UNIT 9 SOUTH ASIAN RESPONSE TO ENVIRONMENTAL CONCERNS

Structure

9.1 Introduction
Objectives
9.2 Environmental Concerns and Developing Countries
9.3 Environmental Concerns of South Asia
9.4 South Asian Response to Environmental Concerns
Bangladesh
Bhutan
India
Maldives
Nepal
Pakistan
Sri Lanka
9.5 Governmental Commitment to Environmental Protection
9.6 Summary
9.7 Terminal Questions

9.1 INTRODUCTION

In the preceding unit, we have dealt with the role of multilateral agencies like World Bank and World Trade Organisation in maintaining environmental standards. In the present unit we shall discuss the response of the South Asian countries to environmental concerns. As you know, the South Asian Association for Regional Cooperation (SAARC) comprises as many as seven countries of South Asia, viz., Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka. SAARC is a manifestation of the determination of the people of South Asia to work together towards finding solutions to their common problems in a spirit of friendship, trust and understanding and to create an order based on mutual respect, equity and shared benefits. The primary objective of the Association is the acceleration of the process of economic and social development in member States, through collective action and cooperation.

South Asian countries, like other developing countries, have taken industrial development as the main instrument to accelerate economic growth with a view to provide better quality of life to their people. They have opened their economies to both goods and capital. Globalisation implies different things to different people. Therefore views and perceptions on globalisation differ widely, influenced by the particular vantage point of an individual or a country. Globalisation has affected the South Asian economies from many sides covering production, distribution and institutions. For most South Asians the outcomes of globalisation have been higher prices, fewer employment opportunities, increased disparity in income and higher incidence of poverty. South Asia remains a home for the largest number of poor people in the world (over 520 million). Higher incidence of poverty is expected to contribute negatively to the overall environment of a country or region. The purpose of this unit is to explain the environmental concerns of the South Asian countries and the response of the governments of these countries to meet these challenges.

Objectives

After studying this unit, you should be able to:

- identify the major environmental concerns of the South Asian countries;
- explain the response of the South Asian Societies towards these concerns; and

- discuss the commitment of the South Asian Governments towards protecting the environment in their countries.

9.2 ENVIRONMENTAL CONCERNS AND DEVELOPING COUNTRIES

There is a conventional understanding that environmentalism is a phenomenon peculiar to the rich nations of the North and the citizens of the developing countries do not care about environment. It is contested by not only the people but also the policy makers of the poor countries on many counts. To equate environmentalism exclusively with affluence and to argue that poor societies should become prosperous first before embarking on green movements only reflects the mindset of the western scholars and diplomacy. There is now adequate literature, both theoretical and empirical to the effect that the environmental concerns are as important to the developing world as to the advanced world and there is no trade-off between growth and environment. In fact concerns of environment appear to be more critical to the poorer countries as environmental degradation often intensifies economic deprivation.

However, there are significant environmental differences between the Northern and Southern countries. While the Northern environmentalism has highlighted the significance of value change (the shift in post materialism), southern movements seem to be more strongly rooted in material conflicts, with the claims of economic justice, i.e., the right to natural resources of poor communities being an integral part of green movements. Consequently, these movements work not only for cultural change but also for a change in the production system.

Environmental protection as a struggle is increasingly being understood as a part of democratic struggle to build and consolidate a "new model of citizenship". Efforts to promote environmental rights have brought together numerous segments of the social movement with a basic purpose to provide access to the essential public goods such as water in adequate quantity and sufficient quality to guarantee decent living standards. It is necessary in this context to seek a kind of development that is not limited to preserving the supply and prices of resources as productive inputs.

Majority of the people in the Third world including those in South Asia, are not interested in a development that pretends to be sustainable simply by technically reconverting productive systems that adopt a capitalist rationale in the use of natural resources. It is therefore necessary to change the determinant logic of development to ensure that the environmental variable be incorporated as a component of the people's living and working conditions. This change depends basically on the democratisation of political processes. This may be appropriately summarised as follows: "To democratise control over natural resources, to deprivatise an environment that is common to society and nations, to introduce democracy into environmental administration, and to ensure the public character of common natural patrimony constituting the agenda of issues."

Demands for environmental quality in a society depend on a set of complex factors. In a way these factors shape people's preferences and governmental priorities. The most important of these factors is per capita income. The evolution of environmental awareness of a region depends on political and economic influences covering both domestic and international dimensions. However, in a developing region like South Asia, the international developments probably will influence more significantly the perceptions of policy makers and industrialists.

International events like the first UN Conference on the environment at Stockholm in 1972, and the second conference (on environment and development) at Rio de Janeiro in 1992, have helped to focus governments' attention and efforts on environmental problems. Similarly, the Brundtland Commission Report (WCED, 1987) has served to legitimise the concept of sustainable development and place it in the mainstream of policy debates. International donors have also become far more sensitive to the environmental impacts of their assistance programmes in recent years – a sensitivity, which in turn, has spilled over to the aid of recipients.

SAQ 1

Outline the major concerns of developing countries in relation to environment and development.

