UNIT 1 ENVIRONMENTAL DIMENSIONS OF GLOBALISATION

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1.1 INTRODUCTION

Of the several overwhelming issues that have come to the fore during the last two decades of the Twentieth Century, the two issues that stand out are globalisation and global change. Globalisation seems to be one of the most widely used words these days. It has several connotations. Globalisation in general terms is a much wider phenomenon encompassing all aspects of global spread ranging from culinary skills, cultural practices, languages, political ideas, and ideologies, to migration of people, flow of technology, trade, labour and investments as well.

Globalisation literally means affecting the whole world and has been in vogue for centuries. But, we are concerned with its specific form and usage in the current phase. We are more concerned with 'economic globalisation' that has been underway since 1980s. It has been a process of globalisation of production and rapid liberalisation of trade and investment flows. The present phase of economic globalisation has certain dimensions fraught with environmental implications which we shall discuss in this unit.

'Global Change' refers to certain environmental changes that are global in nature. For instance, climate change can no longer be seen as a national or a regional problem; it is a global phenomenon. The underlying causes of climate change, like greenhouse gas emissions, are as much related to national energy policies as to the process of economic globalisation. But the solutions ought to be found through global institutional interventions. These aspects shall be dealt with in the last part of this unit.

Objectives

After studying this unit, you should be able to:

- explain the nature and process of present economic globalisation as well as global environmental change;
- discuss the impact of the present phase of globalisation on the environment; and
- articulate the need for appropriate global environmental interventions.

1.2 GLOBALISATION AND CHANGE IN ITS SCENARIO

Economic globalisation is associated with worldwide expansion of capital as an integral part of the capitalist development. There are evidently epochs of more rapid global expansion and extension of capital. These epochs are termed as 'globalisation'. For instance, we can identify two such epochs: (i) past globalisation of 1860 – 1914, the widely acknowledged imperialist-colonialist phase, and (ii) the present globalisation since 1980. We deal here with the latter part of the epoch.

The present phase of economic globalisation, beginning in 1980, is seen as a determined removal of all barriers to, and rapid increase in the flows of trade, investment, services and even intellectual property rights across the borders. Under the aegis of the present globalisation, capital in all its forms – productive and portfolio – has been moving freely across nations, apparently challenging their sovereignty. However, the same may not be true in the context of labour mobility which is still impeded by restrictions. In that sense, globalisation is also seen as a process of minimising the power of states and nations. We now briefly discuss the role of technology in accelerating the process of globalisation, and its impact on global trade and finance capital.

Role of Technology

The previous globalisation (1860 – 1914) was driven by the drastic fall in transport costs brought about by the steamship and railways. The current phase is driven by, to a large extent, the developments in information and communications technology (ICT). Due to rapid technological advancement, the average cost of processing information fell from US $75 per million operations to less than a hundredth of a cent from 1960 to 1990. Airline operating costs per mile came down by half in this period. The cost of a three-minute telephone call from New York to London fell from $245 in 1930 (in 1990 prices) to under $50 in 1960 to $3 in1990 and to about 35 cents in 1999 (see Fig. 1.1). The present phase is also characterised by a leap in the share of world trade. The world exports average 21% of GDP in the 1990s, compared to the 17% of the GDP in the 1970s.

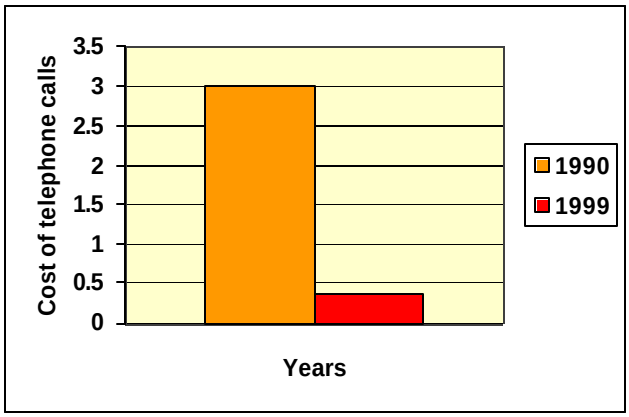

Fig. 1.1: The expansion of telecommunication network has led to drastic reduction in costs. This figure shows the cost of telephone calls from New York to London

Role of Trade

Globalisation since early 1980s has accelerated world trade at a much faster pace than the world output. The ratio of world trade to world gross domestic product increased from 10 percent in 1970 to about 20 percent in 1998. The growth of capital and financial flows has been faster than the growth of world trade. Foreign direct investment reached $400 billion in 1997, seven times the level in real terms in the 1970s. Portfolio and other short-term capital flows have grown substantially, and now range in trillion US dollars, almost three times more than those in the 1980s.

Role of Finance Capital

The current phase of globalisation is characterised by the nature of financial markets and the rapid increase in gross financial flows. Daily global transaction in currency alone increased from $15 billion in 1973, to $2.12 trillion in 1995. Currency flows are totally disconnected from, and phenomenally greater than, trade and investment flows. This suggests an increased speculative trading in currencies. This phenomenal increase in currency flows is also related to huge leap in portfolio investment. Cross-border transactions in bonds and equities by the United States investors increased from 9 percent of the GDP in 1980 to 164 percent in 1996. Such hyper-financial

markets have heightened financial and economic instability, particularly in the Third World Countries. Short-term flows have only added to the risks of volatility. These changes unleashed by the process of the present economic globalisation have serious environmental repercussions, which we shall discuss in the next part of this unit.

Global Change

While discussing the process of economic globalisation in its relationship with environment, it is essential to understand the phenomenon of 'global change' or more precisely 'global climatic change'. As you have studied in MED-001, from the early 1980s, there has been a growing concern about global warming. Research findings show that there has been an increase in the atmospheric concentrations of 'green house gases' (GHGs) that cause 'greenhouse effect' which results in global warming. Recall that the 'greenhouse effect' is a process in which energy from the sun (solar radiation) passes through the atmosphere freely, but the heat radiated back from the earth is partially blocked or absorbed by gases in the atmosphere. The radiation absorbed by clouds, carbon dioxide and some other gases produce the greenhouse effect, and hence the warming of the atmosphere. The additional warming sets off a chain of changes like melting of glaciers, rise in the sea level, erosion of coastal ecosystems –all of which are the causes for concern to all of us (Fig. 1.2).

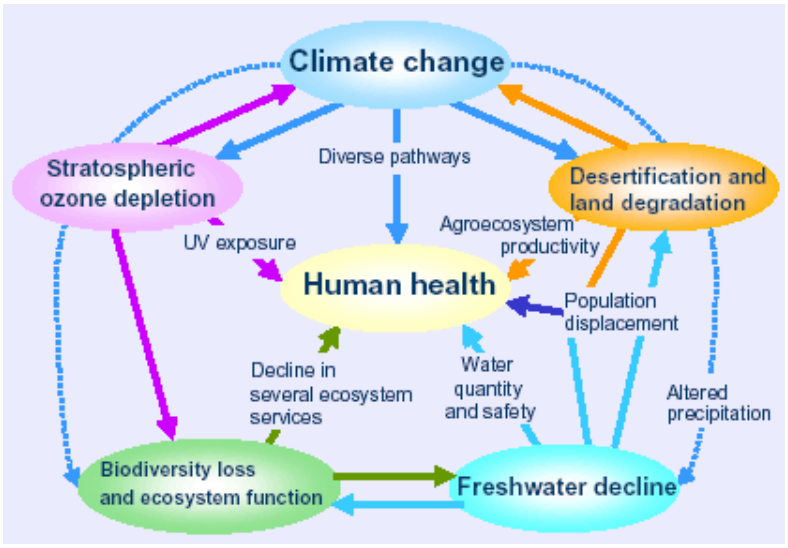

Fig. 1.2: Global environmental problems (Source: http://www.who.int/globalchange/en/**)**

As you know, gases like Carbon dioxide, Methane, Nitrous Oxide, Chlorofluorocarbons (CFCs) are called 'gree n house gases' (GHGs). Carbon dioxide is responsible for over half the enactment of the greenhouse effect. CFCs that contain chlorine and bromine are known to cause depletion of ozone layer which in turn increases the incoming ultraviolet radiation. This results in the increase of skin cancers. The GHGs that trap the outgoing long wave radiation have been increasing. Though natural events also contribute to these gases, substantial emissions are due to increasing human activity caused by industrial emissions, vehicular emissions, burning of forests, refrigeration etc. Recall the estimated rise in the global mean surface temperatures due to the increase in carbon dioxide concentration described in Unit 14 of MED-001. We reproduce the graph below for ready reference.

As a result of the rise in global temperature and melting of glaciers, the sea level is projected to rise between 9 cm and 29 cm by 2030, and 28 cm and 96 cm by 2090. Significantly, adverse effects on small island states and low -lying deltas, such as those in Bangladesh, Egypt and China, could render millions of people homeless and the warming would cause significant loss of life. Heat stress mortality and disease could increase as the tropical habitat of insects expands northwards. Substantial part of the emissions of GHGs is the contribution from the industrialised countries.

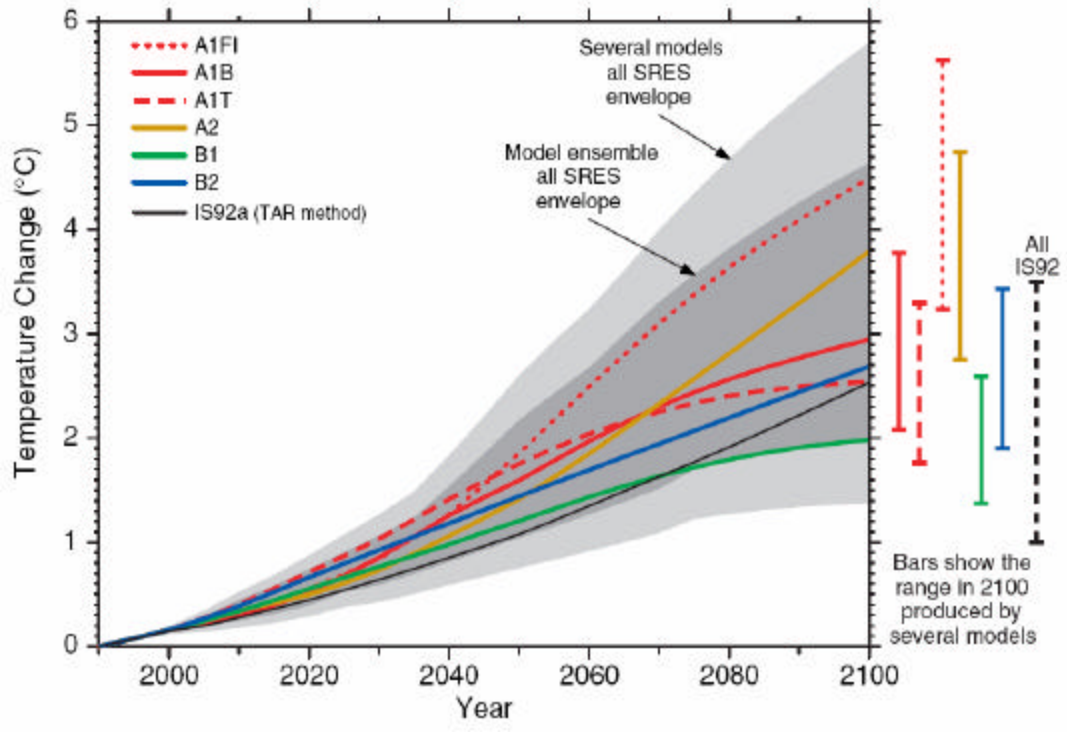

Fig. 1.3: Projected rise in global mean temperature due to global warming (Source: IPCC 2001)

The present phase of economic globalisation with more attention to economic growth based on the so-called strategies of 'business as usual' is bound to aggravate global warming. **In the developed countries, the level of production, especially in energy and transportation sectors have reached a point where there is need to emphasise reduction in the per capita energy use while paying for the carbon and other sinks largely associated with biodiversity and forest cover of the poorer countries. Global climate change necessitates globally negotiated agreements and institutions for implementation.** We shall be discussing these issues in the last part of this unit. Before studying further, you may like to reflect on the issues raised so far.

SAQ 1

What do you understand by globalisation? Describe its impact in your own context in terms of the parameters outlined above.

1.3 GLOBALISATION AND ENVIRONMENT

We now discuss different aspects of globalisation such as free trade and terms of trade in the context of environment. We also discuss standards of the environment.

Free Trade and Environment

The recent trends in globalisation of production and steep reduction in all barriers to allow free flow of trade and investment are opposed by many environmental groups all over the world. They perceive globalisation as harmful to the environment for many reasons, which we now describe.

- First, free trade is seen as a means of more output and income, which means more resource depletion and degradation of the natural environment.
- Second, freer trade, investment and globalisation of production will lead to increase in transport activity and encourage the relocation of environmentally degrading industries to countries with lower environmental standards or more fragile natural environments, and thus, contribute to further environmental damage.

- Third, freer foreign investment reduces the incentive to develop environmentally friendlier technologies.
- Fourth, free trade may result in industrial and agricultural reorganisation to capture the economies of scale made possible by larger markets. This might involve larger productive units: factories that are aesthetically unpleasing and farms that remove hedgerows and use intensive agricultural techniques.
- Fifth, free international trade neglects the environment in the same way as domestic free markets fail to account for environmental losses. In other words, trade liberalisation can be expected to increase market failure (Pearce and Warford, 1993, pp. 299-300).

Terms of Trade and Environment

The World Commission on Environment and Development (Brundtland Commission 1987) viewed that world commodity trade frequently encourages resource depletion in the developing world:

"The proportion of increased volumes of commodity exports has led to cases of unsustainable overuse of the natural resource base. While individual cases may not fit this generalisation, it has been argued that such processes have been at work in ranching for beef, fishing in both coastal and deep-sea waters, forestry, and the growing of some cash crops. Moreover, the prices of commodity exports do not fully reflect the environmental costs to the resource base" (pp. 80-81).

Further the Brundtland Commission also draws attention to the possible consequences of increases in trade to primary product exporting developing countries. The 'Brundtland hypothesis' about the link between the terms of trade and the environment is as follows: "If the terms of trade decline, exporting countries must export more and more just to maintain foreign exchange earnings constant. In the specific case of crop exports, then, emphasis is placed on expanding acreage in order to increase exports. If the affected crops are environmentally hazardous – groundnuts or maize – soils in land that is not marginal may be directly damaged. Damage to marginal soils would be even higher. Even if the crops are environmentally benign, efforts might be made to expand cultivation onto marginal lands by clearing shrub and forest land and adding to potential erosion through deforestation". (Pearce and Warford 1993, pp. 285-286).

The vagaries of trade and the fluctuating exchange rates are often shown to cause extensive environmental damage. Devalued currencies of many commodity exporting developing countries are shown as a major reason for increasing depletion of forests which are cleared for exports. The liberal trade in ivory during 1980s appears to have depleted almost one-third of the elephant population in Africa. Massive depletion of forests is attributed to the pressure of free trade in hardwood. Thus, the present phase of globalisation, with an emphasis on free trade, would make the world's tropical forests unsustainable, unless there are firm commitments. The growing dependence on exports seems to result often in inappropriate and environmentally damaging shift in cropping pattern. For instance, growing demands for cassava have made small farmers in Thailand to extend cassava cultivation into previously forested land. It is shown that cassava production for export is a significant cause of deforestation, soil erosion, and soil nutrient reduction in Thailand.

There are instances of extensive environmental destruction unleashed by the corporate culture. The denudation of forests and with that the destruction of the culture of commons is widely known. The extensive and ruthless ecological damage done to the Ogoni region in Nigeria by the multinational oil companies and the uprooting of the livelihood of its people are well documented. Perhaps, one of the notorious examples of globalisation facilitating polluting and hazardous industries in the developing countries is the case of Union Carbide Pesticide factory in Bhopal of Central India. The Methyl isocyanide (MIC) gas leak from this factory rendered several thousand people blind. This was one of the worst industrial tragedies of the last century. These

experiences appear to strengthen the belief that unbridled globalisation would cause growing harm to environmental sustainability.

SAQ 2

Document a case study that illustrates the harmful impact of unbridled globalisation on the environment in your region. Describe the setting, the event, the causes and effects in your response.

Environmental Standards

The emergence of the World Trade Organisation (WTO) as a major institution promoting globalisation by reducing trade and investment barriers has brought the trade related environmental standards into sharp debate. Environmental standards refer to restrictions on trade in commodities, which are not subjected to certain environmentally damaging limits in their production or exploitation. The environmental standards are stiffly opposed by the developing countries. These countries see the entwining of environmental and trade issues as a threat to their sovereignty and their economies. Their objections to trade measures to achieve environmental objectives are based on the following considerations:

- The ban on certain environmentally unfriendly activities like ban on ivory trade or ban on hardwood trade, have always gone against the economic interests of the developing countries.
- Trade barriers for environmental protection cause adverse effects on developing countries' exports for the following reasons:
  - One, trade policy measures, usually, are not the best instruments for achieving environmental objectives. Trade sanctions do not directly address the root cause of the environmental problems.
  - Two, unilateral import restrictions are imposed following costly environmental standards, and such protectionist measures reduce income both at home and abroad, especially in natural resource rich developing countries.
  - Three, environment linked trade restrictions will lead to escalation in trade disputes resulting in retaliatory and counter retaliatory measures.
- Environmental uses of trade policy are seen as inherently discriminatory. For instance, industrial countries had lower environmental standards at the earlier stages of their development.
- Developing countries contribute disproportionately small amount per capita to global environmental problems. For instance, of the global emission of carbon dioxide, United States alone contributes to one-fourth.
- Differences in standards are a legitimate source of comparative advantage; in as far as they reflect differences in the resource endowments, preferences and abilities of various countries.
- Environmental standards rise along with a rise in the per capita incomes and there is no point insisting on higher standards at lower incomes.
- Non-trade measures like labelling (e.g. "dolphin-friendly tuna") would be friendlier.
- Outside pressure on developing countries to raise their environmental standards would be used by domestic protectionist groups to argue against their governments' export-oriented development strategy.
- There will be a threat to the WTO rule-based multilateral trading system.

