

## DISASTERS, POVERTY AND SUSTAINABLE DEVELOPMENT

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## 1. INTRODUCTION

Disaster is an event, natural or man-made, sudden or progressive, which impacts with such severity that the affected community has to respond by taking exceptional measures<sup>1)</sup>. Disasters hamper conservation of natural resources, protection of environment, alleviation of poverty and attainment of sustainable development.

The meeting of basic human needs is global complex phenomena. The poverty line of world population is arbitrary depending on the life-styles and consumption pattern of the affluent section of the society of a particular country. In general the poverty line refers to the income level below which people cannot afford to buy enough food for their families, send children to school, cover cost of medical care, or pay for fuel and rent. The World Bank Report (1992)<sup>2)</sup> has figured out that 1.1 billion people out of 5.5 billion world population is below the poverty line and within next ten years additional 1 billion people will need employment most of them in the developing countries. In USA also, the number of population below the poverty line is increasing alarmingly.

Sustainable Development means to meet the needs of the present generation without compromising the ability of future generations to meet their own needs<sup>3)</sup>.

The interrelationships and interdependencies of disasters, poverty and sustainable development are complex and complicated. They involve further interrelationship between people, resources, environment and development. The impacts of disaster mitigation are reducing poverty and help in attaining sustainable development. The present

paper describes briefly these complexities citing examples of Asian countries in general and Bangladesh in particular. It also suggests some positive strategies in the alleviation of poverty and gives some information on Global Forum on Environment and Poverty (GFEP).

## 2. DISASTERS

Disasters impact globally and do not differentiate the country boundaries. In the last 20 years, the United Nations reports that natural disasters have claimed almost three million lives and have adversely affected more than 800 million people worldwide. Earthquakes, floods, tropical storms (hurricanes, typhoons, cyclones), tornadoes, volcanic eruptions, avalanches, landslides and tsunamis have accounted for most of the deaths<sup>4)</sup>. It may be mentioned that more than 25% of the world's population lives in areas that are at high risk to natural disasters. In many developing countries, the greater part of their populations are highly exposed to these disasters. Economic losses from natural disasters tripled from the 1960s to the 1980s and worsened in the 1990s, reaching over US\$ 100 billion in 1991-1992 alone<sup>5)</sup>.

## 3. POVERTY

The human basic needs could be explained by 3F(Food, Fuels and Fibres) and 4E (Education, Energy/Health, Environment Protection/Shelter/Housing and Entertainment/Recreation). In the developing countries almost one-third of the people are struggling hard for only 2F(Food and Fuels) not to speak of other necessities. On the average 30-40% people of the third world countries are extremely poor not getting daily two square meals regularly, having torn clothes and thatched houses or no shelter. This

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poverty problem is aggravated by disasters and the impact is multi-dimensional. The consequences of disasters are severely felt by the poor compared to the rich section of the society, who could sustain and recover relatively quicker than the poor. The poverty is multiplied by disasters. The resultant effects are: hunger, homelessness, rootless and other related miseries. The strategic planning of poverty alleviation must include the impacts of disasters and quick methods of recovery and restart of normal society life particularly of the poor.

The basic problems of the developing countries are population explosion, poverty and environment degradation. These problems are interrelated and enormous. They have been accumulated over the years through the legacy of the history, industrial revolution and rapid urbanization. The resultant effects are the creation of the developed and developing countries, mostly located in the North and South respectively. Particularly in the developing countries overpopulation is the root cause of poverty which leads to environment degradation. Integrated approach of poverty alleviation, conservation of environment and population control is a prerequisite necessity of the developing countries. Roughly 25% of humankind live in the developed countries and they consume more than 80% of the global resources. The global environment is now threatened due to luxurious life-styles and excessive consumption pattern. The developed world is responsible for 87% of ecological disaster and the share of the developing countries is only 13%<sup>6)</sup>. The global disparity, excessive consumption pattern in the developed countries and mass poverty in the developing countries have resulted ecological imbalance and environment degradation at local, national, regional and global levels.