9.3 ENVIRONMENTAL CONCERNS OF SOUTH ASIA

Many political observers feel that contemporary South Asia is highly vulnerable to violent conflicts. They also argue that this vulnerability will be amplified because of population growth and environmental changes. Most of the South Asian countries suffer from resource scarcity; the scarcity of common property resources like water is clearly evident in these countries (see Fig.9.1).

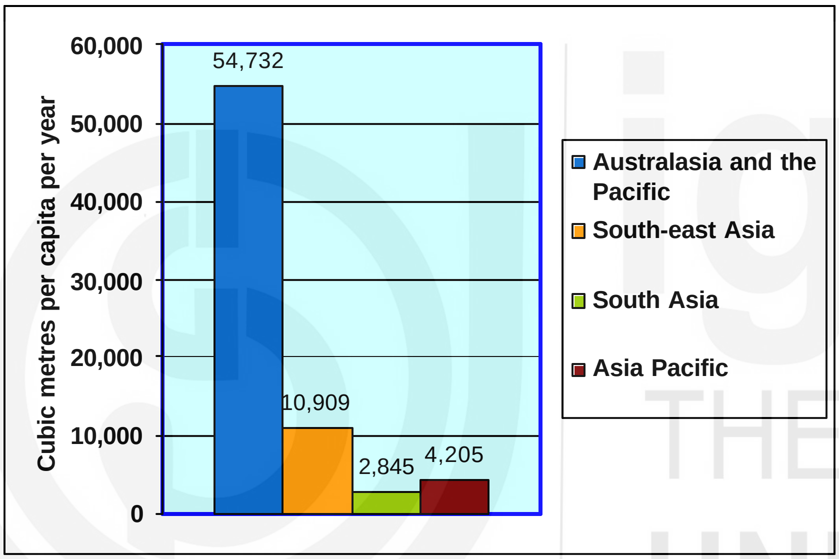


Fig.9.1: Renewable fresh water resources (**Source**: data compiled by UNEP GRID Geneva from WRI, UNEP, UNDP and WB 1998)

Environmental scarcity can contribute to civil violence including insurgency and ethnic clashes. Resource scarcity is the product of three factors: a) insufficient supply, b) too much demand, and c) an unequal distribution of a resource that forces some section of a society into a condition of deprivation.

The three sources of scarcity are explained by: (a) population growth, (b) economic development, and (c) pollution. These three variables interact in several ways to make resource scarcity and environmental degradation more serious. For example, rapid population growth increases demand for one group to seize control of a natural resource such as farm land, forcing another group onto an economically marginal landscape. This increased scarcity of natural resources contributed largely by the growing demand consequent to rapid growth of population will drive soc ieties towards negative social effects such as health problems, social segmentation and decline in agricultural and economic productivity.

South Asia is in the midst of this environmental crisis, which is described by the western media as the neo-Malthusian conflict thesis. In a region of about 1.5 billion population a rate of growth of population at 2 percent with a low per capita income around $ 400 will make matters worse for the region. As the population of South Asia grows, its environment deteriorates and with intensified inequalities the situation in the region appears to be unsettling. However, it must be maintained that it is not beyond remedy. Thus issues of environment related resource scarcity and management have emerged as matters of grave concern.

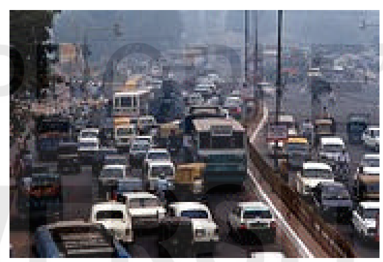
A matter of grave concern for South is the distribution of population across different countries and regions. The settlement pattern in South Asia is non-uniform. Population density is very high in areas where land is arable and irrigated. Population is particularly crowded into the sharp band that runs east from the Pakistan side of Punjab across northern India and Nepal and into Bangladesh. With the increase in population level, competition for water has been increasing and contributing to the degradation of both soil and water resources due to pressures on their use. South Asian region has lowest precipitation. It should be noted that rainfall variability will be highest where precipitation levels are low. Consequently South Asia has been the region with severe droughts and occasional floods.

Demographic and economic trends in South Asia have also been showing significant shifts in the energy-use patterns having profound environmental consequences. During the three decades beginning with 1971, South Asia did not show any increase in per capita renewable energy consumption. In contrast, the non-renewable energy consumption has increased significantly. There is high "income elasticity of demand" for modern energy sources, particularly electric power produced with fossil fuels. There are several reasons for this state of affairs.

a) Renewable fuels are becoming increasingly scarce.

b) Urbanization and rising incomes are leading to energy intensive lifestyles.

c) The region has reached a stage in its development in which large numbers of people will switch from using traditional fuels (wood, dung, etc.) to modern fuels.



Asian Brown Cloud: According to the UNEP Report, a vast blanket of smog has been documented over much of Asia and the Indian Ocean, with serious implications for the global climate, regional weather patterns, agricultural crops and economic progress. The responsible factors include burning agricultural wastes, forest fires, industries, emissions from inefficient cookers and use of cooking fuels like kerosene and cow dung. This has resulted in the formation of a thick haze over much of Asia. The cloud, which is 2 miles in depth, is blocking solar energy from reaching the earth's surface by as much as 15%. It is cooling the surface of the earth while heating the lower atmosphere, consequently altering the seasonal monsoon patterns.