In the context of efforts to liberalise trade and investment flows, any attempt to link the environment with trade is likely to be counter-productive. As discussed earlier, there are strong objections to trade liberalisation on the ground that they would lead to environmental destruction, that more trade would mean more output and more income, all of which lead to resource depletion; this would encourage the location of environmentally degrading industries to countries with lower environmental standards and fragile natural environments, and all these are feared to contribute to further environmental damage. Many developing countries see environmental standards as backdoor measures of protection sought to be imposed by the developed countries.

In the globalising context, there is a growing pressure from different groups and a large number of environmental issues are emerging that require global multilateral environmental agreements. It is recognised that at least three broad classes of environmental issues require international solutions:

- First, regional problems arise when neighbouring countries share a common resource and one country's actions therefore affect others. In this category we deal with most problems of trans-boundary pollution, including smog due to forest fires, acid rain and the management of international rivers or regional seas.
- Second, the world shares certain global environmental resources such as the atmosphere and the deep oceans. Any action by one country that affects such "global commons" has an effect on all other countries. In this category we include a build up of greenhouse gases (GHGs) and the thinning of ozone layer by the emission of CFCs.
- Third, there are resources clearly belonging to one country but have value for the international community not reflected in the market. They include tropical rainforests, other special ecological habitats, and individual species.

We now turn our attention to some of the global initiatives that have tried to address these issues in the following section. But before you learn about them, you may like to test your understanding of the issues raised above.

SAQ 3

'Environmental standards are protectionist measures being imposed by the developed countries.' Comment.

1.4 GLOBAL ENVIRONMENTAL INTERVENTIONS

In this section, we shall discuss the ways as to how we can maintain the quality of environment by resorting to sustainable development, minimising large scale disruption in ecosystem, and by taking global environmental initiatives.

Globalisation and Sustainable Development

The last twenty years have seen a virtual explosion of intergovernmental negotiations to formulate international environmental treaties. This 'ecological globalisation' is an inevitable result of the ongoing processes of economic growth and economic globalisation, which not only stitch the world's economies together, but also take national production and consumption levels to a point where there is a threat to the world's ecological systems.

The present globalisation is driven by the Western economic and technological model which is highly material and energy-intensive. It metabolises huge quantities of natural resources, leaving a trail of toxins and highly degraded, transformed ecosystems in its wake. It is this very model that the developing nations are following for economic and social growth, leading to an extraordinary combination of poverty and inequality, side by side with growing economies, pollution and large-scale ecological destruction.

The process of ***ecological globalisation*** is driven by the fact that the levels of production and consumption have reached a stage where what one does in one's own country can have a major impact on the neighbouring countries or on the rest of the world. You have learnt in MED-001 that even simple things like using refrigerators or air conditioners can destroy the world's ozone layer; running automobiles or unlimited felling of trees can destabilise the world's climate; and using a persistent organic compound like dichloro diphenyl trichloroethane (DDT) in India can mean life-threatening pollution for human beings and other life forms in the remote polar regions of the world, as these compounds are carried to these regions by the world's oceanic currents and air streams. Never was the pace of depletion of resources and emission of harmful gases as high as under the current globalisation process. There was never unsustainability of this model of growth as clear as of now. Never before have human beings needed to learn to live in "one world" as now.

Globalisation and Large Scale Disruption of Ecosystems

The World Development Report 2003 (World Bank, 2003, p. 164) reports that a global satellite survey estimated a pan tropical gross deforestation rate of 0.52 percent annually over 1990 – 2000, or 9.2 million hectares a year, an area the size of Portugal. Coral reefs are being lost to bleaching, pollution, and destructive fishing. A worldwide bleaching event in 1998, associated with **El-Niño** (see appendix), harmed 16 percent of the world's coral reefs, with possibly half of them damaged irreversibly. Another 32 percent are thought to be threatened over the next 30 years, and 11 percent have already been lost. Three-quarters of all fish stocks are being exploited at or above their sustainable limits. Total harvests from capture fisheries have levelled off or declined. Some fisheries, such as the North West Atlantic cod, have completely collapsed. In others, the depletion of prized predatory fish has led to shifts in ecosystem structure. Almost 15 million square kilometres of ocean bottom have been scraped by ocean trawlers, possibly causing long-lasting damage to the bottom-dwelling species.

For quite some time poverty was blamed for environmental degradation. But it is increasingly clear that shifting-cultivators and small farmers account for only a fraction of depletion of forests or degradation of land. The present phase of globalisation shows that large-scale agriculture, including ranches and plantations, and commercial logging, account for most of deforestation in Latin America and Asia. Poverty, therefore, is not the immediate driver of most tropical deforestation, but tropical deforestation can exacerbate the poverty of communities dependent on the forest for their livelihood.

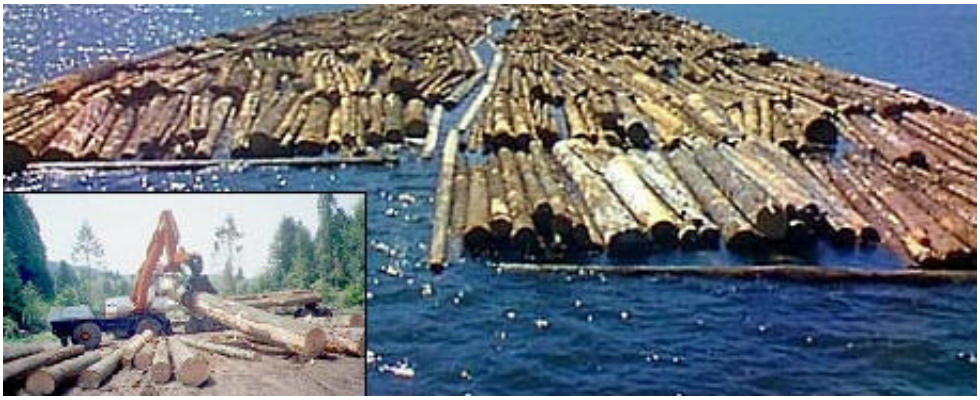

Fig.1.4: Deforestation for timber wood (Source: www.fao.org/docrep/ 007/)

Similarly, it is the greed of mechanised fishing that is causing not only unsustainable exploitation of fish resources but also uprooting the livelihood of millions of traditional fishermen and disrupting the coastal ecosystems.

You could find out information like that given in Fig. 1.5 for your own region.

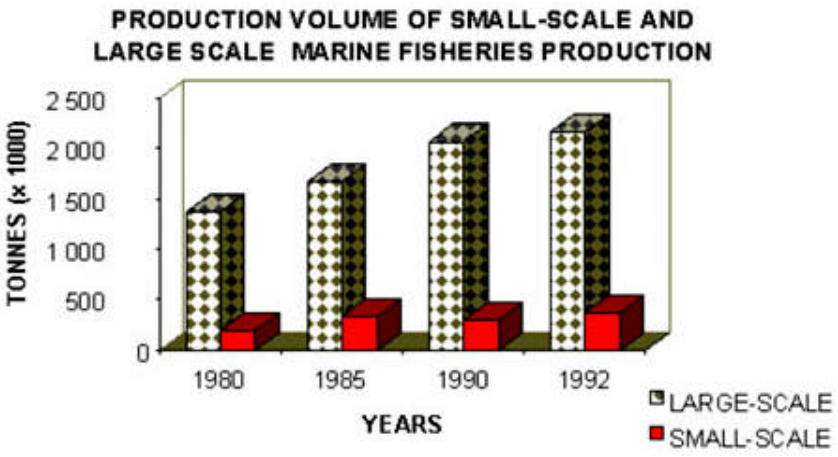

Fig.1.5: Comparison of the scale of marine fisheries production in South China Sea area
(Source: www.fao.org/docrep/)

The global disruption of environment manifests in various detrimental ways, of which climate change and ecosystem damage loom large. We have already mentioned the consequences of climate change. Equally grave are the threats posed by ecosystem damage resulting in the loss of biodiversity. The genetic, biophysical, and ecological information embodied in biodiversity may be valuable to future agricultural, pharmaceutical, chemical, materials, and information industries. For instance, gene bank collections currently hold 15 percent or less of the genetic diversity of wild relatives of important crop species, including maize, rice, sorghum, millets, and peas. Loss of some of the remaining 85 percent might constrain development of improved varieties of these crops.

While there is a general agreement that the magnitude of present environmental challenges like climate change or biodiversity are such that these require global cooperation in evolving and implementing rules and methods of mitigation, the recent experience shows that global agreements and their enforcements are effective in areas where the costs are relatively less and the benefits more to the more prosperous countries. Evolving conventions and getting their implementation in several aspects of environmental regulation, which may mean more costs and relatively less tangible immediate gains, especially to the more developed and powerful countries may not be easy. In the following part we shall examine some of the initiatives in mitigating the global environmental problems.

Some Global Environmental Initiatives

One of the successful global initiatives to reverse the adverse impact of modern development on environment relates to the ozone layer. By late 1970s it was clear that CFCs were causing depletion of ozone layer, which in turn was resulting in an increased ultraviolet radiation causing skin cancers. International action on the ozone layer was taken when the United Nations Convention on the Protection of the Ozone Layer was drawn in Vienna in 1985. Shortly thereafter, dramatic satellite images of the Antarctic ozone "hole" captured public attention. This deepening evidence prompted the Montreal Protocol of 1987, an outgrowth of the Vienna Convention, to impose obligations on the developed countries to reduce the use of ozone-depleting substances. On further evidence of causal impact of CFCs on ozone, in 1990, the London Protocol to the Vienna Convention took effect and it was agreed upon to cut the CFC levels by 85 percent by 1997. Under this protocol, developing countries agreed to take on obligations, with a grace period, and developed countries underwrote a trust fund of US $ 240 million to assist them.

The result is a foreseeable reduction in atmospheric concentrations of ozone-depleting substances and an eventual recovery of the ozone layer.

The problem of protecting the global ozone layer was easier to tackle than other global environmental problems like climate change and biodiversity erosion. The political economy of reaching agreement on ozone layer was favourable. At the national level, the wealthy industrial nations responsible for most production were also those at the greatest risk from skin cancer. Further, production and use of ozone-depleting substances is not central to any economy – unlike greenhouse gases, whose production is deeply embedded in the energy and transport sectors.

In spite of a number of hurdles, the United Nations has been in the forefront in taking initiatives to mitigate the global environmental problems, which are likely to exacerbate, if the present trend of economic globalisation continues unabated. A major UN initiative came after the UN Conference on the Human Environment (UNCHE) in 1972 at Stockholm. As you know, the United Nations Environmental Programme (UNEP) was created in 1972 "to provide leadership and encourage partnership in caring for the environment by inspiring, informing, and enabling nations and peoples to improve their quality of life without compromising that of future generations".

The UNEP initiative, however, remained dormant for almost two decades until early 1990s. There was growing concern about global warming. Under global pressure, the UN Convention on Climate Change was adopted in 1992. In 1997, the Kyoto Protocol was signed which called for industrial countries to reduce emissions by 5.2 percent, compared to 1990 levels, by 2008-2012. But the US, which is responsible for one-fourth of the world's total carbon emission, refused to ratify the Kyoto Protocol on the ground that developing countries were exempted. The developing countries, on the other hand, demand 'polluting' North to pay costs and transfer resources to compensate for the loss suffered by them. The carbon convention is a positive step in this direction.

The UN Conference on Environment and Development (UNCED) held in Rio de Janeiro in 1992 is seen as a landmark in evolving a blueprint for the 21st Century. The Commission for Sustainable Development (CSD) was established in 1992. Though, Global Environmental Facility (GEF) was established in 1991, it was restructured in 1994, in the light of developments and conventions since the Rio Conference. Recognising the importance of biodiversity for the survival of life, including human life on the earth, and sharing concern over loss of biodiversity by unprecedented levels since 1980s, the Convention on Biological Diversity (CBD) was convened in 1992, and among other things, it reaffirmed sovereign rights of status over their natural resources and agreed to establish a fund through GEF to pay for the use of genetic resources of developing countries. Unlike the initiative on ozone layer, the progress on other major environmental issues like climate change and biodiversity is very tardy.

What appears to be apparent is that while economic globalisation appears to be increasingly embedded in strong institutional support systems, 'ecological globalisation' seen in terms of challenges to sustainable development is still in search of empowered institutional support. At least two shortcomings are discernible. Firstly, the process of global environmental threat is not accompanied by any strong *political support.* As a result, no political leader has any interest to ensure that the emerging global ecological policy is managed in the best interest of the maximum number of people and on the basis of the principles of 'good governance', that is, equality, justice and democracy.

Secondly, there is no clear and transparent mechanism to integrate the two processes of economic and ecological globalisation. But nations are doing so individually, often in a covert manner, through the positions they take to set the rules for the two processes of globalisation. When the leaders of nation-states meet to develop rules and regulations for economic globalisation, they take positions to derive the maximum economic benefits for their national economies. When they meet to develop the rules and regulations for ecological globalisation, they take positions which ensure that there would be either no costs or, at worst, least possible costs to their individual national economies.

As a result of these two shortcomings, the rules and regulations that are emerging generally tend to be based on the principles of 'business transactions' rather than on the principles of 'good governance'. Environmental diplomacy has turned into petty business transactions, not the establishment of fair and just global environmental governance systems. While business transactions are built on principles of mutual benefits regardless of their societal costs, governance systems are built on principles of democracy, justice and equality.

The issue of equity has become a very contentious one in environmental diplomacy. Equity is a prerequisite for global agreement, and environmental cooperation can only be possible through solutions that are both equitous and 'ecologically effective'. Without equity or a sense of fair play it is quite unlikely that there will be a long-lasting partnership to address and solve global problems.

Global equity is particularly important in global environmental negotiations which deal with the pollution or degradation of global common property, such as the stratospheric ozone layer, the atmosphere, or oceans. So far, these common property resources are seen as free access resources – a situation that aided the industrialisation process of early entrants.

In the context of globalisation, environmental concerns have not yet found an institution, which is as powerful as World Trade Organisation (WTO) in the arena of global trade. A widely shared feeling is that while WTO, managing world's trade, has become stronger, environmental institutions have become weaker in the years following the Rio Conference. World leaders are yet to design a unifying institutional framework for the global environment. The need of the hour is to rectify this institutional deficiency in the interest of sustainability of diversity of life on the planet and to evolve an environmental organisation as effective, if not more effective, as WTO.

The driving forces behind the present globalisation process are the corporate capitalist interests in pursuit of larger and faster profits. The imprint of corporate capitalism is clear in the emergence of global institutions like the WTO. One of the elements of resistance to corporate globalisation could be seen in the form of growing environmental movements. The emergence and effectiveness of a world environmental organisation would depend upon the power of public mobilisation against the adverse environmental impact of the present globalisation.

Let us summarise what we have studied so far.

1.5 SUMMARY

- Beginning with the early 1980s the world has been experiencing unprecedented pace in the expansion of global trade, financial flows and spread of trans national production. This process has come to be widely known as globalisation. It is aided by the revolution in information and communication technology (ICT), which has compressed time and space. While these rapid changes are seen as necessary to sustain fast growth, there are also concerns that the globalisation process, by hastening resource exploitation and by increasing industrial activity, especially in the energy and transport sectors, has been causing considerable damage to environment. The environmental impact has been assuming global proportions in the form of emission of GHGs causing global warming or climate change and biodiversity degradation, besides unsustainable depletion of resources. The free trade and investment flows, which drive the globalisation process, are also seen as environmentally harmful.
- The proposition of developed countries to contain these adverse effects through environmental standards in terms of trade restrictions are resisted by developing countries. The latter see them as restrictions on their trading prospects. There is a growing consensus that the emerging environmental problems need global initiatives with the participation of developing as well as developed countries.

- At the behest of the UN, a number of initiatives have been made for restricting and reversing environmental damage. Some of the initiatives like the Vienna Convention and the protocols that followed on CFCs control and ozone layer have been very successful but other initiatives like the one on climate change are facing resistance. There is a growing feeling among many observers that to face the environmental challenges, which are deepened by the present globalisation process, there is a need for a multinational World Environmental Organisation (WEO), which should function as effectively on environmental issues as the WTO does in the arena of trade.

1.6 TERMINAL QUESTIONS

1. What are the effects of globalisation on environment?
2. What are environmental standards? Why are they opposed by developing countries?
3. Discuss the relationship between globalisation and global climate change.
4. Discuss the emerging global environmental challenges and the effectiveness of global environmental initiatives.

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APPENDIX

El-Niño is a disruption of the ocean-atmosphere system in the tropical pacific having important consequences for weather around the globe. The name was originally given by Peruvian fishermen to a warm current that appeared each year around Christmas and gradually the usage of the term changed to refer only to the irregular strong ever.

During El-Niño the trade winds relax in the central and western Pacific leading to a depression of the thermocline (a zone in the water column that shows a sudden change in temperature with depth) in the eastern Pacific, and an elevation of the thermocline in the west. This reduces the efficiency of upwelling to cool the surface and cuts off the supply of nutrient rich thermocline water to the euphotic zone.

