas, unplanned and haphazard urban and industrial development process, modern agricultural production system and trade and commerce and business etc. that created tremendous ecological imbalance due to indiscriminate utilization and destruction of natural resources.

Moreover, excessive and indiscriminate use of pesticide and chemical fertilizers have negative externalities as they adversely affect agricultural land as well as environment. Also these chemical pollutants through runoff and seepage contaminated ground and surface water.

The unplanned development activities have a serious negative impact on capturing fisheries due to substantial reductions in flood prone areas, which get inundated regularly. Unplanned intensive tourism causes severe threat to forest and affects the daily life of the local people including *adivasi* community. It also means that it affects our environment.

A gas field was discovered just beside the boundary of the west Bhanugach forest reserve (WBFR), an area of about 10 hector was cleared and fenced off within 100 meters of the forest.

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<sup>4</sup> Nasreen, Mahbuba, PRSP and Environment, *Poribesh* (BAPA Newsletter), 4<sup>th</sup> year, First issue, January-February, 2006.

There a narrow metal road was constructed inside the forest, which has become extremely busy. As a result the whole area has become crowded because of this massive activity. After one and half years of experimentation with digging for gas, the whole gas field exploded. The gas burned for nearly 15 days. This explosion had adverse effects on the wild life and the environment, the only the cause of which was exploitation and not real development activities.

More recently, Government of Bangladesh has taken an initiative to establish a number of eco-parks in Modhupur of Tangail district and CHTs. But it would really have a devastating effect for the indigenous people of the territory. It will uproot hundreds and thousand of *adivasi* people along with the loss of sustainable livelihood for the sub center.

Development, environmental issues and global politics are highly interrelated. Environmental degradation in the developing countries is associated with several factors: urban congestion, industrial pollution, toxic waste disposal problems, sewage pollution, over grazing, denudation of forests and above all political unwillingness. There is increasing pressure on the environment due to activities of farming of marginal lands, gathering fuel wood supplies by the poor for commercial use in towns and for personal consumption, or even exports to the developed world. (Shiva,1992:118). Being at the bottom of the socio-economic structure the poor get the worst of everything including pollution. To these problems of population growth and poverty we can trace almost all our major environmental problems. Various environmental problems are being found in the third world countries due to: 1. a major drawback of the third world countries is that their political process involving environmental issues are not considered relevant data thoughtfully gathered, and these restrains the flexibility needed to move towards achieving specific objectives.2. Absences of consensus on environmental goals leave us with different perceptions of environmental protection. With the limited awareness in these countries "priorities" is a word that carries all diverse economic, political and religious beliefs. 3. The design of law itself is also a problem and very often the people pay without receiving environmental or social benefits of corresponding values. 4. Regulatory agencies are battered from all sides by interest groups and very few bureaucrats are fired if they fail to act appropriately (Shiva, 1992:135-6). Economic growth is not necessarily good. Underdeveloped and effects of development have led to a series of environmental problems in Third world countries which even if local in nature can lead to multifarious effects at the regional and global levels as environment operates in the forum of an integrated system.(Shiva, 1992:126). Developed countries are blaming the Third world countries for environmental degradation. But the 80 percent of global resources are consumed by the developing nations with the consequent harmful environmental degradation. From the eco-political point of view, the top down approach of poverty alleviation caused this ecological imbalance. Governments of the poor countries are not capable of taking the right decision to

protect their environment due to tariff barrier, foreign aid, grants, loans, and the politics of international trade. If the people of the developed world change their consumption pattern, it would balance the ecology and environment of world system.

### **Gender, poverty and sustainable development**

The concept 'gender' is widely used in the development discourse in Bangladesh. In the highly stratified society the relational analysis of gender inequality and development is still far from the desired goal. In Bangladesh poverty is gendered and women are the poorest of the poor. Women face number of problems due to their gender identity.

It is evident that globalization has failed to address the issues of economic and environmental sustainability, particularly in the agricultural and informal sectors. Moreover, globalization tends to increase income inequality between different sectors and groups. The rising tide of Globalization has not lifted all women. The poor, less educated and credit-constraint women may not see most of the benefits of globalization at all. Majority of women are unlikely to benefit from liberalization policies because these programmers do not take account of gender specific impacts (Nasreen, 2004). However, the issues related to gender and sustainable development has been ignored or less emphasized. It is evident that the policies of sustainable development are not gender neutral. It has been emphasized that gender differences and inequalities may influence response to sustainable development and challenges.