This has altered the weather pattern resulting in the reduction of rainfall across north-western Asia and a rise in rainfall across Asia's eastern coast, droughts in Pakistan and north-western India, and floods in the north-eastern states of Nepal and Bangladesh. Even when rain falls regularly, it is acidic and foul sewer back-ups evaporate into a thin dust that fills the air. This dust contributes to the mass of acids, aerosols, and other particles that make up the cloud and fill the air that millions breathe each day. This pollution claims 2 million lives a year in India and has resulted in high incidents of death due to respiratory diseases in Afghanistan, Bangladesh, Nepal, Pakistan, Bhutan, Maldives and Sri Lanka.

Although the issue was discussed by the delegates at the World Summit for Sustainable Development, Johannesburg, 2002, few measures were taken to rectify the problem. Scientists and researchers are yet to ascertain the implications of this pollution on global warming and the rest of the world but unattended, the long term repercussions are likely to be irreversible.

Source: *http:// www.meltmagazine.com/18_2002/page2.htm*

As the population of South Asia overtakes the 1.5 billion mark and marches towards 2 billion, its environment must be understood and managed in fundamentally new ways taking into account the resource base and the future demand for resources. The environment must be managed as an essentially man made space irrespective of its qualification, 'green', blue or brown. Natural resource management in South Asia cannot be separated from the trajectory of industry, urban and rural incomes, productivity, trade, technology and governance. This is a challenging task to the Regions' environmental and economic policies and institutions. We present below the response of each of the South Asian countries towards environmental concerns under governmental, non-governmental institutions and environmental initiatives.

9.4 SOUTH ASIAN RESPONSE TO ENVIRONMENTAL CONCERNS

We will now discuss the environmental concerns country wise in the South Asian region.

9.4.1 Bangladesh

Governmental Organisations

The Department of Environment was created in 1989 to ensure sustainable development and to conserve and manage the environment of Bangladesh. Bangladesh Fisheries Research Institute has a mandate to carry out basic and adaptive research for development and optimum utilisation of all living aquatic resources and coordinate fisheries research activities in Bangladesh.

Bangladesh Meteorological Department (BMD) is responsible for all official meteorological activities in the country.

Flood Forecasting and Warning Centre operates a Flood Information Centre as a focal point for disaster management for cyclones and floods.

Non-Governmental Organisations

Bangladesh Center for Advanced Studies (BCAS) is an independent non-profit, non-government policy research and implementation institute working on sustainable development (SD) at local, national, regional and global levels.

Bangladesh Unnayan Parishad (BUP) is a non-profit organisation devoted to the promotion of basic as well as action research on socio-economic development and environment.

Bangladesh Environment Network (BEN) works to gather and disseminate information about environmental degradation in Bangladesh, establish and strengthen connection among various environmental organisations in Bangladesh, formulate various policies that can be adopted to solve and avoid environmental problems in Bangladesh.

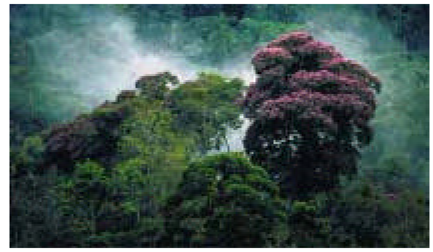
The Centre for Environmental and Geographic Information Services (CEGIS) is an organisation for integrated environmental analysis using geographic information system and remote sensing, information technology and databases. Its activities are inter-disciplinary that address sectors such as water resources, agriculture, fisheries, environment, engineering, and transportation.

Environmental Organisations/Initiatives

UNDP Energy and Environment in Bangladesh

In Bangladesh, UNDP helps strengthen the capacity to address challenges at global, national and community levels by seeking out and sharing best practices, providing innovative policy advice and linking partners through pilot projects that help poor people build sustainable livelihoods.

Conservation of Forests in Bangladesh



Part of the tropical forests in Bangladesh is in the southwestern Sunderbans region. This area is home to the world's sole genetically viable population of Bengal tigers, a total of only 400. As one of the largest mangrove forests in the world, the Sunderbans are also designated wetlands of internationally recognised importance (The Ramsar Convention). According to a recent estimate, total forest land in Bangladesh is about 2.6 million hectares or 18% of the land surface of the country. It is broadly categorised as state forest land (2.2 million hectares) and private forest land (0.4 million hectares). Of the state forest land 1.3 million hectares of natural forests and plantations are under the jurisdiction of the Forest Department (FD) in the Ministry of Forest and Environment (MOFE).

Under the management of Forest Department the main three types of forests are: (a)Tropical evergreen or semi evergreen forest (640,000 hectares) in the eastern districts of Chittagong, Cox's Bazar, Sylhet, and the Chittagong Hill Tracts region (hill forest) (b)Moist or dry deciduous forest also known as sal (Shorea robusta) forest (122,000 hectares) located mainly in central plains and the freshwater areas in the northeast region; and (c)Tidal mangrove forests along the coasts (520,000 hectares) the Sundarbans in the Southwest of the Khulna and other mangroves in the Chittagong and Noakhali coastal belt.