The result is a rise in sea surface temperature and a drastic decline in primary productivity, the latter of which adversely affects higher trophic levels of the food chain, including commercial fisheries in this region. Rainfall follows the warm water eastward, with associated flooding in Peru and drought in Indonesia and Australia. The eastward displacement of the atmospheric heat source overlaying the warmest water results in large changes in the global atmospheric circulation, which in turn force changes in weather in regions far removed from the tropical Pacific.

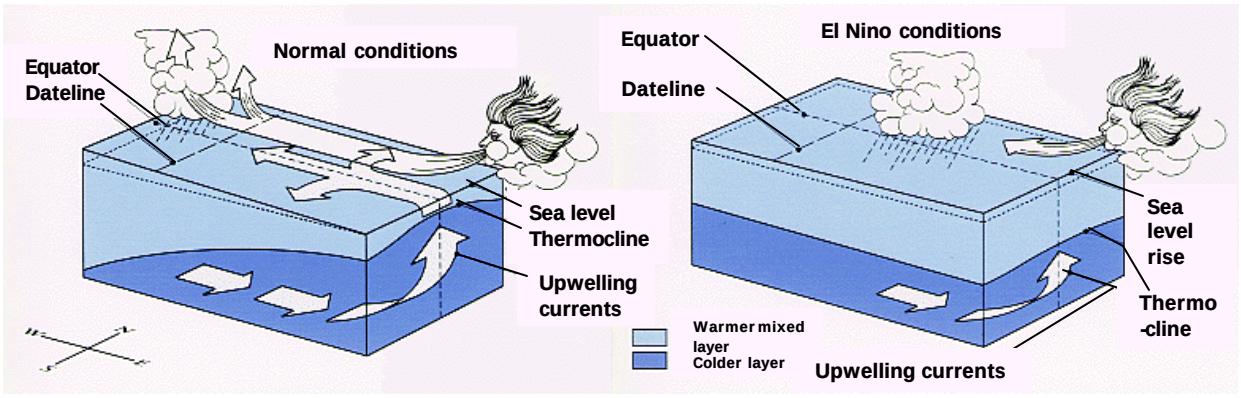


Fig.1.6: Explaining El-Niño (Source: winds.jpl.nasa.gov/ images/winds_over_ocean2**)**

Socio-economic effects of the 1997-98 El-Niño

The 1997-98 El-Niño event affected virtually every region: Eastern Africa suffered drought and unusually high rainfall; Southeast Asia and North America, abnormally warm periods; South Asia, drought; Latin America and the Caribbean, unusually high rainfall and drought; and the Pacific Islands unusually high rainfall. The global socio-economic impacts were varied:

More than 24 000 people died because of high winds, floods or storm tides that occurred during intense storms.

More than 110 million people were affected and more than 6 million people were displaced as community infrastructures, including housing, food storage, transport and communications, were lost during storms.

Direct economic losses exceeded US$34 billion.

Water logging of fields reduced agricultural production in many regions; in others, the absence of storms and rain led to prolonged dry spells, loss of crops and reduction in water supplies.

Wildfires were more frequent and widespread during extended dry periods.

Increased incidence of disease followed the prolonged disruption to weather and rainfall patterns that resulted in contamination of water supplies or a more favourable environment for disease-carrying insect vectors.

El-Niño and epidemic diseases

Cyclical temperature and rainfall variations associated with El-Niño are particularly important since they can favour the development and proliferation of vectors of epidemic diseases such as malaria, dengue fever, yellow fever and bubonic plague (WHO 1999). In South America, the most severed outbreaks of malaria generally increase in rainfall (as in 1983 in Bolivia, Ecuador and Peru) or with a reduction in rainfall and run-off (as in Colombia and Venezuela).

A similar link has been suggested between the warming of superficial oceanic waters by El-Niño, the proliferation of marine algae, and the appearance of cholera in South America in 1992. The impact of extremes in precipitation (both too much and too little) is also important in the transmission of water-borne diseases such as cholera, gastrointestinal infections and various types of diarrhoea. There were outbreaks of cholera in 1997-98 in Honduras, Nicaragua and Peru related to the increase in precipitation, associated with El-Niño (WHO 1999, PAHO 1998).

The most widely used scale to measure the intensity of the El-Niño is known as the Southern Oscillation Index (SOI) which is based on the surface atmospheric pressure difference in various regions.

Source: http://www.pmel.noaa.gov/tao/elnino/el-nino-story.html

UNIT 2 ENVIRONMENTAL CALAMITIES

Structure

2.1 Introduction
Objectives
2.2 Natural Calamities
2.3 Earthquakes
2.4 Floods, Cyclones and Tsunamis
2.5 Droughts
2.6 Preparedness for Calamities
2.7 Summary
2.8 Terminal Questions

2.1 INTRODUCTION

In the previous unit, you have studied about different dimensions of globalisation and its impact on the environment. In the present unit, we shall discuss about environmental calamities that often cause immense loss to our nation in terms of loss of life and natural bounties. The suffering has multiplied due to the policies being followed in this era of globalisation. We often use the words catastrophe, cataclysm, calamity and disaster to refer to personal and public misfortunes that result in grave loss of property and (or) heavy casualties. Though the dictionary meanings may seem synonymous, there are qualitative and quantitative differences in the extent of damage to life, property and the well being of biotic and abiotic entities as well as in the range of the effects on a time scale.

Much before we faced the effects of globalisation, calamities like floods, earthquakes, eruption of volcanoes, and forest fires were wreaking havoc on human lives. But with rapid industrialisation, exploitation of non-renewable natural resources, construction of huge dams, deforestation, indiscriminate use of chemicals and human greed for quick returns with lower inputs contributed to the escalation of the occurrence of these calamities. This, coupled with the man-made disasters like nuclear accidents, industrial accidents, disposal of toxic wastes, accidents in the transportation of hazardous wastes, oil spills and emission of Green House Gases, has created a situation that threatens the existence of humanity. There are sections of scientists and social scientists who argue that all environmental calamities are man-made disasters whereas others argue that development and economic growth cannot be achieved unless we take calculated risks. These issues are debatable but the issue at stake is the survival of humanity. It is to be acknowledged that the margin between natural calamities and man-made disasters (the subject of the next unit) is becoming thinner gradually.

Objectives

After studying this unit, you should be able to:

- define environmental calamities and classify them;
- discuss the impact of environmental calamities on society; and
- highlight the need for preparedness to reduce and meet the eventualities and its adverse effects.

2.2 NATURAL CALAMITIES

According to the World Health Organisation, **an environmental calamity is an event that causes damage, economic disruption, loss of human life and deterioration in the health and health services on a scale sufficient to warrant an extraordinary response from outside the affected community or area.**

Natural calamities adversely affect the lives of a large number of people, cause considerable damage to infrastructure and property. The ill effects are more pronounced in developing countries due to the lack of preparedness, lack of systems for sufficient warning, lack of facilities for quick access to the site of calamity.

At the global level, Asia is more prone to natural calamities. It is reported that for each major natural calamity in Europe and Australia, there are ten in Latin America and Africa and fifteen in Asia. According to CRED World Disaster Report (1998), the ratio of those killed to those affected depends on the type of calamity, degree of preparedness and the density of population. For example, floods affect many and relatively less number is killed whereas in Earthquake many lives are lost but relatively less number is affected. Table 2.1 gives the annual average number of people killed or affected over a period of ten years (1987 – 1996).

Table2.1: Annual average number of people killed or affected over a period of ten years (1987 – 1996)

Country	**People Killed** (approximate)	**People Affected** (approximate)
Bangladesh	44,000	18,574,000
India	5063	56,563,000
Nepal	780	201,000
Pakistan	750	1,407,000
Srilanka	100	504,300
Bhutan	5	7,000
Maldives	1	30

Source: CRED World Disaster Report (1998)

Natural calamities could be broadly classified under the following headings:

i) **Atmospheric** – Rains, Hail storms, winds, lightning, fog, heat/cold waves, etc.
ii) **Hydrological** – Floods, sea-shore waves, glacier advances, water logging, etc.
iii) **Geological** – Land slides, avalanches, earthquakes, volcanic eruptions, shifting sands etc.
iv) **Biological** – Severe epidemics (in humans, plants, animals), forest fires, pest invasions (locusts) etc.

Fig.2.1: Environmental calamities

Selected natural disasters: Asia and the Pacific

- July 1976: an earthquake in China took 242 000 lives.
- April 1991: a cyclone in Bangladesh accompanied by a storm surge caused 138 866 deaths.
- February 1990 and December 1991: cyclones in Samoa caused losses of US$450 million, about four times the country's GDP.
- January 1995: an earthquake in Kobe, Japan, became one of the costliest natural disasters in history– 5,502 people were killed and more than 1 800 000 affected, with damage estimated at US$131.5 billion.
- October 1999: the Super Cyclone in the eastern state of Orissa in India caused more than 10, 000 deaths, while 15 million people were rendered homeless, left without food, shelter or water and their livestock population devastated – the cyclone damaged 1.8 million hectares of agricultural land and uprooted more than 90 million trees.
- January 2001: an Earthquake of magnitude 7.7 on the Richter scale rocked the state of Gujarat in India, causing more than 20 000 deaths and 167 000 injuries – economic losses estimated at US$2.1 billion.

DoAC India (2002), Super Cyclone Orissa, Natural Disaster Management, Dept. of Agricultural and Co-operation, India.

http://www.ndmindia.nic.in/cycloneorissa/

Recent disasters caused by extreme natural events around the world

The year 2000

- Mongolian herders had their hardest winter for 30 years – 2.4 million livestock died and 45 percent of the country's population was affected.
- In February and March, floods killed 650 people and left more than half a million homeless in Mozambique. Heavy rains also affected Botswana, Swaziland and Zimbabwe.
- Cyclones Eline (mid-February) and Gloria (early-March) left 184 000 people in need of immediate relief support out of the total of 737 000 affected in Madagascar. In early April, a third cyclone, Hudah, hit the north of the island.
- Floods in September and October in Southeast Asia, especially Vietnam and Thailand, killed approximately 900 people and left 4 million homeless or with insufficient shelter. Losses estimated at US$460 million.
- Hurricane Keith in October killed eight and affected 62 000 people in Belize. Direct losses estimated at US$520 million.
- In mid-October, heavy rains caused floods in the Italian and Swiss Alps killing 38 people and causing economic losses estimated at US$8.5 billion.
- Similar floods killed six people and caused US$1.5 billion loss in the United Kingdom in November.

The year 2001

- In mid to late January, heavy rains over Zambezia Province caused the Licungo River to flood in Mozambique. Nearly 500 000 people were affected by the floods.
- In March, floods devastated a wide area of north-eastern Hungary, north-western Romania and western Ukraine. Tens of thousands of people were forced to move.
- Flash floods unexpectedly struck parts of Pakistan on 23 July. The cities of Islamabad and Rawalpindi were the worst affected. 132 people were killed.
- In mid-November, as many as 576 Vietnamese had been killed by natural disasters, mainly floods and typhoons. Material losses amounted to more than US$200 million.
- A persistent multi-year drought in Central and Southwest Asia had affected about 60 million people by November 2001.
- After several months of drought, devastating floods tore through the Algerian capital Algiers on 10 November, killing 751 people. Thousands were injured, and about 40, 000 people were left homeless.

Source: Relief Web (2002) Natural Disasters, Project of the United Nations Office for the co-ordination of Humanitarian Affairs, Munich

http://www.reliefweb.int/w/rwb.nsf

Any one or a combination of several of the above mentioned calamities may result in famine or drought. There have been arguments that famines and droughts are entirely man-made and could not be termed as natural calamities. But famines and droughts had been there even before the present appearance of globalisation or massive industrialisation. Table 2.2 gives the annual average number of people killed due to disasters during the period 1972 to 1996.

Table 2.2: Annual average number of people killed due to disasters during the period 1972 to 1996

Period	Earth quake	Famine/ Drought	Floods	High winds	Land slides	Volcanic eruption	Total
1972–1976	64,170	253,800	7,232	4,877	1,142	9	331,330
1977–1981	5,821	56	4,900	6,729	343	129	17,979
1982–1986	3,210	111,832	4,269	6,494	488	4,740	131,033
1987–1991	15,548	1,852	39,787	57,803	1,184	151	116,325
1992–1996	4,826	489	7,293	3,797	807	56	17,268
(1972–1996) (Average per annum)	18,715	73,606	12,696	15,960	793	1,017	122,787

Source: UECD, 1998 Table.2.1

There is no discernible trend in the number of deaths due to one type of calamity or the other. Famine was the biggest killer in the early 70s. But the situation has considerably improved over the years. Improved preparedness, building up of buffer stock of food grains, early response to mitigating the sufferings of people could be attributed to the lower death toll in recent years.

However, much more needs to be done to prevent hunger and improve food security as you have studied in MED-007. This brings us to the added dimension of globalisation in coping up with natural disasters.

Globalisation could facilitate development processes which enhance society's access to knowledge and resources as well as their application to improve the quality of life of the people in terms of their wellbeing and access to amenities; the same processes could, however, contribute to the frequent occurrence of natural disasters.

You would agree that the ability of an individual, family, community and nations to protect themselves against the adverse effect of a natural calamity is determined by their economic strength. It is estimated that 95 percent of deaths from a natural calamity occur among 66 percent of the world population living in poorer countries. For example, the major impact of drought is felt by agricultural labourers and small farmers, the major impact of floods is felt by the settlements of poorer sections of populations in the developing countries living in flood prone areas and the effects of earthquakes are felt by poor families living in fragile households. It is ironical that these very sections of society are at the receiving end of various economic policies being pursued to promote globalisation. They are becoming poorer and hence more dependent on the state to cope up with adversity in an environment where the state is gradually receding from all sectors of welfare. This has major implications when people are struck by natural calamities as evidenced in the relief and rehabilitation measures undertaken at such times.

What is more, under certain circumstances development can increase disaster proneness. The location of a dam in an area of high seismic activity, the construction of roads in difficult terrains or unstable geomorphologic conditions and promotion of water intensity crops in areas of unpredictable rainfall are examples of development measures dictated by policies of globalisation leading to or aggravating the phenomena of natural calamities. In spite of the absence of prediction mechanisms to pinpoint the location, the timing and intensity of natural disasters, the preparedness, appropriate management, the pre and post operative mechanisms would go a long way in mitigating people's suffering.

With these remarks, we now discuss briefly various kinds of natural disasters.

2.3 EARTHQUAKES

Ancient people believed that earthquakes occur whenever evil deeds outweigh the good deeds on the Earth. Subsequently, earthquakes were known to have resulted due to the rumbling sound in the Earth caused by the movement of hot air masses trying to escape from the hollowed outer parts of its interior. With the invention of highly sensitive seismic instruments, and advancement of science, and studying the pre and post effects of earthquakes in different parts of the world, the geoscientists and seismologists are able to explain the possible reasons for the occurrence of earthquakes. But there have been different explanations for earthquakes in different parts of the world.

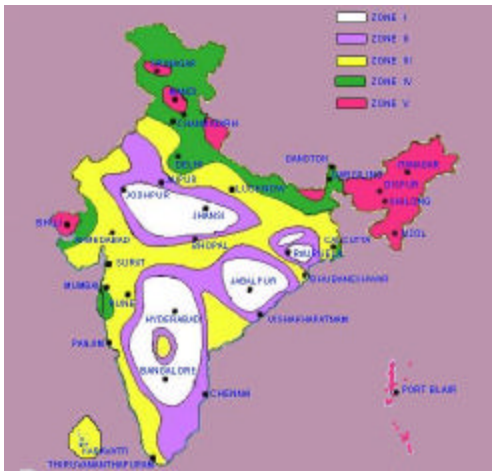


Fig.2.2: Seismic zones in India (**Source** :http://gujarat-Earthquake.gov.in/final/seismic.html)

It is now generally accepted that an earthquake is a vibration(s) of the Earth produced by the release of energy. This energy radiates in all directions from its source (epicentre). Earthquakes can also occur because of atomic (nuclear) explosions or by volcanic eruptions. Large reservoirs with their hydro-static pressure of water may also induce earthquakes. In Fig. 2.2 you can see the various seismic zones of India. These are explained below:

- **Zone V**: This is the most severe seismic zone and is referred to as Very High Damage Risk Zone.
- **Zone IV:** This is referred to as High Damage Risk Zone.
- **Zone III**: This is termed to as Moderate Damage Risk Zone.
- **Zone II:** This zone is referred to as Low Damage Risk Zone.
- **Zone I**: This zone is termed as Very Low Damage Risk Zone.

In order to understand the strength and severity of an earthquake, it is necessary to measure its intensity. There are several methods to measure the intensity by the effect an earthquake produces on life and property. Two Italian seismologists Rossi and Forel introduced a scale known by their names. It consists of ten divisions: the higher the number on the scale, the greater will be the damage caused. This scale was found to be unsuitable and subsequently Mercale scale or Richter scale was introduced.

The Richter scale describes the amplitude of the earthquake wave radiating out in all directions from the focus (epicentre) which is closely related to the amount of energy released. This is also a measure of ground motion as recorded on a seismograph. A

relation between the Mercalli number, characteristic and the Richter scale are given in the Table.2.3.