### **Environmental degradation: the experience of Bangladesh**

Bangladesh is facing serious environmental degradation due to global warming, ozone layer depletion, unplanned urbanization and arsenic contamination in the ground water. The various aspects of this degradation and its reflection on development agenda are discussed below:

#### **A. Impact of Global Warming**

Over the past 100 years, the broad deltaic region of Bangladesh has warmed by about 0.5 degree centigrade. In the future, Bangladesh may get warmer and wetter. Bangladesh is projected to be 0.5 to 2.0 degree centigrade warmer than today by the year 2030. The best estimate is a 10 to 15% increase in average monsoon rainfall by the year 2030. The possible physical effect from global warming and climatic change pose such threat to Bangladesh that damages to coastal infrastructure could reach as much as 12 per cent of GDP by the year 2010; increased incidence and diseases, increased sea level rise and flooding and other natural

hazards, changes or degradation of eco systems, changes in water supply to urban settlements and changes in cropping patterns and other agricultural activities could result in drop in rice production by as much as 10 per cent. It is estimated that due to the predicted rise in sea levels, the 65 per cent of the population who are currently vulnerable to floods, may increase to more than 90 per cent with the possibilities of about 5 million people being severely affected by inundation.

### **B. Droughts and Aridity**

Among the environmental problems in Bangladesh, land degradation due to aridity and loss of crops due to drought may have caused more human sufferings than any other problem in this region. Drought area covers almost one third of Bangladesh, particularly the north-western part. Evaporation rate in most of these areas is high for more than 7 months than the participation rate. Extraction of ground water for irrigation purpose is not adequately recharged. Consequently the aquifer level of ground water is going down steadily.

### **C. Floods**

Historical trend shows that the country experienced 30 damaging floods between 1954 and 1998, of which 12 were severe and 5 were catastrophic. The occurrence of flood experienced by Bangladesh is deemed to be the worst in the globe, both in terms of duration and damage. Abnormal floods submerge about 60 percent of the land, damage crops, property; disrupt economic activities and cause diseases and loss of life beyond all proportion. (Nasreen, 2004).

### **D. Ozone layer depletion**

Ozone layer protects the earth from potentially damaging doses of ultra violet B radiation. In 1985, the first ozone hole was discovered over Antarctica leading scientists to rush to find the cause of this radiation which is responsible for a wide range of potentially damaging human and animal health effects, primarily related to the skin cancer, eye damage and suspension of the immune system, damage crops and disrupt the marine food chain- all of which forecasts human ecological and economic disasters of global significance.

### **E. Unplanned Urbanization:**

Urban degradation, including urban water and sanitation, solid waste disposal and worsening transport related or vehicular air pollution, make the cities of the country a place for dangerous health hazards. Dhaka, particularly, the capital, a home of 10 million people has been converted into a gas chamber due to emission of huge untreated and poisons gases and identified as one of the least healthy cities in the world. It has been estimated that 25,000 deaths are caused annually from air pollution related health impacts. Unplanned high rise buildings, inadequate drainage and

sewage infrastructure, rural to urban migration leading to mushroom growth of slums, poor transport network as well as mismanagement of traffic and transportation, lack of urban land use control and unplanned industrial activities in residential areas, poor solid waste management and conversion of lakes and open spaces into other uses are some of the factors responsible for unsustainable urban growth.

#### **F. Arsenic contamination in the ground water**

Arsenic contamination of ground water is the upcoming catastrophic disaster for Bangladesh. Officials admitted that some 80 million people, i.e., more than the 65% of the country's population are now at risk of arsenic poisoning. Arsenic affected 61 of the 64 districts where arsenic levels have been found to be above 0.05 mg/liter, the nationally accepted standard in Bangladesh (Nasreen, 2002).

#### **G. Environmental impact of shrimp culture**

Ecological effects of shrimp farming include mangrove conversion into ponds, use of chemicals, artificial food supply in shrimp field leading to water pollution and chemical residue runoff, dumping of pond effluent into water bodies which affect neighboring ecosystems and allowing intrusion of salt water in the shrimp field gradually affects the homestead plants, trees and other vegetations. In addition to having an impact on bio-physical environmental costs, shrimp farming has also a multi dimensional social costs. Expansion of extensive shrimp farming brings more agricultural land under saline water. Shrimp field also encroaches upon mangrove forest land whether legally or illegally. This initiates a process of self destruction by breaking the natural food chain with the destruction of mangroves due to increasing encroachment with consequent multifarious natural disaster.