Source: *http://www.bcas.net/Env.Features/Biodiversity/*

IUCN Wetlands and Water Resources Program in Bangladesh

The aim of the project is to restore degraded wetlands and promote sustainable development to enhance biodiversity and the quality of life (especially of women). The project encourages local participation in the establishment of management plans.

9.4.2 Bhutan

Governmental Organisations

Department of Geology and Mines

The Department's activities include geological mapping, exploring mineral resources, providing engineering, geological services and ensuring environmentally friendly exploitation of economic mineral resources.

National Environment Commission (NEC) serves as an environmental adviser to the government on matters related to sustainable development.

Non-Governmental Organisations

Solar Electric Light Fund (SELF) is a non-profit charitable organisation started in 1990 to promote, develop, and facilitate solar rural electrification and energy self sufficiency in developing countries.

Bhutan Trust Fund for Environmental Conservation is an independent grant-making organisation that uses its annual investment income to finance conservation activities.

Environmental Organisations/Initiatives

In Bhutan, the foundation of UNDP's work is to ensure that progress is based on people – on their needs, their efforts and their rights.

Tiger Conservation Units in Bhutan: Bhutan initiated the Tiger Conservation Enhancement Project and has invested in two tiger conservation units (TCU) in the region, the Manas (Bhutan)/Namdapha TCU and the Sunderbans TCU. Bhutan's population growth rate is one of the highest in the world and has resulted in an enormous dependence on the environmental and habitat resources. Unless environmental protection is ensured, Bhutan's wildlife habitat, along with Bhutan's tigers, will disappear. Bhutan provides a contiguous natural space, encompassing an altitudinal continuum from the foothills in the south (100 meters) to the alpine forests in the north (4200 meters), an ideal habitat for tigers. Moreover, the kingdom's largely Buddhist population associates tigers with religious deities. The Royal government formed a partnership with WWF to develop a national tiger conservation strategy. The project has since helped address the public's lack of awareness regarding the need for tiger conservation. It has been instrumental in building stakeholder capacity and capability as well as a base for an information gathering and monitoring system.

Source: *http://www.5tigers.org/STF/Reports/Bhutan/*

9.4.3 India

Governmental Organisations

The Ministry of Environment and Forests is the nodal agency of the central government for planning, co-ordination and overseeing of environmental and forestry programmes.

Ministry of Water Resources has a nodal role in all matters concerning India's water resources. Ministry of Non-Conventional Energy sources has a mandate to cover the entire renewable energy sector, including solar, wind, hydro, biomass, geothermal and tidal energy sources.

The Department of Biotechnology, Geological survey of India and the National Institute of Oceanography are involved in dealing with the matters related to seismology, and understanding of the seas in relation to sustainability of the environment.

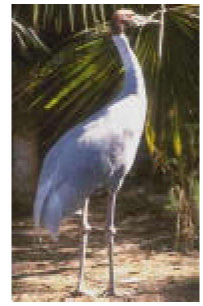
Central Pollution Control Board (CPCB) was constituted in September 1974 to serve as a field formation and provide technical services to the Ministry of Environment and Forests.

Non-Governmental Organisations

Indian Institute of Forest Management is a sectoral management institute which constantly endeavours to evolve knowledge useful for the managers in the area of Forest, Environment and Natural Resources Management and allied sectors.

Wildlife Institute of India (WII): The prime concern of the Institute is to build capacity and develop skills for providing solutions to problems of wildlife conservation in general and protected area management in particular.

Wildlife Protection Society of India (WPSI) was formed in order to bring a new focus to the task of tackling India's growing wildlife crisis. In particular, WPSI aims to provide additional support and information to combat the escalating illegal wildlife trade. **Wildlife Trust of India (WTI)** is a non-profit conservation organisation committed to urgent action to prevent the destruction of India's wildlife.



Keoladeo National Park : The marshes of Keoladeo, more popularly known as Bharatpur, was originally a private hunting reserve of the Maharajas of Bharatpur and the wetland paradise is entirely man-made. It was developed in the late 19th century by creating small dams and bunds in an area of natural depression to collect rainwater and by feeding it with an irrigation canal. With the listing of Bharatpur as a World Heritage Natural Sight, its conservation status has increased significantly in the international arena. Two-thirds of the park lies under water, the extent and volume depending on the intensity of the rains. The remaining one-third of the park is covered in dry deciduous forests (with Acacia, Ber, Kadam and Khajur trees) and extensive grasslands. On the raised ground outlining the wetlands grow a profusion of Acacia trees, where the resident water birds nest, often in large mixed colonies. Keoladeo is famous as one of Asia's finest birding areas, with over 380 resident and migrant species, including the Common, Demoiselle and the rare Siberian Cranes. The park derives its name from the temple of Keoladeo (Shiva) and 'ghana' which locally means dense, implying the nature of the vegetation. The park supports a population of 375 species of birds, numerous mammals and reptiles. With the onset of winter, there is a large inflow of migratory birds from all over world. They include Coot Snipes, Spanish Sparrow, Red Crested Porhard, Rosy Pelican and Flamingo. The rare Siberian Crane attracts the maximum attention. Ghana has a bewildering variety of flora representing 64 families, 181 genera and 227 subspecies.