Table 2.3: Relation between the Mercalli number, characteristic and the Richter scale

Mercalli No.	Effect	Characteristic	Richter scale
I	Instrumental	Detected by seismographs	less than 3.5
II	Feeble	Noticed by some people at rest	3.5
III	Slight	Similar to vibration of a passing truck	4.2
IV	Moderate	Felt indoors, parked cars rock	4.5
V	Rather strong	Most sleepers wake up	4.8
VI	Strong	Trees sway, furniture moves, some dam age caused	5.4
VII	Very strong	General alarm, walls crack	6.1
VIII	Destructive	Weak structure damaged	6.5
IX	Ruinous	Houses collapse, ground cracks	6.9
X	Disastrous	Many buildings destroyed/ razed; Rails bend	7.3
XI	Very Disastrous	Few buildings survive; land slides occur	8.1
XII	Catastrophic	Total destruction, ground formed waves	greater than 8.1

The Gujarat Earthquake 2001

http://www.ndmindia.nic.in/ gallery.htm

The Bhuj Earthquake that shook the Indian State of Gujarat on the morning of January 26, 2001 (Republic Day) is one of the two most deadly earthquakes to strike India in its recorded history. One month after the earthquake, the Government of India figures placed the death toll at 19,727 and the number of injured at 166,000. Indications are that 600,000 people were left homeless, with 348,000 houses destroyed and an additional 844,000 damaged. The Indian State Department estimates that the earthquake affected, directly or indirectly, 15.9 million people out of a total population of 37.8 million. More than 20,000 cattle are reported killed. Government estimated the direct economic losses at $1.3 billion. Other estimates indicate losses may be as high as $5 billion.

A significant part of the damage could have been avoided had local building codes been effectively implemented. Many new buildings had not been properly designed, had not been built on foundations strong enough to resist earthquakes, and had not been sited in areas where the effects of earthquakes would have been diminished.

Source: http://www.cires.colorado.edu/~bilham/Gujarat2001.html

The number, scale and characteristics are deceptive many a times. There have been instances when a lower number caused most severe damage depending on the distance of the place to the focus (epicentre), the density of population, the nature of civil constructions, the nature of the ground and the concentration of physical structures on the ground.

There have been experiments to predict an earthquake and determine the zones that are prone to the earthquakes. However, most of them do not prove to be very satisfactory. For example, changes in seismicity, physico-chemical changes, changes in landforms, changes in animal behaviours are some of the parameters that could lead to the prediction of an earthquake. Though various theories have been developed in the method of prediction, at practical level, none seems to work. Of late, several strategies have been proposed – artificially inducing controllable earthquakes of very small intensity to reduce the building up of energy in the Earth's crust or releasing the stress before it reaches critical levels through underground nuclear explosions. But these may turn out to be uncontrollable to be experimented beyond the laboratories.

It is now accepted that people must be made aware of the methods of minimising the risks. Training the public in Earthquake Resistance Construction in the earthquake prone areas may yield some results.

You may like to reflect on the issues discussed so far. Try the following exercise.

SAQ 1

Collect details about some natural calamities that have occurred in your region in the recent past. Were any of these a consequence of changes in the environment due to human activities? Discuss.

2.4 FLOODS, CYCLONES AND TSUNAMIS

Water is essential for life. However, there are certain phenomena associated with the flow of water in nature that can cause untold misery to human beings. Principal among these are: Floods, cyclones and hurricanes. The recent tsunami caused a great deal of damage in South Asian countries and, therefore, we have included it in our discussion. We discuss some of these calamities briefly.

Floods

Floods are the most common of all natural calamities. Floods regularly claim thousands of lives and adversely affect millions of human beings annually world wide. Bangladesh alone is by far the most flood prone country accounting for about two thirds of global loss of life. India accounts one fifth of global death count and loss of Rupees 600 million every year on an average. More than the loss of life and damage to property, millions of people are displaced every year due to floods in the South Asian countries.

A flood is the discharge of water that exceeds the canal capacity of the river.
Floods are caused by different factors that include:

- climate extremes – heavy and prolonged rainfall
- melting of snow and ice
- collapse of dams
- land slides
- silting of river beds reducing the carrying capacity of rivers
- lack of coordination between officials of adjoining districts or states facing similar problems.

There was a case study of two adjoining districts, for example, A and B that were threatened by floods. The canals flowing from district A were bringing huge quantities of water into villages in district B. There was one canal which breached off from district A into dryer areas. Since its elevation was higher, it was not carrying any

water resulting in heavy inflow of water into district B. The collector of district B, in consultation with his counterpart in district A, installed pumps a little upstream, and pumped water into the canal flowing into dryer areas. This not only saved many villages of district B from inundation but also resulted in meaningful use of surplus flood water for irrigation of dry areas. The collector of district A, however, had to pacify the political discontent and control the misinformation about raising water levels in his district.

This may be only an exceptional example not possible to apply everywhere, but highlights the point that the officials on field, if they search for solutions, can find solutions that may reduce the effects of floods and alleviate the suffering of people and save the properties.

Floods in Bangladesh and India – 2004

The mighty Brahmaputra river, swollen by rain and a Himalayan burst dam, flooded huge swathes of North India and Bangladesh, killing dozens and forcing millions to seek refuge on higher ground in June-July, 2004. In Assam, that brought the death toll from the annual monsoon floods to more than 70 in India and neighbouring Nepal.

In neighbouring Bangladesh, officials said 13 people had died and an estimated 3 million people were marooned – cut off in their flooded homes and on patches of high ground. In the eastern Indian states of Assam and Bihar, military helicopters and soldiers in motor boats tried to rescue thousands of stranded people and dropped cooked food.

All rivers in Assam, including the main Brahmaputra, were overflowing after a week of incessant rains and more than two million people became homeless because of floods. Dams burst in the impoverished state of Bihar, at least 14 people were drowned in two separate incidents when their boats capsized in the swollen Bagmati river.

More than 600,000 people were affected in Bihar. A dam at Tsatitsu lake in the Himalayan kingdom of Bhutan had burst, spilling water into tributaries of the Brahmaputra and flooding Assam. Floods and landslides left thousands stranded on high ground in the neighbouring mountainous kingdom of Nepal, killing at least 12 people. While Assam and Bihar battled floods, the north-western and central regions of India had less rain than normal in the June-September monsoon, raising doubts about the fate of major crops such as rice and oilseed crops.

The north-eastern Bangladesh town of Sylhet, at the centre of the worst-hit district, lay under 60 cm (two feet) of water and road and rail links were cut or threatened by the rising water. The floods covered nearly 20 to 64 administrative districts. Thousands of families had sought refuge on roads and embankments as well as in schools, government buildings and boats after the floods forced them to abandon homes.

Source: **http://www.disasterwatch.net/news/millions%20homeless_south%20asia.htm**

It is possible to reduce the adverse effects of floods by

- construction of dams and reservoirs at appropriate places,
- strengthening the embankments on rivers and canals,
- improving the carrying capacities of rivers, canals and reservoirs by periodical desilting and deepening operations,

- enchancing the deepening, widening and lining of canals and periodically deepening and desilting the drainage channels,
- diversion of flood waters from a river or a channel into other canals and channels,
- introducing flood plain management techniques, and
- preparing natural ponds, reservoirs, tanks and leading channels by removing obstructions and avoiding constructions.

Though it is known or easy to predict before hand the onset of floods, the administration, and people, more often than not, do not wake up to the situation before it is too late to press into service the preventive measures. A study of the damage caused by the floods often indicates that the damage to property and loss of life or displacement of people could be reduced if only the Governmental agencies coordinate their activities and act in time to address the calamity.

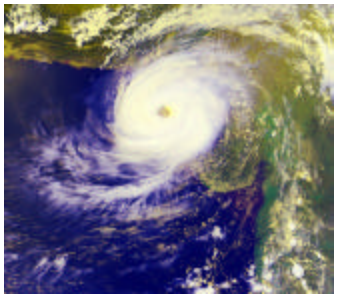
Cyclones

One of the most common coastal calamities is the cyclone. Cyclones claim many lives and cause immense damage to property every year.

A tropical cyclone that struck northern Bay of Bengal in 1970 caused tidal waves of 6 metres height killing three hundred thousand people and destroying 65% of the total fishing capacity of the coastal region. During the cyclonic storms winds move forward with a speed of 25 km/hr, and at times reach 200 km/hr destroying and annihilating everything or anything on their path.

Cyclones are caused in the tropical belt when sea water gets heated up to 27°C and more, so that low pressure areas develop above the water levels. The low pressure areas remain stationary for three to four days and draw energy from the sea surface. As the pressure in the centre falls, the wind speed increases and cloud burst starts spiralling around the centre causing squalls. As the pressure falls in the centre, the winds in the surrounding areas rush inwards creating spirally moving storms. The cyclone then moves landward towards areas of lowest pressure.

Cyclones



The history of no state is as stormy as that of Andhra Pradesh. In this century alone, the state has been pounded by 18 devastating storms causing enormous loss of life and property. The Diviseema cyclone, the worst last century, left more than 10,000 dead and ravaged property worth Rs. 175 crore in 2300 villages. Andhra Pradesh has the longest coastline of all the states in the country. The 760 km length along the sea has laid bare the state to the fury of cyclones that have been a regular feature in the Bay of Bengal. If 1977 saw Diviseema wiped out, 1996 saw Nellore-Prakasam-Konaseema reel under the cyclones of the Bay. The disaster which hit the coast has taken a toll of thousands of lives. Millions of acres of ready-to-harvest paddy have been destroyed, horticultural plantations have been lost. It will take a generation to overcome this loss. The cyclone storm that lashed the paddy rich East Godavari district, especially Konaseema region, has wrought havoc on the coconut grooves, paddy fields and property. The killer cyclone destroyed about five million coconut trees spread over an area of 1000 sq. km. in Konaseema.

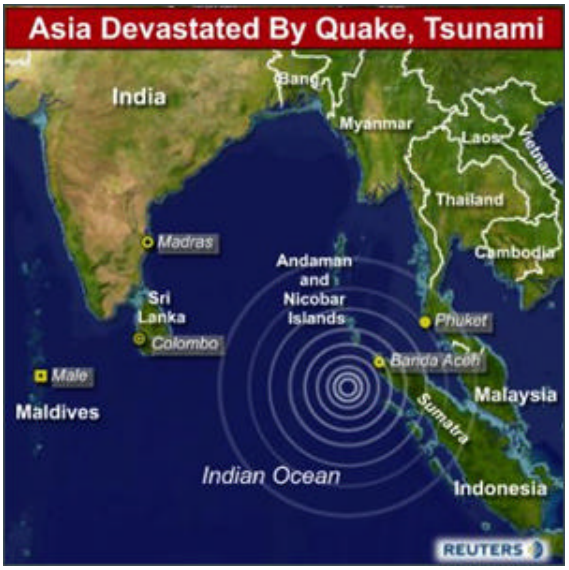
Source: http://www.envis.nic.in/soer/ap/cme_cyc_AP.htm

Today, with the advancement in weather prediction techniques, remote sensing satellites and cooperation between countries in sharing information on weather

conditions, it is possible to predict the birth of a cyclone and monitor its movements to pinpoint the area where it hits the coast. In spite of this, the damage caused is very severe, the well planned relief operations going haywire in the last minute. In the areas that are prone to cyclones, the governmental and non governmental agencies have perfected the drill and the routine to be followed in the pre, during and post cyclonic storms. But more often than not, lack of coordination between different agencies or working at cross purposes and starting the preparations at the last minute can undo all the planning. The case in point is the cyclone shelters constructed along the eastern coast in Andhra Pradesh. None of the shelters is well maintained and have become uninhabitable and unusable when needed.

Tsunamis

Tsunamis are among the most terrifying natural hazards known to man and have been responsible for tremendous loss of life and property. Because of its destructiveness, tsunami has an important impact on the human, social and economic sectors of our societies. In the Pacific Ocean where the majority of these waves have been generated, the historical record shows tremendous destruction.



A tsunami is a wave in the ocean or in a lake that is created by a geologic event. They are also known as tidal waves or seismic sea waves. Most tsunamis are very weak and have heights of only a few inches (or centimetres). But the intensity varies from time to time. Near the place where they are created, these larger tsunamis may have heights of many feet (metres). As they spread out or move into the deep ocean, their heights decrease to a foot or less. However their heights increase again as the tsunami waves reach shallow water near impact areas. The expected heights for these larger tsunamis are around 30 – 70 feet. Tsunamis are most often caused by earthquakes and landslides. Volcanic eruptions can also cause tsunamis.

On 26th December 2004 the Indian coastline experienced the most devastating tsunami in recorded history. The tsunami was triggered by an earthquake of magnitude 9.0 on the Richter scale at 3.4° N, 95.7° E off the coast of Sumatra in the Indonesian Archipelago at 06:29 hrs IST (00:59 hrs GMT).

The 2004 Indian Ocean earthquake devastated the shores of **Indonesia**, **Sri Lanka**, **India**, **Thailand**, and other countries with waves of up to **15 m** (50 feet) high, even reaching the east coast of **Africa**, **4500 km** (2,800 miles) west of the **epicentre**. At least 79,900 people were killed by the earthquake and tsunami in Indonesia. Tsunamis killed at least 41,000 people in Sri Lanka, 10,000 in India, 4,000 in Thailand, 120 in Somalia, 90 in Myanmar, 66 in Malaysia, 46 in Maldives, 10 in Tanzania, 2 in Bangladesh, 1 in Seychelles and 1 in Kenya and the count is still taking place.

Tsunamis caused damage in Madagascar and Mauritius and also occurred on Cocos Island and Reunion. The tsunami crossed into the Pacific Ocean and was recorded in New Zealand and abng the west coast of South and North America. The earthquake was felt (VIII) at Banda Aceh and (V) at Medan, Sumatra and (II-IV) in parts of Bangladesh, India, Malaysia, Maldives, Myanmar, Singapore, Sri Lanka and

Thailand. This is the fourth largest earthquake in the world since 1900 and is the largest since the 1964 Prince William Sound, Alaska Earthquake.

The mangrove forests and coral reefs about which you have studied in Blocks 1 and 2 of MED-001 are natural defences against tsunamis.

Mangroves as a shield

"Though we cannot prevent the occurrence of such natural calamities, we should certainly prepare ourselves to mitigate the impact of the natural fury on the population inhabiting the coastal ecosystems. Our anticipatory research work to preserve mangrove ecosystems as the first line of defence against devastating tidal waves on the eastern coastline has proved very relevant today. The dense mangrove forests stood like a wall to save coastal communities living behind them," said M.S. Swaminathan, Chairman, M.S. Swaminathan Research Foundation (MSSRF), Chennai. The mangroves in Pitchavaram and Muthupet region acted like a shield and bore the brunt of the tsunami.

An anticipatory research programme, with a two-pronged strategy, to meet the eventualities of sea level rise due to global warming started few years ago. One is to conserve and regenerate coastal mangroves along the eastern coast of the country, and the second is transfer of salt - tolerant genes from the mangroves to selected crops grown in the coastal regions. The MSSRF will soon be publishing a scientific document 'Tsunami and mangroves' highlighting the need to conserve and rehabilitate mangroves as the frontline defence against tidal forces. (The Hindu, 28 December, 2004)

Human Failure: Even though the tragedy could not have been averted altogether, thousands of precious lives could have been saved; there was a collective failure of the tremendous knowledge base in this country. The unfortunate fact is that even with routine things such as flood warning systems in place, precious lives continue to be lost in this country during disasters such as cyclones and floods. Somewhere there is both carelessness and callousness in our administrative mechanisms, which fail to act quickly and efficiently when it comes to preventive action to minimize the loss of lives. But one awaits the day when we will boast of a collective sensitivity that considers our one billion plus population, including the poor and the unprivileged, not a liability but an asset – human capital of the extraordinary variety that deserves to be nurtured and as zealously guarded.

The Government proposes to install the equipment required for predicting tsunamis within the next two-and-a-half years. The indigenous warning system includes putting in place a Deep Ocean Assessment and Reporting system, around 20 data buoys and a software programme that would help predict the location, time and height of any tidal formations like tsunamis based on the changes and disturbances detected underwater following seismic changes. India would approach the Pacific Tsunami warning centre and countries such as Indonesia, Thailand and Myanmar for required international co-operation in its proposed software programme for the networking of the available data on tsunami and deep water oceanic changes.

SAQ 2

a) Discuss the causes of floods in your region/country.

b) What steps can be taken to prevent and mitigate human suffering due to floods, cyclones and tsunamis ?

2.5 DROUGHTS

A 'drought' can be defined as a prolonged period of unusually dry weather, with little rainfall, in a region where rains are normally expected. As such a drought differs from a dry climate which is usually associated with a region that is normally or

seasonally dry. Droughts often last for years. Drought is a creeping calamity because it develops slowly and has a prolonged existence. Droughts are not confined to any particular tectonic or topographic setting and their impact extends over very large areas and regions.

The impact of drought affects the developing countries more severely than the developed countries. The early effects of drought from endemic seasonal hunger and the resulting malnutrition cause immense misery to the poor people.

Drought in Rajasthan – 2000

news.bbc.co.uk/.

Rajasthan, the largest State in India with an estimated population of about 54 **million** was in the grip of a **severe drought in the year 2000**. Out of the 32 total districts in the State drought was prevalent in 31 districts and among these 25 districts were affected severely. Around 73.64% villages were under the clutches of drought; affecting nearly 33.04 million people and 39.97 million cattle. The severity of the drought could be judged from the fact that **out of a total of 2647 major water reservoirs only 300 were filled in that year. Also, nearly 75% to 100% crop had been destroyed due water scarcity.** All this has caused loss of livelihood leading to mass migration in search of employment.

Source: http://www.un.org.in/UNDMT/states/rajas/dstatus.htm

Droughts can be classified into four types:

i) **Meteorological drought**: rainfall deficit

ii) **Hydrological drought**: river flow deficit

iii) **Agricultural drought**: soil moisture deficit

iv) **Famine drought**: food deficit

Though climate is usually the prime reason for the triggering of drought, the situation is often made worse by the way people use the water resources. Felling trees for firewood, denuding the forest for agricultural or housing purposes, mining, unscientific farming method, indiscriminate drawing of ground water are identified as causes of droughts. It is argued that serious droughts in developing countries are more a function of global developmental policies than climatic conditions.