The majority of rural people in the developing countries are poor and extreme poor, who are incapable of withstanding sustained disasters and become rootless, migrating to the urban cities for livelihood. The push-pull mechanism is active particularly from rural to urban creating slums and squatters in the congested city life with limited facilities. At the beginning of the twentieth century the urban population was only 14% of the total population, it was almost 45% in 1989<sup>7)</sup> and now it is about 50%. Rural-urban migration played the major urban growth with an annual average of over 6% during 1961-91 in Bangladesh. The total urban population in Bangladesh is about 22 million (20% of total

population-110 million) with an annual addition of over 1 million<sup>8)</sup>. During disasters these people are victims of miseries. The net results are the poor people of both rural and urban areas suffer most during disasters.

#### 4. SUSTAINABLE DEVELOPMENT

The basic principles of a sustainable society have been elaborately described in an UNEP Report<sup>9)</sup> as follows:

- Respect and care for the community of life.
- Improve the quality of human life.
- Conserve the Earth's vitality and diversity.
- Minimize the depletion of non-renewable resources.
- Keep within the Earth's carrying capacity.
- Change personal attitudes and practices.
- Enable communities to care for their own environments.
- Provide a national framework for integrating development and conservation.
- Create a global alliance.

#### 5. IMPACTS OF DISASTERS ON POVERTY AND SUSTAINABLE DEVELOPMENT

Disasters enhance poverty and retard the process of attaining sustainable development. Disasters mitigation is the key factors in alleviation of poverty and acceleration of sustainable development. As such, disaster prevention, preparedness and mitigation should be given priority by both structural and nonstructural approaches depending on the country-specific situation. Structural method is costly and adopted mostly by the developed countries. Structural strategies are<sup>4)</sup> :

- Damage and failure protection through engineering design.
- Engineered systems to protect populations from being exposed to events that can cause life loss or property loss. Examples are flood hazard management systems (dams, flood control channels, etc.) developed in Japan.

Non-Structural Strategies applied both in the developing countries as well as in the developed countries are :

- Forecasting, prediction, early warning, etc.
- Insurance
- Land use
- Education and training

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## —Disaster planning.

In spite of structural and non-structural strategies disasters occur and cause damages which are detrimental to both poverty and sustainable development.

#### 6. STRATEGIES FOR DISASTERS MITIGATION, POVERTY ALLEVIATION AND ATTAINMENT OF SUSTAINABLE DEVELOPMENT

The strategies for disasters mitigation, poverty alleviation and attainment of sustainable development need in-depth study and understanding of the country-specific complex situation. The overall strategies should include the following major components:

- Generation of resources and constant source of income to meet the basic needs and creation of job opportunities for both skilled and unskilled workers. This can be achieved by contribution of developed countries for creating job opportunities and other facilities for the people of developing countries.
- National planning in consultance with local people and community and integration of disasters management in the planning process. This integrated approach will help in attaining sustainable development.
- Training, skill formation and human resources development for sectoral activities and disaster management particularly in the developing countries.
- Assurance of 3S(security, self-respect and sustaining freedom) and avoidance of 3D(dependence, deprivation and degradation) for maintaing a sustainable society.
- Cooperation between national and international agencies particularly the North- South.
- Promotion of public opinion in the North for sacrifice in luxurious life-styles and consumption pattern for overall welfare of humankind and preservation of ecosystem and bio-diversity.
- Reduction in militarization cost and enhancement of human welfare cost including creating job opportunities and other facilities for the people of the developing countries.

The implementation of the above components is really a difficult task and needs resources, goodwill, better under-

standing between different group-based and sector-based targets, etc. All will have to work unitedly and concerted efforts are needed within the framework of 3P principles( Problems Identification, Policy and Plans Formulation and Practices i.e. practical and appropriate steps for implementation).