Among the ducks, geese and wader species that come to Bharatpur are Gadwal, Wigeon, Shoveller, Garganey, Marbled, Common, Falcated and Whistling Teals, as well as the Red-crested, Common and White-eyed Pochards. The Greylag and Bare-headed Geese appear in large numbers and Waders include species of Plover, Sandpiper and Snipe. Two species of Pelicans, the Rosy and Dalmatian, join the Grey Pelicans. Besides the waterfowl, there are many terrestrial migrant species. Warblers, Pipits, Wagtails and Buntings are also winter visitors. Bharatpur is also a home to a large variety of animals like the Sambar, Bluebull, Chital, Nilgai, Blackbuck, Golden Jackal, Rhesus Monkey, Porcupine, Wild boar, Leopard Cats and Fishing Cats, Otters, Hares, Mongoose, Indian and common Palm Civet, Striped Hyenas and Foxes.

The National Wetland Management Committee has identified 16 wetlands for conservation and preparation of management action plans. The plans include survey and demarcation, weed control, soil conservation, control of siltation and creation of public awareness. All this certainly augurs well for Bharatpur and the continued preservation of its splendid birdlife.

Source: *http://www.cranes.org/Bharatpur.htm*

Centre for Science and Environment (CSE) was established in 1980 by a group of engineers, scientists, journalists and environmentalists to increase public awareness of vital issues of science, technology, environment and development.

India Environmental Society (IES) has been set up to increase consciousness and knowledge about the environment, including the major environmental problems facing the world today.

World Wildlife Fund (WWF) India

Its mission is the promotion of nature conservation and environmental protection as a basis for sustainable and equitable development.

Environment Protection Training and Research Institute (EPTRI)

The main objective of EPTRI is to provide training, consultancy, applied research services and advocacy in the area of environment protection to industry, regulatory bodies, Government and NGOs

National Environmental Engineering Research Institute (NEERI)

The mission of the NEERI is to dedicate itself to the service of mankind by providing innovative and effective solutions to environmental and natural resource problems. It strives to enable individuals and organisations to achieve productive and sustainable use of natural resources on which all life and human activity depends.

SAQ 2

What other governmental or non-governmental initiatives do you know of in your country to protect the environment and highlight environmental issues? Describe the activities of one of them.

9.4.4 Maldives

Governmental Organisations

Environment Maldives

This website is intended to disseminate information on the environment and the Environment Section of the Ministry of Home Affairs, Housing and Environment of Maldives.

Ministry of Fisheries, Agriculture and Marine Resources has the mandate for sustainable management and development of fisheries, agriculture and marine resources of the nation.

Ministry of Communication, Science and Technology (MCST) was established in November 1998 for the purpose of developing and strengthening the country's science and technology infrastructure for the betterment of peoples' lives by improving economic productivity, personal health and environmental quality.

Ihuru Barnacle Project: In the Maldives, reef regeneration programmes played a vital role in environmental conservation, as high water temperatures catastrophically damaged the Maldivian coral reefs in 1998. The corals were deprived of life-giving nutrients and turned stark white, which the scientists termed as "bleaching". It was reported that around 70% of corals were bleached, with about 80% of Acropora communities dead. Within two weeks, the coral holocaust wiped out a century of coral growth.

Coral transplantation has aided in the recovery process on the reefs at Banyan Tree Maldives Vabbinfaru and Angsana Maldives Ihuru. The impact of Ihuru's Barnacle Project reaped significant results and received international recognition in 1998 when it was conferred the 'Theodore M. Sperry Award' by the Society for Ecological Restoration, a highly esteemed accolade in the field of environmental conservation. Corals are transplanted by hand onto a man-made barnacle steel structure immersed in some 20 feet of seawater. To speed up coral growth the barnacle is electrically charged with a safe low-voltage current, which is powered by solar cells. This technology contributed immensely to Ihuru's reef restoration efforts and enhanced the biodiversity of the underwater world by attracting more species of marine life like reef fish, nudibranchs (or sea slugs), sea turtles and even the endangered Napoleon Wrasse fish to its thriving marine habitat.

It was observed that the Barnacle has greatly accelerated the rate of coral growth. The increased growth rates was found in species such as Montipora, Favia and Porites, and also in massive corals like the Acropora (Staghorn Coral), which take longer time to cultivate.

Source: *http://www.innermaldives.com/ihurubp.html*

Environmental Organisations/Initiatives

UNDP Office in Maldives

The Maldivian Government and the UNDP have collaborated in furthering people-centred development and building partnerships with island communities to fight poverty. UNDP has undertaken numerous projects thereby providing increased employment, environmental friendliness, and empowerment of people and equity.

9.4.5 Nepal

Governmental Organisations

Ministry of Population and Environment (MOPE) is responsible for formulating and implementing policies, plans land programmes; preparing Acts, Regulation and Guidelines; conducting surveys; studies and research; disseminating information and carrying out publicity; monitoring and evaluating programmes; developing human resources; and acting as a national and international focal point in the domain of population and environment.