Droughts produce a series of direct and indirect impacts that usually extend far beyond the area experiencing the actual water shortage.

These may be classified as

- **Economic** – Loss of crop, dairy, livestock, fishery produce;
- **Environmental** – Damage to plant and animal species, erosion of soils; and
- **Social** – Food shortage, damage to health, conflicts between water users.

It is possible to take precautions in drought prone areas by constructing reservoirs, educating people in water conservation, scientific farming and optimal use of ground water resources.

Ground water, which is found in aquifers below the surface of the Earth, is one of the most important natural resources. Ground water accounts for about 38 percent of the water in India and the city water departments supply this to households and businesses (public supply). It caters to the need of drinking water for more than 97 percent of the rural population.

Water Harvesting Measures

One of the effective measures to combat drought and the resulting water shortage is to adopt water harvesting measures. It means capturing rain where it falls or capturing the run off in your own village or town and taking measures to keep that water clean by not allowing polluting activities to take place in the catchment. You have studied in Unit 14 of MED-001 that water harvesting can be undertaken through a variety of ways. Some of these are:

- Capturing runoff from rooftops,
- Capturing runoff from local catchments,
- Capturing seasonal floodwaters from local streams, and
- Conserving water through watershed management.

These techniques can serve the following purposes:

- Provide drinking water,
- Provide irrigation water,
- Increase groundwater recharge,
- Reduce storm water discharges, urban floods and overloading of sewage treatment plants,
- Reduce seawater ingress in coastal areas.

In general, water harvesting is the activity of direct collection of rainwater. The rainwater collected can be stored for direct use or can be recharged into the groundwater. Rain is the first form of water that we know in the hydrological (water) cycle; hence it is a primary source of water for us. Rivers, lakes and groundwater are all secondary sources of water. In present times, we depend entirely on such secondary sources of water. In the process, it is forgotten that rain is the ultimate source that feeds all these secondary sources and remain ignorant of its value. Water harvesting means to understand the value of rain, and to make optimum use of the rainwater at the place where it falls.

Source: http://www.rainwaterharvesting.org/whatiswh.htm

We now recount an illustrative example of proactive water harvesting in India.

The Hyderabad Example

The Hyderabad Metropolitan Water Supply and Sewerage Board (HMWSSB) has set up an ambitious plan of taking up several water harvesting measures in the twin cities of Hyderabad and Secundrabad and its vicinity through active involvement of people during the next one year to improve the ground water level. The Water Harvesting measures, under the Neeru-Meeru (Water and You) Programme, include construction of a recharge pit or a mini-treatment unit, planting a sapling or any other action that would improve water recharge, green cover which ultimately increase the ground water levels. Explaining the motivational strategy at length, the Government officials said that they have plans to sensitise different opinion makers like ex servicemen, retired officials, women's groups and NGOs.

The groups would be sensitised on motivational aspects and techniques of various water harvesting structures. The trained groups would in turn reach out to communities and motivate the people highlighting the importance of rainwater harvesting and its benefits. As part of the strategy, the Board has recently created *water soldiers*, by sensitising ex-servicemen. It has also proposed to involve the student community in a big way so that the schools, colleges and other institutions would contribute to the cause of improving ground water table, thus enabling it to cover 25% of the 7 lakh houses with some type of water harvesting method. You can find out more about this effort at the website:

http://www.hyderabadwater.gov.in/RWH_Note.htm.

While natural calamities cannot be prevented from occurring, we can improve our preparedness and management of these calamities to minimise loss of life, property and human suffering. In this section, we shall discuss these very issues.

2.6 PREPAREDNESS FOR CALAMITIES

There have been specific ways of countering and minimising natural calamities in general but some important strategies can be adopted.

Emergency preparedness is to be viewed as a programme of long term development activity whose goal is to strengthen the overall capacity and capability of a country to manage efficiently all types of emergencies and bring about an orderly transition from relief through recovery and back to sustainable development.

Emergency preparedness is an on-going multi-sectoral activity. It forms an integral part of the national system responsible for developing plans and programmes for emergency management, prevention, mitigation, preparedness, response, rehabilitation and reconstruction.

We now briefly describe the UNEP programme for disaster preparedness.

Prevention and preparedness to reduce the costs of disasters

The fundamental goal of the UNEP disaster management programme is to reinforce the centrality of environmental concerns in disaster management. The other cornerstone is the adoption of preventive strategies and practical measures to reduce the potential loss of human lives and property, as well as destruction of the environment.

The success of this approach depends on increasing public awareness of the risks that natural, technological and environmental hazards pose to societies, and on educating people about the value of existing approaches for prevention and preparedness. UNEP contributes to this process through its programmes on environmental law, early warning and assessment, and Awareness and Preparedness for Emergencies at Local Level (APELL).

UNEP's APELL programme, developed in conjunction with governments and industry, recognises that the incidence and effects of environmental disasters can be reduced by prevention and preparedness initiatives at the local level. The APELL concept has been successfully introduced to more than 30 countries and in more than 80 industrial communities world wide. The UNEP strategy includes the promotion of cleaner production processes and technologies, and helping countries establish cleaner production centres.

A major objective of the UNEP early warning and assessment programme is to evaluate the increasing vulnerability of human society due to widespread environmental and climatic change in order to emphasise the need for sound integrated environmental management, and to provide early warning of emerging threats for preparedness and response.

The International Decade for Natural Disaster Reduction (IDNDR) was established by the United Nations to function for a period of ten years starting January 1990. The basic aim is to encourage further recent trends in natural disaster management from a reactive strategy of post disaster improvisation, which relies heavily on relief aid, to a more pro-active strategy of pre-disaster planning and preparedness.

According to IDNDR (1992), the five goals of the Decade were:

i) To improve the capacity of each country to mitigate the effects of natural disasters expeditiously and effectively, paying special attention to assisting developing countries in the assessment of damage potential and in the establishment of early warning systems and disaster resistant structures where needed.

ii) To devise appropriate guidelines and strategies for applying existing scientific and technical knowledge, taking into account the cultural and economic diversity among nations.

iii) To foster scientific and engineering endeavour aimed at closing critical gaps in knowledge in order to reduce loss of life and property.

iv) To disseminate the existing and new technical information related to measures for the assessment, prediction and mitigation of natural disasters.

v) To develop measures for the assessment, prediction, prevention and mitigation of natural disasters through the technical assistance programmes and technology transfer, demonstration of projects, and education and training, tailored to specific disasters and locations and to evaluate the effectiveness of those programmes.

The figure below presents the framework for disaster management. You may like to examine its applications in your specific context and modify it.

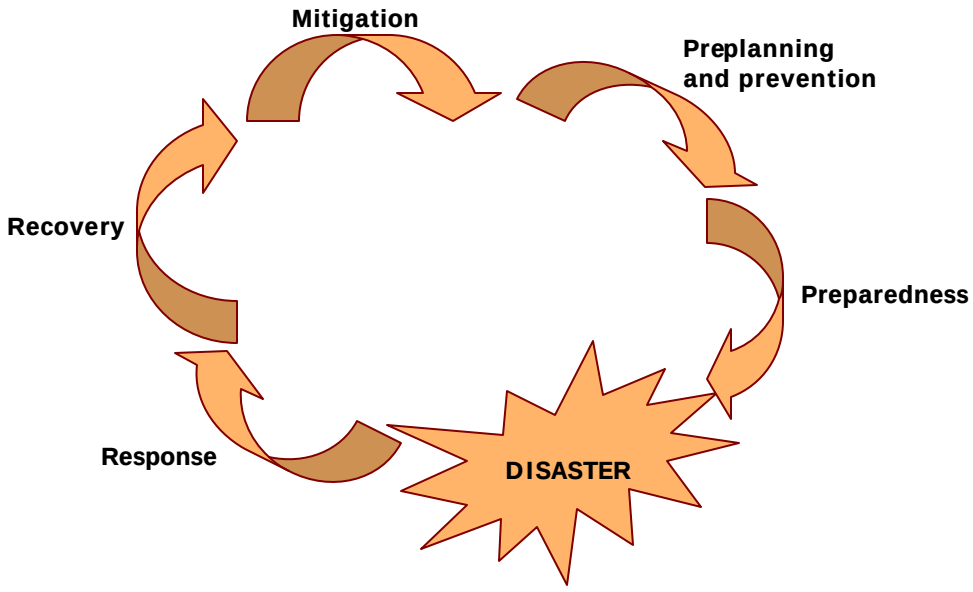


Fig.2.3: A framework for disaster management

Effective risk management of any calamity depends on the implementation of a sequential series of actions. The individual stages often overlap but it is crucial that they operate as a closed loop because the major objective is to learn from the past experiences and prepare an action plan based on the feedback.

- Pre-planning covers a wide range of activities like construction of defensive engineering works, land use planning, formulation, dissemination and maintenance of evacuation plans;
- Preparedness reflects the degree of alertness, immediately before and after the occurrence of calamity, arrangement for emergency warnings and preparedness based on earlier experiences;
- Response deals with events immediately before and after the occurrence of the calamity and pressing into service relief activities;
- Recovery and reconstruction are long term activities that attempt to return to normalcy after the occurrence of the calamity.

It is unfortunate but true that although environment is clearly something that humans value, it is usually low on the priorities of people except when they are faced with threats to their own lives or immediate possessions.

We end this section with an exercise for you.

SAQ 3

a) Analyse the various dimensions of natural disaster management in your own context taking specific examples to highlight your contentions.

b) What steps can be taken to prevent and mitigate human suffering due to droughts?

We now summarise what you have studied in this unit.

2.7 SUMMARY

- Most natural calamities like earthquakes, floods, droughts, and cyclones cannot be predicted in advance and when they occur they cause great loss of life and extensive damage to property and infrastructure. Natural calamities have been occurring from times immemorial but of late the damage caused has become qualitatively and quantitatively more, resulting in loss of human life and property over larger regions disrupting essential services and social structure.

- The United Nations called upon the National Governments to integrate disaster mitigation programmes with the development planning. Development can be the process which enhances society's access to resources and their application to improve quality of life of the members of society in terms of their wellbeing and access to amenities; the same development can contribute to the frequent occurrence of natural disasters.

- The ability of an individual, family, community and nations to protect themselves, against the adverse effect of a natural calamity is determined by their economic strength. It is estimated that 95 percent of deaths from a natural calamity occur among 66 percent of the world population living in poorer countries. For example, the major impact of drought is felt by agricultural labourers and small farmers, the major impact of floods is felt by the settlements of poorer sections of populations in the developing countries living in flood prone areas and the effects of earthquakes are felt by poor families living in fragile households.

- Under certain circumstances development can increase disaster proneness. The location of a dam in an area of high seismic activity, the construction of roads in difficult terrains or unstable geomorphologic conditions and promotion of water intensity crops in areas of unpredictable rainfall are examples of development measures dictated by policies of globalisation leading to or aggravating the phenomena of natural calamities.

- In spite of the absence of prediction mechanisms to pinpoint the location, the timing and intensity of natural disasters, the preparedness, management, the pre and post operative mechanisms help in the mitigation of people's suffering and in reconstruction mechanisms.

2.8 TERMINAL QUESTIONS

1. Explain the factors that cause natural calamities.

2. What are the basic aims of the International Decade for natural disaster reduction?

3. Elucidate the strategies that can be adopted to mitigate the suffering caused by natural disasters.

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UNIT 3 MAN-MADE DISASTERS

Structure

3.1 Introduction
Objectives
3.2 Man-made Disasters
3.3 Toxic Wastes
Disposal of Toxic Wastes
3.4 Wars and Population Displacement
Direct and Indirect War-time Impacts
Nuclear Weapons
3.5 Industrial Accidents
3.6 Global Warming
3.7 Ozone Depletion
3.8 Summary
3.9 Terminal Questions

3.1 INTRODUCTION

In Unit 2, you have studied the environmental calamities caused by natural disasters like earthquakes, floods, droughts, cyclones, etc. bringing miseries to life and wreaking havoc on properties. In the present unit, we focus on man-made disasters. Man-made disasters are major causes of premature death, impaired health status and diminished quality of life. You have learnt that a disaster can be defined as an occurrence that causes damage, ecological disruption, loss of human life or deterioration of health on a large scale sufficient to warrant an extra ordinary response from outside the affected community or area. A hazard is any phenomenon that has the potential to cause a disaster or cause disruption or damage to people and environment. There are many types of disasters beyond those that are usually considered “natural”. The relative number of injuries and deaths differ, depending on a number of factors such as type of disaster, the density and distribution of population, condition of environment, degree of preparedness and the opportunity of warning.

Objectives

After studying this unit, you should be able to:

- distinguish between natural calamities and man-made disasters;
- give examples of man-made disasters and list preventive measures; and
- explain the impact of man-made disasters on people.

3.2 MAN-MADE DISASTERS

Man-made disasters may be classified into three types:

i) Sudden disasters,
ii) Insidious and continuing disasters, and
iii) War and civil conflicts.

Sudden disasters are those in which human factors are responsible, rather than natural factors. The release of methyl isocyanate at the pesticide plant in Bhopal, India in 1984, and the leakage of radio active substances following an explosion at the Chernobyl nuclear power reactor in the Soviet Union in 1986 are a couple of examples of sudden disasters. Sudden disasters that are considered ‘natural’ may often be caused by preceding human activities. Mining catastrophes, earthquakes, sudden floods, and landslides may be the result of indiscriminate deforestation or of construction of dams or by seemingly unrelated human activity. Of late, landslides

have been occurring at frequent intervals in the hilly terrains of India especially in the Uttaranchal region. The effects of landslides, both natural and man-made, are devastating. The road widening activities have greatly damaged the fragile environment of the region thereby disrupting the human settlements apart from causing enormous damage to transport and communication networks. Development and installation of appropriate precautionary systems will enable in reducing the risks against the landslide hazards.

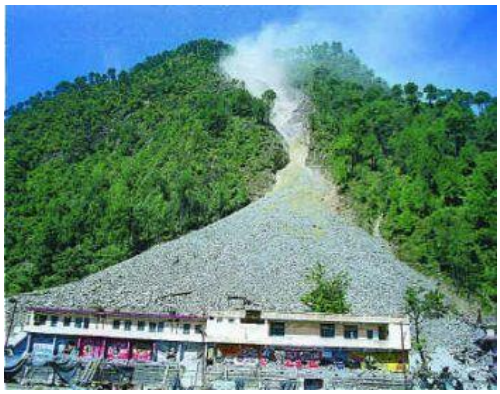


Fig.3.1: Landslides in Uttaranchal
(**Source:** http://www.hinduonnet.com/)

Insidious and continuing disasters include examples like the leakage of toxic chemicals from a dump site at Love Canal in Buffalo; the tainting of the soil in Times Beach with dioxin oils sprayed on the roads and leakage of radio active materials dumped at wastage dumps at nuclear weapons production facilities. Some natural phenomenon like prolonged drought may be examples of continuing disasters. Disasters like global warming or the green house effect caused by heat trapping gases in the atmosphere released by burning of fossil fuels, use of chlorofluorohydrocarbons in aerolised perfumes and acid precipitation also come under the disasters under this category.

Since World War II, there have been about 127 wars and civil conflicts resulting in 21.8 million deaths involving more than 50 percent of civilians. The proportion of civilian casualties has been increasing in the wide ranging air strikes and modern warfare tactics putting entire populations at risk. Disrupting food production, imperilling fragile ecosystem and forcing native populations to flee from their natural habitats, have been the results of war and civil conflicts.

Consequences of Man-made Disasters

Man-made disasters can cause short term morbidity and mortality, and damage the quality of life and cause premature deaths. The causes of short term morbidity result in injuries, emotional stress, epidemics and increase in indigenous diseases. One glaring example is that of forest fires. Every year millions of tons of forest all around the world are being destroyed and many animals and plant species are disappearing due to deforestation and fires, both a result of human activity.

Fig.3.2: Forest fires

Drastic reduction in forests has significant effects on the delicate global ecosystem. The public health response to man-made disasters is the primary prevention, i.e., the prevention of the occurrence of the disaster. Tighter safety regulations of chemical production facilities of hazardous substance would reduce the hazards substantially. Locating these facilities away from populated areas and human habitats would reduce the loss of human life and property. Built-in mechanisms to counter human errors, ensuring safety regulations with quality inputs in engineering and technological safety measures as well as early warning system would result in reducing these disasters, if not completely eliminate them.

Fig.3.3 gives a general spectrum of environmental calamities and man-made disasters. The degree of human responsibility for a calamity/disaster increases from geophysical calamities to society induced disasters like smoking.

It may be inferred that except natural disasters all other disasters can be prevented. It has been estimated that the number of man-made disasters are more in developing countries (in Asia and Africa) than in developed countries (in Europe and America). One of the causes for man-made disasters is the emergence of free market global economies in which economic factors play a central role in decision making in the production, use of resources and treatment of wastes. This also results in short time horizon over which decisions are taken for profit maximization at the cost of safety standards.