#### **H. Energy Disaster and Environment**

An immense fire at the Magurchara gas field, caught on 14 June, 1997, from an explosion devastated a large part of the forest and several tea gardens in the gas field vicinity of Sreemongal under Maulovi Bazar district in the eastern part of Bangladesh. The air was filled with the raw smell of burnt trees, gas and soil. Added with it was the order of hydrogen sulfide emitting from the gas well. Many wild animals were suffocated by the poisonous gases. The unprecedented fire, which continued for several months, caused irreparable environmental disasters and hazards in the region. A cluster of forest dwelling *Khasia* population has suffered from eviction, economic, social, cultural and psychological trauma. Moreover, nothing is known about the impact of radio active materials on large number of people and other species.

Again very recently similar disaster in another gas field namely in Tangratila caused even greater hazards both in the environmental, socio-economic as well as human sufferings. This gas field has burnt for couple of months and no instant effective measure was taken by the concerned authority.

The Tengratila gas field, located in Sunamganj, was allotted to Niko Resources, a Canadian company. An explosion in the Tengratila gas field in January 8, 2005, led to 30-40 million cubic feet of gas burning per day. The explosion was heard from miles away and panic-stricken residents fled from their homes. The fire resulted in burning of gas worth 50-60 million dollars. The damage to the soil and ecology may be even greater. Petrobangla blamed the operator, Niko Resources, for not using appropriate equipment and procedures in the drilling process. It was alleged that Niko had not qualified for gas blocks in the 1997 bidding process but was given the gas block outside the regular bidding process, because of its connections. Later, in 2003, it bought Block 9, arguably one of the most prolific gas blocks in Bangladesh, from Chevron Texaco.

Many causes are attributed to the above mishap. In addition to lack of adequate regulations or their enforcement, the government seems to have given exploration contracts to companies with inadequate technical and financial resources. Often these companies have poor safety and environmental records (Nasreen, 2005).

### **I. Tannery waste**

The tannery wastes include liquefied arsenic, solid sodium sulphate, lime, ammonium sulphate, sulphur and formic acid, ban chromium sulphate, fat liquors, preservatives, color pigment and finishing products. These liquid wastes are extremely harmful to aquatic plants and animals. The pollution has its impacts on the aquatic resources too. The fish resources have drastically decreased. Tannery wastes or pollutants contaminated the water used by the dwellers of Dhaka city. Chemical tests have detected heavy metal like copper, aluminum, mercury etc. Laboratory test has detected copper in various fish species cultivated in the water of Buriganga and canals of Dhaka city. Germs that cause jaundice, fever, diarrhoea and other water born diseases had already been found in water.

### **J. Deforestation**

The causes of deforestation in Bangladesh are due to heavy demands for forest products and fuel wood, and conversion of forest land to such other uses as agricultural, industrial, urban



development and of infrastructures for transportation, energy production and so on. According to one estimate, forest cover in Bangladesh has declined from about 15 percent of the total area to 5 per cent (Nasreen and Hossain, 2004). Out of a total area of two million ha of forestland, less than half is covered with trees, the estimated rate of deforestation being 8,000 ha per year. About 40 per cent of forestlands have reportedly been lost from 1960 to 1990. Deforestation rate was 0.9 per cent in 1970, but rose to 2.7 per cent in 1984-90. Some sources quote satellite surveys and note that forests are declining at a rate of nearly 70,000 ha per year and Bangladesh has less than 0.02 ha of forest land per person, one of the lowest forest-man ratios in the world. If the current trend continues, forests are likely to disappear altogether in the next 35-40 years or even earlier. The implication of continued deforestation is that valuable species may disappear forever. The environmental effects of deforestation are soil degradation, flooding, erosion and above all the danger of climate change (Nasreen and Hossain, 2004). In fact, unplanned urbanization and the commercial logging of woods caused severe environmental degradation and ecologically imbalanced situation in Bangladesh.

#### **Sustainability: miracle or myth?**

Sustainable Development as a concept of Brundtland Commission is criticized by many contemporary scholars both in practical and theoretical framework. The eminent economist and noble laureate Amartya Sen (Sen, 2000:4) focused on the following specific issues:

The Brundtland Commission report presented and defended the crucial understanding that sustainability includes an obligation to future generations. But the concept of sustainable development must necessarily include consideration of intergenerational justice which is missing.