Ministry of Forests and Soil Conservation oversees issues related to forests and soil conservation in Nepal. It also serves as Nepal's CBD National Focal Point.

Ministry of Science and Technology (MOST) has a mandate to create conducive environment for the adequate development of science and technology and to make necessary arrangements for its effective application in the task of national development.

Department of National Parks and Wildlife Conservation works to conserve the country's major representative ecosystems, unique natural and cultural heritage and give protection to the valuable and endangered wildlife species.

Conservation in Nepal

The National Parks and Wildlife Conservation Act was implemented in Nepal in 1973, and its amendment in 1993 has provided for the involvement of local people in species conservation. Buffer zone management was introduced in 1996 with the Buffer Zone Management Rules which allow local people to access ecosystem resources in protected zones. Under the Forest Act 1992, 13 plant species have been protected. The government has also given legal protection status to 26 species of mammals, 9 species of birds and 3 species of reptiles. A total of 17 protected areas (eight national parks, four wildlife reserves, one hunting reserve and four conservation areas) constitute about 17 percent of the total area in the country.

Source: *http://www.grida.no/geo/geo3/*

Non-Governmental Organisations

King Mahendra Trust for Nature Conservation (KMTNC) has a mission to promote, conserve and manage nature in all its diversity balancing human needs with the environment on a sustainable basis for posterity - ensuring maximum community participation with due cognizance of the linkages between economies, environment and ethics through a process in which people are the principal actors and also the beneficiaries.

Environment and Pubic Health Organisation (ENPHO) is an autonomous non-governmental, non-profit research-based organisation established in 1990. The vision of ENPHO is research, development and dissemination for action.

Alternative Energy Promotion Centre (AEPC) is an institution recognised as a regional/international example for the promotion of large-scale use of renewable energy and a national focal point for resource mobilisation.

Centre for Environment Education Nepal (CEEN) works to bring awareness about environmental problems to the young and old, students and the public at large and to suggest new ideas.

Clean Energy Nepal (CEN) is a non-profit group that conducts research-based public education and advocacy campaigns to promote sustainable energy use and environmental conservation, particularly in the Kathmandu Valley.

Lotus Energy: Lotus Energy is a Nepal-based company, which manufactures and installs renewable energy technologies. Specializing in solar energy, Lotus provides remote lighting systems for villages as well as power for water pumps, vaccination fridges and water purification systems.

Society of Population &Environment Journalist Nepal (SOPEJ-Nepal) is a non-profitable, non-political, non-partisan & liberal organisation, established in 1995 is tirelessly working to raise awareness in the field of population management and environment deterioration check among the general public in the national interest.

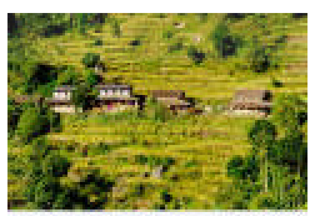
Forum for Environmental Management and Research – Nepal aims to assist in the conservation and promotion of Nepal's biological diversity, ecology, physical environment, traditional indigenous knowledge and human welfare, from the adverse impacts arising due to unsustainable development and lack of appropriate and visionary management of the environment.

Environmental Organisations/Initiatives

International Centre for Integrated Mountain Development (ICEVIOD) works to promote the development of economically and environmentally sound mountain ecosystems and to improve the living standards of mountain populations in the Hindu Kush Himalayan region.

UNDP - Nepal Energy and Environment is dedicated to balancing the conservation of nature in Nepal with the needs of local people subsistence.

Environment Programme Sector Support (ESPS) started with the assistance of the Danish development agency DANIDA, which has been strengthening the urban environmental management capacity in Nepal. It supports prevention, minimization, land control of pollution emanating from industrial and urban development without hampering the development and economic growth.



The Makalu-Barun Conservation Area: The Makalu-Barun National Park and Conservation Area, officially established in 1992 through The Mountain Institute's initiative, is an innovative conservation model that integrates protected area management and community development. From tropical forests along the Arun River to icy mountain summits, Nepal's Makalu-Barun National Park and Conservation Area, covering 2,330 sq. km. is the only protected area on earth with an elevation gain of 8000 m. Recognised for its tremendous diversity of plants, animals, and people, the area contains 25 species of rhododendron, 47 types of orchids, and 56 rare or endangered plants. Red panda, musk deer, wild boar, snow leopard, and the peregrine falcon are among the wildlife found here. Through participatory approaches, the programme is promoting community-based conservation and enterprise development that build upon local indigenous knowledge and cultural traditions.

Source: *http://www.mountain.org/work/himalayas/makalu-barun.cfm*

9.4.6 Pakistan

Governmental Organisations

Ministry of Environment, Local Government and Rural Development:

The charter of the Ministry includes environmental planning, pollution abatement and mitigation, ecology, housing, physical planning and human settlements, including urban water supply, sewerage and drainage.

Pakistan Environment Protection Agency (PAK-EPA) provides protection, conservation, rehabilitation and improvement of the environment, for the prevention and control of pollution, and promotion of sustainable development.