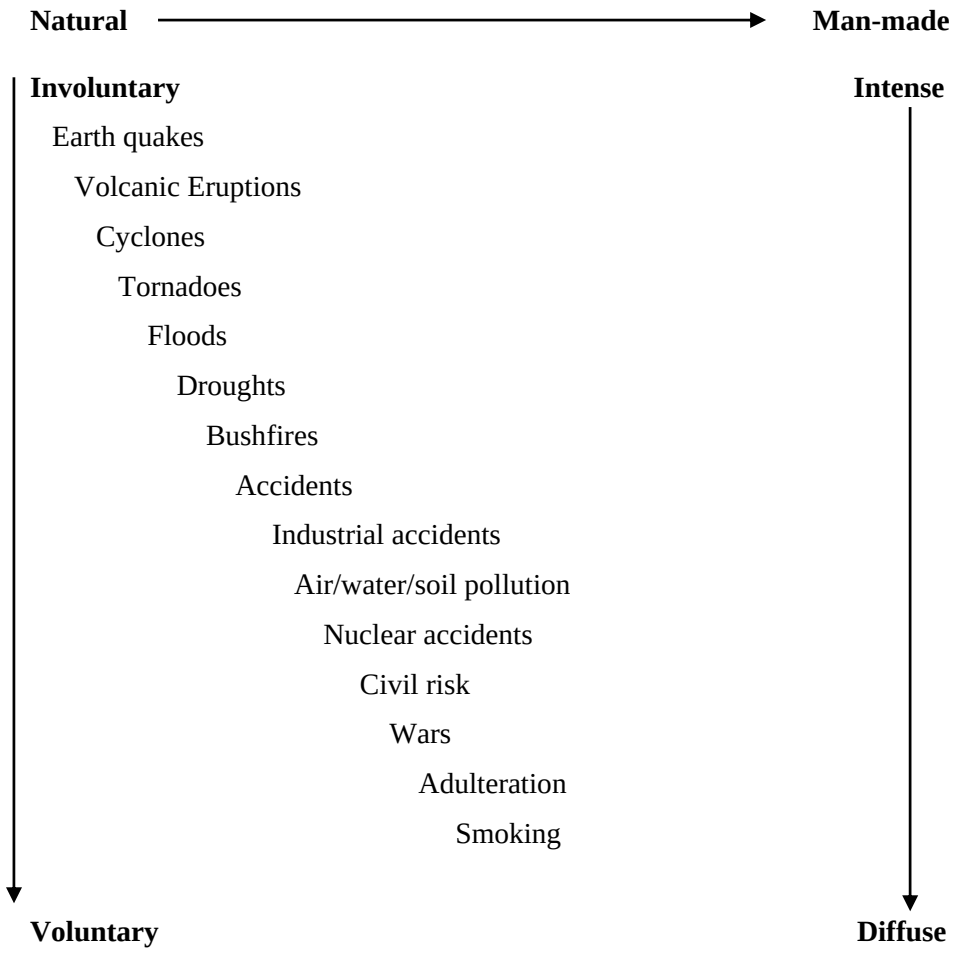


Fig.3.3: General spectrum of environmental calamities and man-made disasters

SAQ 1

Describe any man-made disaster that has occurred in your region in the recent past. Analyse the steps taken to handle its consequences.

3.3 TOXIC WASTES

The peculiar nature of human beings is that they change their environment to suit their biological and social needs. In this transaction they utilize the material necessities (resources) and produce worthless and some times harmful by-products. These by- products are termed as wastes and may be in the form of gases, liquids or solids. Direct or indirect exposure to toxic wastes and hazardous chemical agents has been implicated in numerous adverse effects on humans from cancer to birth defects. The old pollutants like lead, mercury, industrial solvents and pesticide residues, are of great concerns in many parts of the world. There is a reasonable level of understanding of their effects on human health. Although protective measures are not always adequately implemented, there are provisions to reduce their harmful effects on human health and environment. But each day newer and newer industrial toxics are found in several household products, chemicals and pharmaceuticals. There is far less knowledge about the long term toxicological effects on human health and environment. It has become a common occurrence of accidents in the transportation

of industrial and hazardous waste products and inadequate management of disposal of these wastes.

So important was the problem of avoiding dumping hazardous wastes in the backyards of poor countries that two important conventions were held and the member countries signed the agreements. The first one was ***Basel convention on the control of trans-boundary movements of hazardous wastes and their disposal (1989) and the second was Bamako convention on the ban of the import into Africa and the control of trans-boundary movement and management of hazardous wastes within Africa (1991)***.

India is increasingly becoming a dumping ground for toxic industrial wastes from developed countries, which can pose serious threats to public health and the environment. While the developed countries ban the use of hazardous substances and even the processes that generate them, the governments of developing nations like India seem to think that they need every dollar and every job that the processing of such substances creates. Thus, brain-damaging mercury and toxic electronic and plastic wastes from the United States; cancer-causing asbestos from Canada; defective steel and tin plates from the European Union, Australia and US; toxic waste oil from the United Arab Emirates, Iran and Kuwait; toxic zinc ash, residues and skimmings; lead waste and scrap; used batteries; and waste and scrap of metals such as cadmium, chromium, cobalt, antimony, hafnium and thallium from Germany, Denmark, Netherlands, United Kingdom, Belgium and Norway are all dumped in India.

Hazardous substances are those that are ignitable, corrosive, reactive or toxic. According to studies, including those by environmental activist groups such as Greenpeace and Toxic Link, every year over 1,00,000 tonnes of hazardous wastes enter India in gross violation of the 1997 Supreme Court order banning such import. Lately, the developed countries have gone another step forward, by shifting production processes that generate hazardous wastes to developing countries. With 101 countries prohibiting waste imports (up from 3 in 1989), South Asian Countries, particularly India, with their lax laws and regulations, are becoming the preferred dumping ground for hazardous wastes. It is not as if there are no laws or international instruments to regulate trade in hazardous wastes. In India, there are the Hazardous Waste Act, 1989, and the May 1997 Supreme Court ruling banning the import of hazardous wastes followed by the orders of February 1998 disallowing auction of hazardous waste stocks in ports and container depots but these legal instruments were never practised. The solution lies in making industries accountable, maintaining precautionary principle, refusing waste from other countries and strengthening local initiatives.

Source: http:// www.flonnet.com/fl2025/stories/200312190019086000.htm

Fig.3.4: Several tonnes of highly toxic mercury waste dumped by Hindustan Lever, a subsidiary of Anglo-Dutch multinational Unilever (owners of Lipton Tea and Dove soap) in the densely populated tourist resort of Kodaikanal and the surrounding protected nature reserve of Pambar Shola, in Tamilnadu, Southern India. (**Source**: www.greenpeace.org.uk/)

3.3.1 Disposal of Toxic Wastes

The output of hazardous wastes worldwide was about 400 million tons in 1990s of which 300 million tons were produced by the OECD countries. These wastes are derived mainly from chemical industries, energy production industries, pulp and paper producing factories, mining industries and leather tanning processes. Though tighter regulatory controls are enforced on these industries in developed countries, resulting in an increased cost of waste treatment and disposal, the developing countries and countries with no stringent control measures have become a haven to shift the production operations from developed countries to the developing countries. Officially, less than 1000 tons of wastes a year are traded to developing countries; the illegal traffic in hazardous wastes poses a serious threat to environment and human health in the developing countries.

One way of combating such illegal trade is through a system called Prior Informed Consent (PIC) for certain hazardous substances in International Trade. Operated by FAO and UNEP, PIC is a procedure that helps the participating countries learn more about the characteristics of potentially hazardous chemicals that may be supplied to them. This in turn generates the necessary public opinion world over to put pressure on the governments to act in a responsible way. The procedure would also help the dissemination of information to other countries and promote a shared responsibility.

Though all wastes are disposed off into the environment, some wastes enter the environment in a controlled manner than others. Some wastes are treated before disposal and others are disposed directly from the source. Wastes produced from the combustion of fuel by motor vehicles are emitted directly into the atmosphere, and sewage wastes are disposed into rivers and oceans. Since air, rivers and oceans are global commons, this common ownership has facilitated unregulated disposal of wastes.

One of the consequences of Technological Revolution in agricultural production processes has been the release of refuse and residual chemicals into the environment. Chemical fertilisers, hybrid feeds for poultries, slaughter house wastes, salt and silt drained from irrigated lands as sediments have been causing irreparable damage to the fertile lands.

Several disposal techniques had been in vogue to manage the hazardous wastes, the most popular being landfills and underground deposits. A case in point was the disposal of water waste contaminated in the production of chemical warfare agents like mustard gas, white phosphorus and napalm outside Denver, Colorado during 1960s. The geology of the area beneath the site looked suitable to dig a disposal well over 3500 m deep to deposit the liquid waste. Soon after, a series of minor earthquakes were detected in the area which had no known history of seismic activity or instability. Between March 1962 and November 1965, over 700 minor earthquakes were monitored in the area. The geologists established direct link of the underground disposal of liquid wastes with the occurrence of earthquakes resulting in the stoppage of this method in 1996.

There is no doubt that the best way to manage the waste is to prevent it at the source wherever possible. The argument that prevention is better than cure is put by the UNEP's Industry and Environment Programme Activity Centre:

> When end-of-pipe pollution controls are added to industrial systems, less immediate damage occurs. But these solutions come to increasing monetary costs to both society and industry and have not been proven to be optimal from an environmental aspect. End-of-pipe controls are also reactive and selective. Cleaner production, on the other hand, is a comprehensive preventable approach to environmental protection.
>
> **(UNEPIE/PAC, 1993:1)**

Cleaner production is achieved by examining all phases, of a product's life cycle, from raw material extraction to its ultimate disposal and reducing the wastage at any particular phase. Thus, cleaner production encompasses:

- Conservation of energy and raw materials,
- Reduction in the use of toxic substances,
- Reduction in the quantity and toxicity of wastes, and
- Extension of product durability.

These measures combined with Equalisation, Neutralisation, Physical, Chemical and Biological treatment of toxic wastes would reduce their adverse effects in their disposal into the environment.

SAQ 2

Discuss the problem of disposal of hazardous waste in your region in the context of globalisation.

3.4 WARS AND POPULATION DISPLACEMENT

Aggression appears to be a fundamental characteristic of human race and violence has been used to resolve disputes since pre-historic times. If a war is defined as a conflict resulting in 1000 or more deaths, there have been 471 wars since 1700

resulting in 100 million fatalities. More than 90 percent of the war deaths in these three centuries have occurred in the twentieth century alone.

Since the end of the Second World War, more than 130 wars and violent internal conflicts have raged in more than 80 countries, most of these being in the developing world. Arms imported by developing countries, half of which are financed by export credits, have resulted in 30 percent debt burden on these countries. The scale of military spending and trade offs with social and environmental priorities as quoted by Tolba (1992) are:

- UNEP spent US$450 million in the decade 1980 – 90 which is less than five years worth of global military spending of a few nations.
- One Apache helicopter costs US$12 million – a sum that could pay for installing 80 thousand hand pumps to give the Third World access to safe water.
- One day expenditure on the 1991 war over Kuwait could have funded a five year global child immunisation programme against six deadly diseases saving one million children a year.

War is no more confined to war zones only or those fighting the war directly. In recent times there have been more civilian deaths than military deaths and hundreds and thousands of people are being displaced as refugees. A high percentage of those dying or affected in these conflicts are children. Air power and wide ranging nature of modern war put entire population at risk, disrupting food production, imperilling fragile ecosystems and forcing entire populations to flee from their natural habitats. The geography of warfare has also changed radically. In recent times most of the wars are fought in developing countries with indirect and covert involvement of major powers.

During the past five decades civil wars representing power conflicts within nations have increased sharply. Though these are termed as civil conflicts or civil disturbances, powerful weaponry with tacit support of global industrial nations is being used resulting in high casualties and public health risks.

3.4.1 Direct and Indirect War-time Impacts

The relationship between people and their environment can be changed significantly during wartime. Priorities are altered; certain resources are used more rapidly to fuel the war effort. In the time of Henry VIII, for example, many of England's oak trees were cut down to build war ships. During prolonged trench warfare in the coastal plains of France and Belgium, most of the forests were destroyed, resulting in the destruction of agricultural land and wood land.

Fig.3.5: Gruinard

Deliberate destruction and manipulation of environment has been used by armies to gain military advantage. 'Scorched earth' policies in which vegetation and crops are deliberately destroyed to prevent their use by the enemy have been one of the age-old military tactics. In Afghanistan, the deliberate and inadvertent destruction of forest lands reduced the forest cover to alarming proportions in the past two decades. Long lasting adverse environmental effects are attributed to areas where biological weapons are developed and tested. A classic example is the island of Gruinard, off the West Coast of Scotland, which was the site of experiments with highly contagious anthrax spores during the Second World War. The island remained uninhabited by government decree until 1988, but even now a complete decontamination is difficult to guarantee (Szasz, 1995).

Weapons of mass destruction are indiscriminate, killing, maiming and injuring entire populations, destroying and contaminating ecosystems transcending geographical and natural boundaries. Various medical responses after the use of such weapons in a war could neither restore life to the millions nor restore biotic and abiotic environment.

Since the World War II, an estimated US$16 trillion has been spent on the production of military hardware. Several industrialised nations spend huge amounts of their resources on arms production. They are the main suppliers of arms to the developing

nations, depleting the latter's revenues from spending on areas of health, education and well being. Along with the diversion of revenue to military research, arms-spending diverts scientists from working to improve health and quality of life. It is an irony that the world expenditure on weapons research far exceeds the combined spending on the development of cleaner energy technologies, improvement of health standards, increased agricultural productivity and control of hazardous pollutants.

3.4.2 Nuclear Weapons

A massive and unprecedented change in the potential consequences of wars began with the development of nuclear weapons. In the years since their use on Hiroshima and Nagasaki in 1945, the expenditure on nuclear weapons and the number of arms in the world's nuclear arsenals has grown tremendously by according to a conservative estimate.

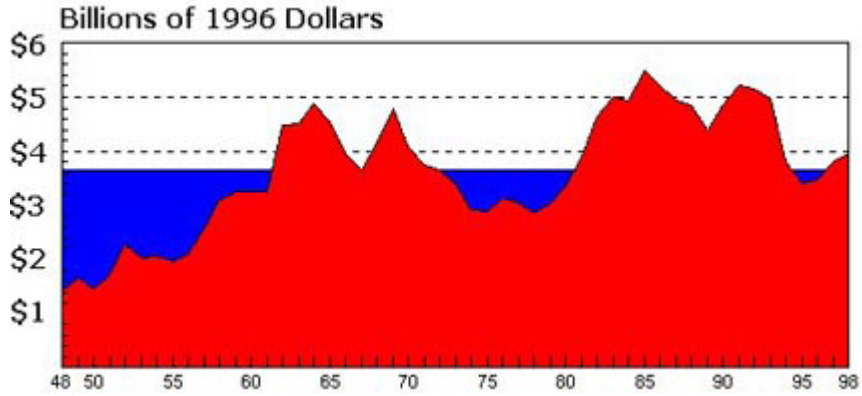


Fig.3.6: Average annual spending for nuclear weapons research, development, testing, and production by the Atomic Energy Commission and the Department of Energy (DOE) of USA during the Cold War (1948 to 1991) was $3.64 billion (blue area)
(**Source**: www.brook.edu/fp/projects/ nucwcost/fpoldoe2.gif)

Though there is not much direct information on the possible environmental effects of a nuclear war, some insight can be gained from the detonation of only two nuclear devices used in warfare to date, in Japan at the end of Second World War. These nuclear devices were relatively very small compared to the sophistication and the yield of present day weapons. The destruction caused by the devices of 1945 make one frightful of the consequences should today's devices are to be used. Let us look at the following data:

	Hiroshima	**Nagasaki**
Date of detonation	6 Aug 1945	9 Aug 1945
Type	Uranium 235	Plutonium
Height of explosion	580 meters	503 meters
Yield	12.5 kiloton TNT	22 kiloton TNT
Total area demolished	13 km^2	6.7 km^2
Buildings completely destroyed	67.9%	25.3%
Buildings partially destroyed	24%	10.8%
Number of people killed (by Dec 1945)	70,000	90,000 –120,000

The most important cause of death and physical destruction was the combined effects of the blast and thermal energy. The fire ball created by the blast was so intense that it evaporated all life at the epicentre and burnt human skin up to 4 km away. The effects of radiation were felt by the people of the successive generations as well.

The production and testing of nuclear devices would affect the environment adversely. Underground testing of nuclear devices has triggered earthquakes in a number of places. The radioactive fall out has endangered all living organisms. One of the greatest environmental threats of the 1980s was the prospect of a nuclear winter triggered by detonation of nuclear devices during war. Apart from the

destruction of human life and properties, massive clouds would blot out sun light from large areas for many weeks, triggering atmospheric and climatic changes which would result in a colder world climate after any nuclear detonation.

Limiting the Effects

Numerous treaties, conventions and agreements have been adopted to prevent utter human and environmental devastation in the use of nuclear weapons, their testing and their destruction. But the effectiveness of such agreements and treaties, as a deterrent on non compliance is difficult to evaluate and enforce. Even the Arctic is not spared nuclear pollution. For example, the Russian naval authorities have been dumping nuclear liquid wastes and buried solid nuclear wastes from their submarines along the eastern coast of Novaya Zemlya and in the Barents and Kara seas. It is observed (AMAF 1997) that these sites represent an important potential threat of nuclear contamination.

3.5 INDUSTRIAL ACCIDENTS

Most of the industrial accidents are avoidable if proper safety standards and protocols are implemented and followed. The dangerous gas and hazardous substances released during the accidents affect life forms across the boundaries of neighbouring states and countries. In Seveso, Italy, in 1976 an explosion in a chemical plant released dioxin into the air killing hundred thousands of animals and contaminating 5000 area of land. The 1984 explosion at Bhopal, India, released nearly 40 tons of Methyl Isocyanate (MIC) which had a devastating effect on human life resulting in long term ill health and disability.

Fig.3.7: The methyl isocyanide tank at Union Carbide Corporation's factory in Bhopal, which leaked in December 1984 causing a major disaster. Waste material dumped in and around the factory is now feared to cause soil and groundwater contamination in the neighbourhood of the site. (**Source:**http://www.flonnet.com/)

The convention on the transboundary effects of Industrial Accidents (1992) made it obligatory on the signatories among other things:

- The parties shall ensure that adequate information is given to the public in the areas likely to be affected by an industrial accident.
- The parties shall establish and operate a compatible and efficient industrial accident notification system to contain and minimise adverse effects.