The report combined consideration of intergenerational justice with a concern for the poor in each generation, but it ignores issues of inequality and poverty within each generation.

Unlike some earlier statements on environmental preservation, which focused on conserving specific resources "leaving the world as we found it" the commission shifted attention to conserving the ability of each generation of people to meet their respective needs. Sen (2000:4) argued that the relation between resources and outputs could vary with technical progress.

In fact the idea of needs and their fulfillment are in under serious question marks. Because the consumption level is high or low in different territory, it is impossible to put a common idea of sustainability that should be achievable specifically for the poor country. Sen (2004) also specified Brundtland's framework for better modification. With this freedom-oriented modification, we can see sustainable development as development that promotes the capabilities of present people within compromising capabilities of future generations. And it will provide a broad vision

for all concerns. Though the current sustainable development is advocating a new type of development agenda, i.e optimum exploration and consumption of natural resources, unfortunately the high exploitation and high consumption of resources as well as unequal distribution of resources have created some problems that demand more than this type of sustainability.

### **Conclusion**

Environmental issues need to be dealt with the participation of all concerned, with the government and citizens at the relevant levels. This, unfortunately, is almost absent in Bangladesh. Moreover international organizations and multinational corporations most often are pressing the government to adopt unsustainable policy, which cause serious degradation to the environment in developing countries including Bangladesh. Although poverty alleviation in Bangladesh has been considered as necessary, it must be mentioned that unplanned poverty reduction and development strategy becomes less effective and less sustainable. It is true that there is a need to change the pattern of consumption, especially within the upper and middle class people. To this end the government has taken many policies most of which are not favorable to agriculture and environmental development, rather cause deterioration in the environment. There are also development policies which are identified as anti-poor strategy. According to the Environmental Sustainable Index 2001 Report, Bangladesh has been ranked in 99th position. It scored 14 out of 100 countries in reducing vulnerability. A number of criticisms have emerged against conventional sustainable development approach in context of reducing poverty and maintaining sustainability in resource management.

People of Bangladesh are looking for self sufficiency in food production. Food security is peoples fundamental right to determine their access and benefit sharing over their food, agricultural resources that maintain their livelihood. Such an abject state of affairs looks for no debate or definition of the concept related to sustainability, but a real sustainable Bangladesh without poverty and without degradation of natural resources. The nature of interrelationship between poverty, environment and sustainable development is a complex one and all these variables needed to be analyzed from the social, economics, political, cultural and resource management perspectives. In Bangladesh, we have adopted western development model in the context of poverty reduction, population control and sustainable resource management. But this kind of development models has failed to reduce poverty, population growth as well as environmental sustainability in a meaningful way. A number of factors are involved in this failure which includes lack of good governance and political institution, corruption, western development model, unplanned use of natural resources, defective industrialization and urbanization process, social

disparity, exploitation, inequality etc. There is a need for comprehensive strategy to maintain sustainable resources as a means to reduce the poverty.

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**Annex****Bangladesh Macro-Economic Statistics**

	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
GDP (In billion US\$)	31.3	32.0	33.9	37.9	40.7	42.3	44.0	45.7	47.1	47.1
Total Population (In million)	113	114.9	116.9	118.8	120.8	122.6	124.5	126.3	128.1	129.1
GDP per capita (In US\$)	277	279	290	319	337	345	353	362	368	368
Total Public Expenditure (In million US\$)	4,076.0	4,151.8	5,092.5	5,475.1	5,670.9	5,639.3	5,688.5	6,196.4	6,849.5	6,930.0
Revenue Expenditure (In million US\$)	2,083.9	2,164.0	2,277.5	2,524.9	2,867.3	2,880.6	3,130.2	3,445.7	3,617.6	3,800.0
Development Expenditure (In million US\$)	1,483.6	1,607.1	2,197.5	2,517.4	2,416.7	2,550.4	2,391.1	2,565.5	3,025.2	2,940.0
Other Expenditure (In million US\$)	508.5	380.7	620.0	435.3	389.3	208.4	167.2	185.2	208.7	170.0
Total Public Revenue (In million US\$)	2,589.8	2,925.4	3,122.5	3,733.8	3,753.7	4,072.6	4,183.9	4,113.6	3,989.3	4,510.0

Source: UNDP, 2005