Pakistan Forest Institute is the premier institution of the country conducting research and training in forestry.

Geological Survey of Pakistan (GSP) has a mission to develop, interpret and provide geological information about the country in all its pertinent details that may lead to the prudent management of its natural resources and contribute to the well being and prosperity of its people.

Non-Governmental Organisations

Aga Khan Foundation (AKDN) is a group of development agencies working in health, education, culture and rural and economic development, primarily in Asia and Africa.

LEAD Pakistan International was established in 1991 by the Rockefeller Foundation. The goal of this independent, non-profit organisation is to foster a global network of future decision-makers that would facilitate environmentally sustainable and socially equitable use of the earth's resources.

Conservation of wetlands in Pakistan: Pakistan's wetlands and their rich biological resources are threatened by over-exploitation, habitat destruction and polluted environments. The main causes underlying degradation of wetlands are ineffective management, poor stakeholder participation and coordination in management strategies. Wetlands cover approximately 9.7% or 7,800,000 ha (7,800 sq km) of the total area of Pakistan. The country has a great variety of wetlands, both man made and natural. Ucchali complex, which is a combination of three wetlands namely Khabbeki, Ucchali and Jhalar Lakes within the Salt Range, is a model wetland, where communities are involved in the various protection and management measures. An information centre has been established there to conduct awareness raising activities for target groups and the general public. Many awareness raising activities on the importance and proper use of wetlands and their resources were held as a step towards conserving the prized resources.

Source: *http://wwfpak.org/freshwater.php*

Environmental Organisations/Initiatives

Global Environment Facility Programme in Pakistan

GEF was launched to forge cooperation and finance actions addressing critical threats to the environment.

IUCN – The World Conservation Union Pakistan

IUCN's mission is to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.

International Water Management Institute (IWMI) Pakistan is a non-profit scientific research organisation focusing on the sustainable use of water and land resources in agriculture and the water needs of developing countries.

World Wildlife Fund (WWF) contributes towards conserving Pakistan's unique natural diversity in a way that takes into account the future needs of its people. Along with the rest of the WWF global network, WWF-P is working to achieve the conservation of nature and ecological processes.

Sustainable Development Policy Institute (SDPI): SDPI's mission is to catalyze the transition towards sustainable development, defined as the enhancement of peace, social justice and well-being within and across generations. It provides the global sustainable development community with representation from Pakistan as well as South Asia as a whole.

9.4.7 Sri Lanka

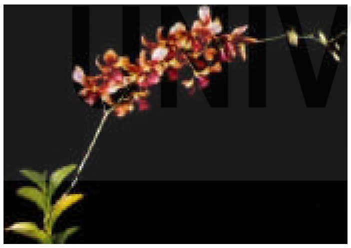
Governmental Organisations

Ministry of Environment and Natural Resources implements policies, plans and programmes in respect of irrigation and water management.

Department of Wildlife Conservation (DWLC) has a mission to conserve wildlife and nature by the sustainable utilisation of human resources, material and land through participatory management, research, education and law enforcement and ensure the maintenance of biodiversity and forest cover as exists today.

National Science Foundation (NSF) objective is to initiate, facilitate and support basic and applied scientific research by scientists.

Protection of Flora and Fauna: Sri Lanka's fauna and flora, which account for a high degree of species richness and endemism, are considered to be under threat due to rapid depletion of forest cover, high population density and unplanned development activities. IUCN Sri Lanka carried out a project to prepare a list of Nationally Threatened Flora and Fauna of the country. This involved developing a set of well-defined criteria for evaluation of species for threat.



A total of 1200 faunal species in 12 taxonomic groups have been evaluated in the categories of threat. i.e. threatened and Highly threatened species. The List includes the names of 550 species of fauna and 690 species of flora that are found to be threatened in Sri Lanka. This project, funded by the Worldwide Fund for Nature and the BMZ funded IUCN Regional Project, meant to build capacity to support Biodiversity Conservation in Tropical Asia. Although Sri Lanka has signed and ratified CITES, the potential benefits of listing native species in its Appendices of protected species is yet to be fully explored. But the very efforts towards building a scientific knowledge base pertaining to the long-term in-situ survival of our species is commendable.

Source*: http://www.iucn.org/places/srilanka/conservetion.htm*

Non-Governmental Organisations

Lanka Jalani is made up largely of institutions with an interest and a commitment to the principles of Integrated Water Resources Management (IWRM).

The Wildlife Heritage Trust of Sri Lanka

The Wildlife Heritage Trust of Sri Lanka is a non-profit organisation dedicated to the scientific exploration and documentation of Sri Lanka's biodiversity.

Environmental Organisations/Initiatives

IUCN – The World Conservation Union, Sri Lanka embodies the overall emission of the World Conservation Union to help nations throughout the world to protect and use their natural resources for the benefit of their people.

International Water Management Institute (IWMT) Sri Lanka is a non-profit scientific research organisation specialising in water use in agriculture and integrated management of water and land resources.