Though the Hague declaration of 1989 outlawed the use of “poisonous gases” in war, chlorine, phosgene, mustard gas, tear gas are still produced and used in covert operations. Some poor nations which cannot afford the most sophisticated weapons consider these chemical weapons as ‘poor nations nuclear weapons’, thereby creating demand for the production of dangerous chemicals.

Emergency planning, emergency preparedness and emergency prevention would, to a large extent, reduce the vulnerability of populations to the industrial accidents.

In addition to the man-made disasters described so far, human activities are contributing to environmental problems like global warming and ozone layer

depletion. Both these problems have the making of a disaster and we have discussed them in detail in MED-001. Here we take them up briefly for the sake of completeness.

3.6 GLOBAL WARMING

You have learnt that an increase in global temperatures is likely to affect many atmospheric parameters like precipitation and wind velocity resulting in an incidence of extreme weather conditions. Indiscriminate burning of fossil fuels, emissions of pollutants from motor vehicles, emission of poisonous gases from chemical industries contributes to global warming. The effect is accelerated more by industrial and developed nations and the effect will be acutely felt by all the nations for no fault of theirs.

The background to international cooperation on climate change

Scientists began to attract the attention of policy-makers to global warming as an emerging global threat in the early 1970s (SCEP 1970). However their appeals were originally ignored and, as economies grew, more fossil fuels were burnt, more forested areas were cleared for agriculture and more halocarbons were produced. It took a further 20 years of continuous effort by scientists, NGOs, international organisations and several governments to get the international community to agree to coordinated action to address climate change.

The Stockholm Conference is generally regarded as the starting point for international efforts on climate variations and climate change (UN 1972). In 1979, the first World Climate Conference in Geneva expressed concern about the atmospheric commons. This event was attended primarily by scientists and received little attention from policy-makers. In the 1980s, a series of conferences and workshops were held in Villach, Austria, where scenarios for future emissions of all of the significant greenhouse gases were considered. At the 1985 Villach meeting, an international group of scientific experts reached a consensus on the seriousness of the problem and the danger of significant global warming (WMO 1986).

As a result of growing public pressure and the implications of the Brundtland Commission (WCED 1987), the problem of global climate change moved onto the political agenda of several governments. A diplomatic breakthrough came at the 1988 Toronto Conference on the Changing Atmosphere from which emerged a recommendation calling on developed nations to reduce CO_2 emissions by 20 percent from 1988 levels by the eyar 2005. A few months later, IPCC was jointly established by WMO and UNEP to review knowledge of the science, impact, economics of and the options for mitigating and/or adapting to climate change. The IPCC studies, especially the three extensive Assessment Reports in 1990, 1995 and 2001, covered all the different facets of climate change.

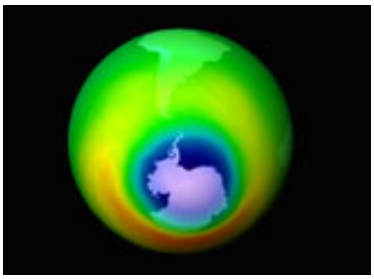
Source: WCED (1987) Our Common Future, The World Commission on Environment and Development, Oxford University Press, Oxford.

The United Nations Framework Convention on Climate Change (1992) acknowledging that human activities have been substantially increasing the atmospheric concentrations of greenhouse gases, determined to protect the climate system for the present and the future generations. The signatories agreed to promote and cooperate in education training and public awareness on various aspects related to climate change and as described above encourage widest participation in this process including that of non governmental organisations.

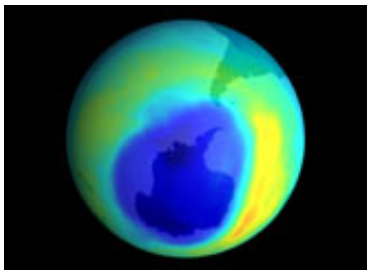
3.7 OZONE DEPLETION

When five decades ago inert gases like chlorofluorocarbons were discovered to be used in refrigeration as coolant, scientific community thought it was a scientific breakthrough in the service of humanity. These inert gases are being used extensively in refrigeration fluids, blowers in foam making, aerosol propellants, solvents and in fire extinguishers. It is now established that each CFC molecule that escapes into atmosphere sets in chain reaction combining with ozone molecule a chemical reaction that destroys thousands of ozone molecules. These irreversible chemical reactions are

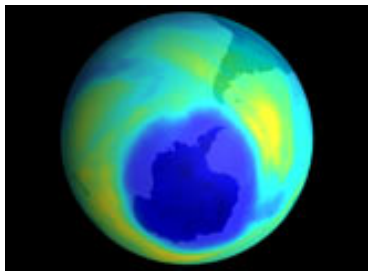
observed to occur at middle and high latitudes with ozone depletion depending on both the season and latitude.



October 1999 (average)
Historically, the Antarctic ozone hole is largest during October. This image shows the data from the Total Ozone Mapping Spectrometer (TOMS) Earth Probe, for the month of October 1999



September 3rd 2000
The ozone hole grew quicker than usual and exceptionally large. By the first week in September the hole was the largest ever at that time 11.4 million square miles. For the first time it reached towards South America and to regions of high population.



September 17th 2001
Satellite data show the area of the 2001 Antarctic ozone hole peaked at a size roughly equal to that of recent years about the same area as North America. Researchers have observed a levelling-off of the hole size and predict a slow recovery.

Fig.3.8: The ozone hole at different times (**Source:** http://www.coolantarctica.com/)

As you know, the ozone layer screens out lethal ultraviolet (UV) radiation. Depletion of ozone layer allows more ultra violet radiation to reach the Earth resulting in a great threat to life on earth. The developed and industrialised nations have been using these ozone depleting chemicals and the developing nations were rather late entrants in using this technology.

You have learnt that there have been several conventions and protocols starting with (i) Vienna convention for the protection of ozone layer (1985) and (ii) Montreal Protocol on substances that deplete the ozone layer (1987), (1990) and (1992). Though the international community was successful to an extent in its approach to addressing the problem of protecting the stratospheric ozone layer there is a need to have a new kind of global diplomacy to tackle such global ecological threats.

- Scientists must play an unaccustomed but critical role in the international environmental negotiations.
- Governments must act responsibly balancing the risks and costs for acting or not acting.
- Multilateral diplomacy involving coordinated negotiations among many government agencies.
- Educate and mobilise opinions essential to put pressures on hesitant governments and private companies.
- Economic and structural inequalities among countries to be adequately reflected in any international regulatory regime.
- Market incentives must be given to stimulate technological innovations.

With this brief recapitulation on ozone layer depletion, we end the discussion on man-made disasters and summarise the unit.

3.8 SUMMARY

- The short term and long term effects of man-made disasters on environment have been some of the global concerns. Even some of the ‘natural environmental calamities’ are the results of preceding human activities. Devastating fire accidents, eruptions and explosions, mining accidents, pollution of global commons, nuclear and industrial accidents, wars and civil conflicts are some of the examples of man-made disasters. These disasters may be classified into three types: sudden, insidious and wars.

- One of the main causes for the occurrence of these disasters has been the laxity in enforcing safety standards and the motive for short term profit

maximisation. Apart from the damage to the atmosphere through emission of pollutants and release of effluents, industrial accidents, accidents in the transportation of toxic wastes for disposal, radiation leakages from nuclear facilities have become increasingly common. Production and storage of chemical, biological and nuclear weapons by the industrialised nations and their import by the developing nations have been at the cost of providing health and education to the people. Imagine that today's Sahara desert was a fertile land just about 6000 years ago.

- The release of green house gases would result in climatic changes that can alter fertile green lands into arid lands. Ozone depletion that results in the penetration of ultraviolet rays into the Earth's atmosphere has been the result of escape of inert gases like halons and CFCs into the atmosphere.

- There have been several conventions, agreements and protocols between countries on several issues that cause environmental disasters as a result of human actions. But the implementation and effectiveness of these agreements have been peripheral. Unless a strong public opinion is built up which will make the governments hear the voice of people, nothing tangible can be achieved. Making education on environment and development available to all people of all ages in all sectors of society would sensitise the people to these issues.

3.9 TERMINAL QUESTIONS

1. Explain briefly some of the causes of man-made disasters and possible preventive measures.

2. Examine the issues involved in dealing with the disposal of toxic wastes.

3. Discuss the impact of wars on environment.

4. Describe the effects of industrial accidents on human life.

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UNIT 4 MNCs, TNCs AND DEVELOPING COUNTRIES

Structure

4.1 Introduction
Objectives
4.2 The North-South Divide
4.3 TNCs in the Era of Neo-Liberal Economic Globalisation
4.4 Role of the IFIs
4.5 Flexible Production and Impact on Labour and Environment
4.6 Technology Concerns
4.7 Environmental Standards
4.8 Summary
4.9 Terminal Questions

4.1 INTRODUCTION

In the previous unit, we have discussed about man-made disasters that cause serious damage to life and property and ecological imbalances. In the present unit, we shall discuss the role of multinational companies and trans-national corporations in the global scenario and its impact on the quality of environment. As you know, globalisation is leading to structural transformation of companies, creating new dependencies. This has resulted in a situation where events, decisions and actions in one part of the world would have significant influences on the other parts of the world. Technological advances, revolution in Information and Communication Technologies (ICTs), easy access to finance and labour across geographical and national boundaries have trans-nationalised economic life. It is estimated that about 35,000 large Multinational companies (MNCs) with over 170,000 affiliates and about 300 industrial houses account for 70% of the total FDI (Foreign Direct Investment).

Today these giant MNCs and Transnational Corporations (TNCs) together with international financial support are in a position to control the global markets through acquisitions and mergers. In this way, the MNCs and TNCs spearhead the new liberal economic globalisation. In this unit we shall deal with the increasing disparities in the current world order with macro divisions of the world as the Global North and Global South. We also probe into the role of TNCs in the on-going globalisation process and the favourable mediation of International Financial Institutions on behalf of TNCs. We examine the switch to flexible production and its impact on social and environmental compositions as also technology concerns and environmental standards.

Objectives

After studying this unit, you should be able to:

- explain the role of MNCs and TNCs in Economic Globalisation;
- discuss the role of IFIs in Economic Globalisation; and
- analyse the impact of Civil Regulation on the operations of MNCs and TNCs.

4.2 THE NORTH-SOUTH DIVIDE

In the discussions on development, generalisations like the ‘developed’ and the ‘developing’ countries are common and lately, a geographical division like ‘north’ and ‘south’ is being used. Sometimes this broad division becomes useful to analyse the disparities in the global economy. This section explains the increasing gap in the North-South divide in a world that is getting integrated very fast. The hallmark of the process of neo-liberal economic globalisation is the increased trade between various

countries. The trend in international trade thus indirectly becomes an indicator to illustrate the North-South divide and nuance the disparities further.

Globalisation is supposed to remove barriers in the international trade and is projected as a win-win situation where everybody can benefit from the free flow of goods and services across the globe. For the industrialists and exporters from the South, this would mean greater access to foreign markets and the removal of tariffs and other barriers against the goods and services where they have a competitive advantage. This argument is usually followed by a development agenda for the South in terms of investment, employment and growth. Strengthening the development of lesser economies automatically strengthens trade and trade liberalisation. This logic leads to conclude that developed countries also benefit from the strengthening of developing economies and that freer trade leads to greater growth prosperity and better quality of life for all (Mahindra, 2003).

A recent study has brought out the salient features of the current globalisation process and argued that increased trade is not an automatic guarantee for the development and amelioration of poverty. On the contrary, the developing countries' experiences expose the gap between the potential benefits of trade and the disappointing outcomes of such global integration. Exports now account for more than one-quarter of the combined GDP of developing countries, a proportion which is higher than for rich countries. Although the exports from the South largely remain dependent on primary commodities, the share of manufactured goods has also been growing. With high-technology exports, some of the Southern countries are emerging as major suppliers of cutting-edge technologies and labour-intensive goods. According to Novib (2002), a one percent increase in the world-export share for each developing region could reduce world poverty by 12 percent. The decline would be greatest in the sub-Saharan Africa and South Asia, the two regions with the highest concentrations of poverty.

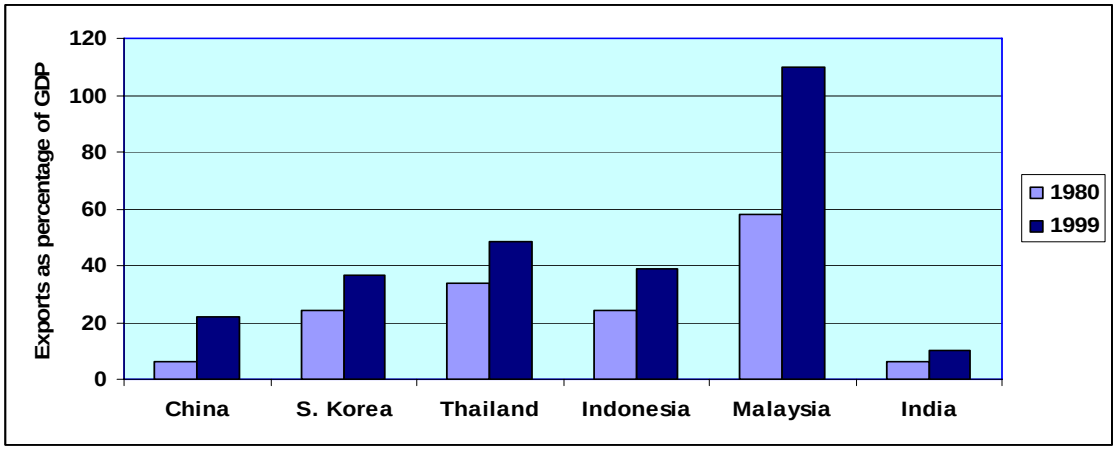

Fig.4.1: Share of exports in GDP of some Asian countries. Between 1980 and 1999, the "export as a percentage of GDP measure" of China, Thailand, and Malaysia has increased significantly. While India's share of exports to GDP has nearly doubled in this period, exports still contribute only 10% of GDP, significantly lower than its competitors. (**Source for data**: http://commin.nic.in/)

Improved market access is only one of the requirements for strengthening the links between trade and poverty reduction. To understand this point, let us consider the example of the South Asian countries. Many of these poorest countries lack the infrastructure to take advantage of the potential market openings. Within these countries, large sections of the population lack access to productive assets such as land and to health care and education. The South Asian countries and the developing countries in general still remain heavily dependent on primary commodities. Fifty developing countries depend on three or fewer such commodities for more than half of their export earnings. The national economies of these countries and the household economies of millions of poor people have been affected by a decline in the prices of

these commodities. Although in the recent past, India has increased its share of manufactured goods in exports quite significantly.

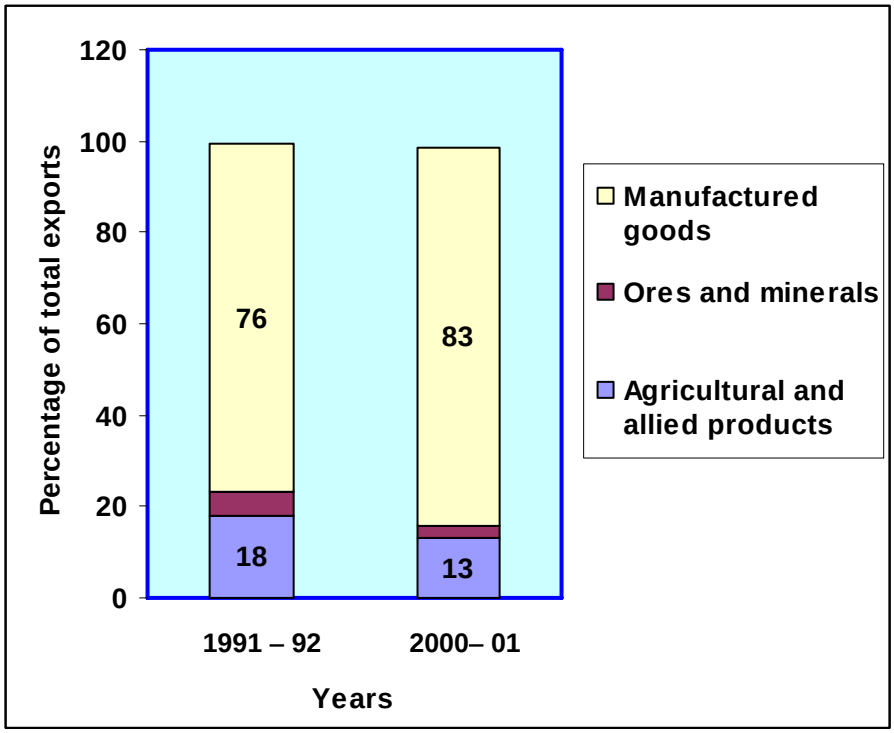

Fig.4.2: Share of exports – Commodity-wise grouping of exports. The chart indicates that the share of manufactured goods has risen from a level of 76% in 1991-92 to 83% in 2000-01. On the contrary, the share of agricultural and allied products has declined from 18% in 1991-92 to 13% in 2000-01. Similarly, the share of exports of Ores and Minerals has declined from 5.2% in 1991-92 to 2.60% in 2000-01. This is an evidence of India's exports moving away from resource based products to technology based products in the post-liberalisation period. (**Source for data**: http://commin.nic.in/)

The increasing gap between North and South has a parallel process of widening of the gap between the rich and the poor within these countries. Robinson (2001) suggests that the process of globalisation thus unfolds with a social and not a national logic. There is an increasing social polarisation with the fragmentation of national economies. Such selective integration of social groups into trans-national networks forces us to rethink development not as a national process in which what "develops' is a nation, but in terms of developed, underdeveloped and intermediate population groups occupying contradictory or unstable locations in a trans-national environment.