It may be mentioned that the Global Forum on Environment and Poverty(GFEP) with its Secretariat at the Bangladesh Centre for Advanced Studies(BCAS), Dhaka and focal points in different developing countries initiated a Declaration in Rio de Janeiro that "There can be no sustainable development without eradication of poverty" and put forward demand for a Poverty Convention. GFEP identified basic issues in environment and poverty are as follows: poverty eradication, development models, institutions, consumption and population, gender, demilitarization, technology, North-South relations, values and attitudes. These factors need in-depth study and analysis on country-specific and development-oriented approach with emphasis on sharing and caring, solidarity and enhancement of quality of life for all. GFEP are planning for some demonstration projects with avenues of income generation and attempting to eradicate poverty on global basis. GFEP need cooperation of all concerned in their efforts<sup>10</sup>.

#### 7. COMPLEXITIES OF THESE ISSUES

Disasters mitigation, poverty alleviation and attainment of sustainable development are complex in nature. These complexities vary from country to country but general trend is the same. If disaster mitigation can be achieved, there is less stress in obtaining other two. Uncontrolled disasters deteriorate and make difficult to achieve the other two. In case of Bangladesh annual development budget is of the order of US\$ 1.5 to 2 billion whereas the economic loss of one disaster is of the same magnitude ( 1970 cyclone US\$ 1 billion, 1988 flood US\$ 2.4 billion and 1991 cyclone US\$ 1.4 billion). It is estimated that economic loss in Bangladesh from 1947-1991 is of the order of US\$ 25 billion and on the average 5% of national wealth is destroyed annually<sup>11</sup>). Under these conditions how is it possible to alleviate poverty and attain sustainable development? The situation is almost identical in other Asian developing countries.

Strategies mentioned in para 6 is highly academic and is very difficult to implement. One of the best ways to attain the strategies is to spend a part of militarization cost ( say

25%) of the developed countries to the welfare cost including creating job opportunities and other facilities for the people of the developing countries. The funds available could be used for variety of purposes. For example, the gigantic task of creation of job opportunities and other facilities of the people in Bangladesh in non-vulnerable areas so that they could avoid living in vulnerable and high risk zones and save from disasters. Similar activities could be undertaken in other developing countries. Science and technology development, technology transfer and human resources development by imparting training and skill, involvement of people, community preparedness, etc. particularly in the developing countries are possible activities.

### 8. CONCLUSIONS

The present paper has dealt with various aspects of disasters, poverty and sustainable development in the context of developing countries. Strategies for disasters mitigation, poverty alleviation and attainment of sustainable development have been explained. The cooperation of North-South with good will in terms of financial and technology has also been explained. It has been suggested that a part of militarization cost (say 25%) of the developed countries be diverted to the welfare cost of the developing countries. The funds available could be used for disasters mitigation, poverty alleviation and attainment of sustainable development globally.

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### References

- 1) Carter Nick W.: Disaster Management-A Disaster Manager's Handbook, ADB, p. 417, 1991.
- 2) The World Bank Report, 1992.
- 3) Brundtland Commission Report (The World Commission on Environment and Development): Our Common Future, p. 400, 1987.
- 4) Shah, H. C. and T. Katayama: Natural Disaster Risk Management-A Need for a Global Perspective-Seisan-Kenkyu, Vol. 45, No. 3, March 1993.
- 5) Hansen, P.: Yokohama: A New Approach to Disasters and Development, STOP DISASTERS, Number 18, pp. 4-5, Mar-Apr 1994.
- 6) Proc. International Workshop on Environment and Poverty organized by the Global Forum on Environment and Poverty(GFEP) and Bangladesh Centre for Advanced Studies(BCAS), held in Dhaka, Bangladesh, July 22-24, 1993.
- 7) IDNDR Proposals by Japanese Scientists, July 1989.
- 8) Islam, N.: Urbanization, Urban Poverty and the Environment, Proc. International Workshop on Environment and Poverty, Dhaka, July 22-24, 1993.
- 9) UNEP Report, Caring for the Earth-A Learners guide to Sustainable Living - United Nations Environment Programme (UNEP) publications, p. 32. 1992.
- 10) Global Forum on Environment and Poverty(GFEP) Leaflet, 1993.
- 11) Rahman, A. A.: The Context of Disasters and Sustainable Development: The Case Studies of a Growing City and Urban-Rural Linkages in a Developing Country. Paper presented in the World Conference on Natural Disaster Reduction, Yokohama, Japan, May 23-27, 1994.