9.5 GOVERNMENTAL COMMITMENT TO ENVIRONMENTAL PROTECTION

All the five major countries of SAARC, viz., Bangladesh, India, Nepal, Pakistan and Sri Lanka have completed national action plans. However, only Bangladesh, India and Sri Lanka have signed the Kyoto Protocol (Convention) on climate change.

Bangladesh prepared an environmental profile in 1989. A biodiversity assessment strategy for the country was prepared in 1990 and the Chlorofluoro Carbons (CFC) emissions control was signed in 1990. In 1991 the environmental strategy or action plan was prepared. Bangladesh has participated during 1990 to 2001 in four important treaties: The Treaty on ozone layer was signed in 1990, the treaties on climate change and biological diversity both in 1994 and the Law of the sea was signed in 2001. In case of India, the environmental profile was prepared in 1989 and the environmental strategy or action plans were finalised in 1993. The CFC was signed in 1992. However, the biodiversity assessment and action plan was prepared only in 1993. India has also participated in all the important treaties, the ozone layer treaty in 1991, the climate change and the biological diversity treaty in 1994 and the Law of the Sea treaty in 1995.

An environmental profile was prepared for Nepal in 1983 itself, but the country took ten full years to finalise the environmental strategies on action plan. Nepal is yet to evolve biodiversity assessment strategy. However, Nepal, like other South Asian countries, participated in most of the treaties including the treaties on climate change, ozone layer, biological diversity in 1994 and the treaty of the Law of the sea in 1998. The CFC emission control was signed in 1994.

A biodiversity assessment and strategies for Pakistan was prepared in 1991 and the country's environmental profile together with an environmental action plan was ready by 1994. Pakistan was a signatory to all the important treaties. The ozone layer treaty and the CFC emission control were signed in 1992, the climate change and the biological diversity treaty in 1994 and the law of the sea treaty in 1997.

The response of Sri Lanka towards environmental concerns among the South Asian countries appears to have started early and have become stronger over the years. An environmental profile for Sri Lanka was prepared in 1983 itself. Sri Lanka was also the first country in South Asia to sign the CFC control in 1989. And the biodiversity assessment and strategies were made available in 1991. Finally, the environmental strategies for Sri Lanka were designed by 1994. Sri Lanka, like the other South Asian countries, is also a participant in the important environmental treaties designed and implemented by the global society from time to time. The ozone layer treaty was signed in 1989 and Sri Lanka's participation in all other treaties like climate change, law of the sea and biological diversity started with effect from 1994.

Draft National Environment Policy of India (2004)

The Ministry of Environment and Forests (MoEF) has released the Draft National Environment Policy in 2004 for public discussion. The draft policy accords priority to the conservation of forests, land and water. It proposes that more areas be brought under the protected area network by encouraging participative management of protected areas. Biodiversity conservation has received adequate attention in the NEP. The policy refers to the levying of proper user charges to reflect water scarcity; it calls for a review of the subsidies that are now being extended to the agricultural sector.

NEP also discusses the issues such as air quality, mountain ecosystems, conservation of wetlands, creation of environmental awareness among the masses, and stressing on environmental education. As enshrined in its Preamble, the national environment Policy is intended to be a response to the national commitment to a clean environment mandated in the constitution and statement of India's commitment to making a positive contribution to international efforts.

The objectives of NEP are to address some of the following concerns: conservation of critical environmental resources, intergenerational equity, efficiency in environmental resource use, enhancement of resources for conservation, legal liability, decentralisation, integration and environmental standard setting and reforms. Though the policy is in the stage of discussion and finalisation, environmentalists and many NGOs have rejected it as un-Indian, and intended to promote imported technologies and consultancy to foreign experts. Whatever may be the outcome, it is necessary to focus on the participatory approach in environmental resource management so as to ensure a secure future livelihood system

Source*: http://envfor.nic.in/*

9.6 SUMMARY

- South Asia presents a picture of unequal growth that is threatening to become unsustainable. Most of the indicators of ecological balance show a disturbing trend. However, it is very appropriately described by many analysts that the situation has not gone out of control. Urgent policy initiatives, under both governmental and non-governmental agencies need to be designed and implemented.
- The history of institutional evolution in South Asia to address the environmental concerns appears to be quite satisfactory looking at the number of institutions that have come into existence in most of these countries.
- The non-governmental initiatives also appear to be remarkably significant in terms of their symbolic presence. What is required at this point of time is a will on the part of both political institutions and civil society to move towards a more effective implementation of the environmental laws as ultimately the quality of life depends significantly on the provision of both fresh water and clean air besides the growth in income.

9.7 TERMINAL QUESTIONS

1. Explain why environmental concerns are important to the developing countries
2. Discuss the environments problems of South Asian countries.
3. Analyse the South Asian response to resolve their environmental problems.
4. Describe the commitment of the South Asian governments to resolve environmental problems.

REFERENCES

1. Mahbub ul Haq (2002) Human Development Centre, Human Development in South Asia, Oxford University Press.
2. Conner, David (1994) Managing the environment with rapid Industrialisation-Lessons from the East Asian Experience, OECD, Paris.
3. Mathew, Richard A. Environment, Population and Conflict: New Modalities of Threat and Vulnerability in South Asia, Journal of International Affairs, vol.56, No.