This also means that globalisation has increasingly eroded the national boundaries with the emergence of a trans-national or global society. The major actors in triggering this process are the powerful TNCs and MNCs. TNCs thus have become the major beneficiaries of the current process of globalisation.

The discussion clarifies that in spite of the limited opportunities offered by globalisation with increased international trade, Southern countries may not benefit from the process since there are structural constraints posed by the internal and external environment in these countries.

The trans-nationalisation of production in the era of neo-liberal economic globalisation with the mediation of international financial institutions makes it more difficult for Southern countries, particularly the poorer sections in these countries to benefit from the process.

4.3 TNCs IN THE ERA OF NEO-LIBERAL ECONOMIC GLOBALISATION

We have already explained how nations are linked together into a larger world system via trade and financial flows. The salient feature of globalisation is that the process of production itself is becoming trans-nationalised. Changes in technology, particularly strides in the information technology, transportation and various functional areas of management facilitate in organising world production in accordance with a whole gamut of factor cost considerations. Trans-national corporations organise production in lieu with local advantages regarding different factors like raw material availability, cheap labour etc.

TNCs have been active at the international level from the days of mercantilism for the last five centuries. These companies were the major link between producers in the developing world and consumers in the most industrialised countries. The companies have brought to Northern countries consumables and raw materials produced across a range of developing countries. Small numbers of TNCs still dominate global commodity markets and steadily the role and importance of the TNCs in the international trading system has been increasing.

Collectively, these corporations operating in more than one country now account for about one-quarter of global output. International production carried out under the auspices of these companies is growing far more rapidly than other economic indicators. Global economic integration, to a large extent, is the product of integrated corporate production systems. The annual foreign sales of the largest 100 TNCs amount to $2.1 trillion. This is equivalent to about seven percent of the global GDP and more than 25 percent of the world trade. It is also larger than the combined GDPs of South Asia and sub-Saharan Africa, home to one-third of the world's population. Comparing the company turnover with GDP, half of the world's largest 100 economic entities are not countries, but corporations. Wal-Mart, General Motors and Ford have a bigger turnover than Africa's entire combined GDP. Mitsubishi and Toyota have a turnover comparable to the GDP of countries such as Greece and Portugal. The combined sales of Wal-Mart, IBM, and Nestle are equivalent to the GDP of Mexico or India.

MNCs are a powerful influence in the current global context as economic agents and they do penetrate into every aspect of our daily life. These companies manufacture an impressive array of products and play a vital role in the development of industry and trade and are influential players in the larger economy of most of the developing and developed countries. Multinational enterprises have slowly gained their dominance by harnessing the advantages of scientific research, incorporating timely technological improvements and expanding the scale of operations by mobilising internal profits. By harnessing external sources of finance, professionalising the management and working through a well integrated organisational system, they assert their hegemony over the production and distribution of commodities in the entire world. With their financial might, they can influence the political systems and even government policies wherever they operate. MNCs are most effective in those areas that demand sophisticated technologies, up-to-date skills and large scale operations with complex industrial structures.

TNCs have facilitated the development of global production systems and trade within the companies has been one of the most powerful forces behind the expansion of the world trade. The foreign sales of the largest 100 TNCs form 25% of world trade and almost two-thirds of the total trade takes place within the companies. TNCs are linking producers in developing countries more closely with consumers in rich countries and globalisation is generating forces which create major opportunities, along with huge threats (Novib, 2002).

Non-traditional agricultural exports such as fruits, flowers, vegetables and spices from developing countries coordinated by TNCs are on the increase. Such extension of trans-national agribusiness and the conversion of local production from food and traditional export crops to new crops are made possible by the infrastructural developments in transportation, refrigeration and other technological innovations. The expanding consumer base in developed countries increases the demand for such commodities in the global market.

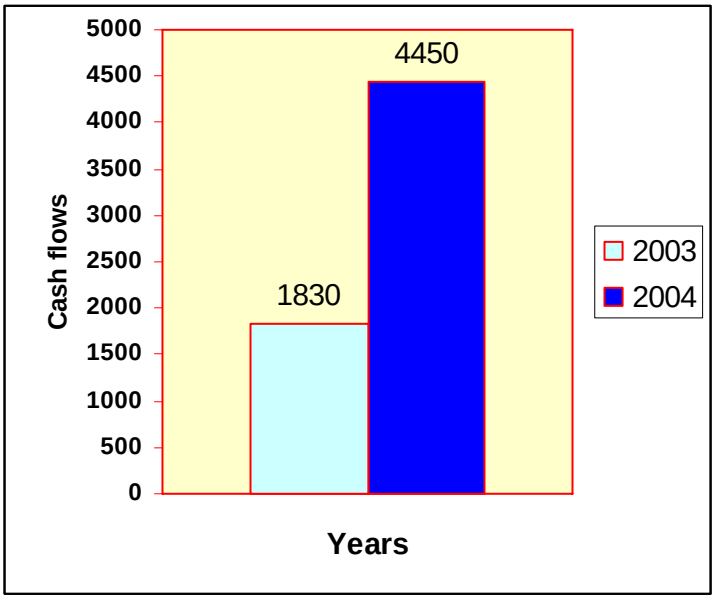

Fig.4.3: The free cash flows of the Indian arms of 70 multinationals have more than doubled in the just-concluded financial year, from Rs 1,830 crore to Rs 4,450 crore through restructuring measures such as reduced workforce. MICO, GlaxoSmithkline Pharma, Nestle India, Cadbury India and GSK Pharma are among the major contributors to the surge in cash flows this year, due mainly to their restructuring measures. These companies have downsized their workforce through a VRS and rationalised their sales force.

By the enormous efficiency in their organisation of production, trans-national corporations are busy carving out a new global economic space where national priorities such as generating employment and the welfare of all may lose validity. This process of neo-liberal economic globalisation by TNCs is facilitated by the international financial institutions (IFIs) and in the next section, we take up this issue.

SAQ 1

Make a list of the major MNCs active in your region. What products do they sell? Tabulate data showing their sales, profits and R & D investment. How do their activities impact the national economy and the environment? Make your own assessment.

4.4 ROLE OF THE IFIs

The debt crisis of the 1970s and the subsequent neo-liberal project emphasised forced participation of developing countries in the world market for national development. This has given rise to a notion of the need for the transition from managed national economic growth to managed global economic growth. The International Financial Institutions (IFIs) coordinate and sometimes impose the process in each country and region of adjustment into globalisation.

Robinson (2001) has argued that the neo-liberal structural adjustment is a mechanism for adjusting each national economy to the global economy. The study suggested that these programmes seek to maintain accumulation by MNCs by restoring internal conditions of profitability compatible at the local and global levels. The logic that is always projected is the economic reactivation in each adjusted country by the expansion of activities linked to the global economy. This usually works in favour of the big players in the national economy. Thus, globalisation has profound transformative effects on every country and region. National and regional production systems may be fragmented and restructured to get integrated into the global production systems.

Africa targeted by TNCs for *Gene*-Products

Africa is being targeted by TNCs that are desperate for a market to sell genetically engineered products which have been rejected elsewhere, according to some of the environmental groups. Due to resistance in Europe and parts of Asia, large corporations involved in genetic engineering are now viewing Africa as a potential market for their products which include food and seeds. The Africans were unaware of the dangers posed by the new breed of seed developed by the American and Japanese governments. This would make the African governments dependent on the corporations for seeds. According to the UK-based environmental watchdog, the terminator technology has been designed to prevent farmers from saving their own seeds and buy from the corporations each time they want to plant. Trade in genetically engineered products is supported by the Trade Related Aspects of the Intellectual Property rights agreement of the Geneva based World Trade Organisation. The environmental groups have already expressed concern over the seed distribution and supply systems. The African countries are now resisting the moves and are taking initiatives to draft a framework on community rights access to biological resources, based on the earlier Convention on Biological Diversity.

Source: http://www.sunsonline.org/trade/process/followup/1998/12980398.htm

As suggested earlier, world trade has the potential to reduce poverty in developing countries by triggering economic growth. This proposition becomes questionable in the current economic globalisation mediated by the IFIs. Novib (2002) has detailed how international trade is inherently opposed to the needs and interests of the poor and how the rules that govern it are rigged in favour of the rich. The study suggested that the World Trade Organisation (WTO) is part of the problem with many of its rules on intellectual property, investment, and services protect the interests of rich countries and powerful TNCs, while imposing huge costs on developing countries.

However, the optimists of globalisation argue for harnessing opportunities offered by the World Trade Organisation (WTO). They emphasise the need for developing countries to master the art of negotiation in the WTO, which means identifying markets where they see the greatest potential and providing specific details on the removal of the tariff and non-tariff barriers. They also argue that the industrialists must strengthen the governments' hand by leveraging their areas of strength to protect areas of weakness in the WTO negotiations. Optimists of globalisation suggest that resolving the inherent conflict between trade liberalisation and development is the only way to achieve progress and for this a pro-active presence in the WTO is a must.

In the case of the IMF and the World Bank, advocacy has been backed by loan conditions which require countries to reduce their trade barriers. Partly as a result of these loan conditions, poor countries have been opening up their economies much more rapidly than rich countries. The average import tariffs have been halved in Sub-Saharan Africa and South Asia, and cut by two-thirds in Latin America and East Asia. The discussion makes it clear that there is no level-playing ground in international trade for developing countries or small national players to participate on an equal footing. Another problem is the modus-operandi of the TNCs with flexible production methods that tilt the balance in the structure of the production of developing countries. Two important issues are those related to environment and labour, which we discuss in the next section.

SAQ 2

Analyse the role of IFIs in the context of your national economy.

4.5 FLEXIBLE PRODUCTION AND IMPACT ON LABOUR AND ENVIRONMENT

So far we have discussed how the trans-national companies have become significant players in the process of development throughout the world. The mobility of capital and the internationalisation of production that make international investment possible, give companies an unprecedented freedom to locate their businesses wherever it is most profitable to do so, often at the expense of local communities and their environment. Of particular concern is the fact that developing countries often

experience greater economic and political volatility. The foreign investors tend to engage in ventures that will yield a high rate of return over a short period, often resulting in environmental devastation and social marginalisation.

'Civil Regulation' is a term used to describe a broad range of strategies increasingly adopted by the civil society organisations aimed at holding companies accountable for their environmental responsibilities, and secondly, trans-national litigation against companies accused of negligence in one of their overseas operations. Regulation is born of concerns about the continued lack of effective regulation of TNCs at the international level. Critics point to the fact that there is a lack of recognition in international environmental agreements of the role of TNCs in causing environmental problems. The issue of TNC regulation was dropped from the UNCED agenda and while Agenda 21 includes recommendations that affect TNCs, it does not take the form of a code of conduct. Although there are national and regional attempts to advance the legal debate about the obligations of TNCs when they invest overseas, there has not been much progress.

A recent news report of the *Guardian* states that "hundreds of unarmed Nigerian villagers, including women and children, seized three oil platforms operated by Shell and Chevron Texaco, shutting 90,000 barrels a day of production over a jobs dispute for the Kula community, located near the state border with Bayelsa. Millions of impoverished inhabitants of the Niger Delta, largely abandoned by their government, feel that they should be benefited from the huge wealth being pumped from their tribal lands". (**Source:** http://www.corpwatch.org/article.php?id=11742). This incident depicts the insensitivity of the TNCs towards the people in whose countries they (TNCs) are allowed to extract enormous wealth. Their investments have not, in any way, contributed to the well-being of local population.

There are two major problems in exercising legal proceedings against the MNCs. The major problem in bringing legal suits for negligence on health and environmental grounds, is identifying the cause-effect relationships between manifested effects and particular pollutants, as well as deciphering the direct from indirect effects. Legal proceedings demand the requirement of scientific evidence. The technical nature of the industrial processes and the fact that the burden of proof rests on the plaintiff to establish that an environmental standard has been violated, by taking recourse to independent and reliable technical and scientific data, excludes all but the most wealthy or technically competent. TNCs are legally accountable only to the laws of the country in which they are operating and this demands demonstrating a clear chain of command between the headquarters of a company and its subsidiaries. The parent companies often claim they are merely stock or shareholders and that they are only connected with book-keeping purposes.

It is against the background of weak instruments and failed initiatives at the international level that the NGOs have begun to target TNCs with increasing frequency and vigour in recent years. Rather than providing a coherent alternative approach to social regulation, the forms of civil regulation amount to a patchwork of activities and campaigns aimed at challenging the environmental impact of TNCs. One such campaign to instil corporate responsibility for achieving limited success was the campaign of the Centre for Science and Environment, New Delhi against the major soft drink manufactures in India. Although contested by the companies, the campaign could bring the issue of pesticide contamination in soft drinks to the public. The problem was debated at various levels right up to the Indian Parliament and discussed widely in the media too.

On the other hand, the stringent environmental requirements for import in developed country markets restrict access for developing country producers since they lack the capacity and flexibility to accommodate such requirements in their production processes. This problem has been exacerbated by the fact that their exports depend on a very limited number of items. In other instances, trade-related environmental issues pose a special challenge to the developing countries. Environmental degradation can reduce their capacity to generate export earnings in the future. The costs of any

environmental degradation they may suffer tend to be compounded by their lack of economic diversification.

The restructuring of work and labour in the context of the transition to flexible production methods of TNCs is another important issue related to globalisation. The labour market reform is an essential component of neo-liberal restructuring, centred around making labour 'flexible'. The usual logic of companies is the argument that labour costs must be lowered in order to attract investment and increase the competitiveness of firms producing export-oriented goods. Deregulation facilitates firms to utilise labour more flexibly so as to minimise the cost and maximise the control of labour. This kind of flexibility of labour is also associated with its de-unionisation. The neo-liberal transformation of the labour market results not in a uniform process of downward mobility but in new patterns of social stratification that include new opportunities for upward mobility. The best example is the enormous opportunities that have opened-up for Indian professionals in the IT sector. This clarifies our earlier argument of a selective integration of certain social groups into the current process of economic globalisation.

The people's fight against Coca-Cola's water-guzzling plant at Plachimada village in Palakkad district, Kerala state, has turned more direct with the mercury soaring high and all drinking water sources drying up fast in this harsh summer. This, despite Hindustan Coca-Cola Beverages Ltd (HCBL) **suspending operations** at the plant following a government order issued on February 21, 2004 to stop drawing ground water from the plant premises till June 15 when the monsoon rains are due. In the wee hours of April 3, 2004, irate villagers blocked a tanker lorry bringing water to the plant. There was an acute drinking water crisis in the entire district and the company, instead of searching for alternative sources of water, has been stealing precious drinking water from deep down the earth and the wells have all gone dry. The people's struggle against Coke has crossed 750 days, and on April 22, 2004, Earth Day, was marked as the second anniversary of the beginning of the vigil by the struggling community in front of the Coca-Cola plant. In the drought-hit Chittur region where Plachimada village is located, three farmers have committed suicide within a span of one month, unable to bear the pangs of acute drought, crop failure and accumulated debts.

In this region where rains have been below normal for the third year in succession, Coca-Cola has been drawing at least 3, 50,000 litres of ground water every day. At full capacity, the plant needed 1.5 million litres of water per day, according to Kerala State Pollution Control Board (KSPCB). But Coca-Cola declined to comply with the instruction saying that these charges were unfounded.

The High Court had ruled that ground **water was a common property** and that the state and local governments should not grant companies rights for excessive extraction. While the recent **report of the Joint Parliamentary Committee** had confirmed the presence of pesticides in the products of HCBL, the state pollution control board had earlier found **toxic heavy metals in the solid wastes** of the Coca-Cola plant at Plachimada.

Source: http://www.indiaresource.org/campaigns/coke/2004/heatison.html

Accessibility to huge amounts of capital and thereby the use of relatively pollution free technologies by the MNCs and TNCs result in not providing a level field to the industries in the developing countries; with less environmental standards in developing countries and pressures generated by unemployment, the MNCs and TNCs exploit the conditions in unfair trade practices setting up their production facilities away from the developed countries imposing stricter environmental standards.

4.6 TECHNOLOGY CONCERNS

Technology is defined as a certain ratio of the two main factors of production – Capital and Labour. The relative prices determine the choice of technology resulting in its choice as either capital intensive or labour intensive. An alternative perspective

is that technology represents the means of production, and whoever is in control of technology controls the economic activity. It is therefore argued that since the capitalists control the means of production and labour is dependent on the capital in order to engage production, capital exercises control over labour. Thus technology is not a constituent of the inanimate world alone, but a relationship between the owners of the means of production and those that are dispossessed – the proletariat. The conventional argument is based on the cost-benefit analysis behaviour in the removal of restrictions to allow free mobility of technology in global markets. This in turn implies that a regulated market generates more costs than benefits. In this debate, the ecological concern of technology has not been given the importance it deserves.

Though there has been much talk about eco-friendly technologies, it is impossible to have a hundred percent pollution free technologies. It is pointed out that it would cost the United States around $200 billion to have pollution free technologies in production. When issues related to technologies are discussed, one has to note that there are 'Technology Alternatives and Alternative Technologies'. The conventional technologies are based on energy intensive methods of production, usually driven by non-renewable resources like fossil fuels.

Alternative technologies are those that utilise non-conventional energy sources like solar energy which are termed as renewable energy sources. In the domain of conventional technologies there tends to be wastage of resources in the sense when new technologies enter the market, the existing ones are rendered redundant. Though the argument that modernisation of technologies reduces pollution is valid, it is faced with the challenge posed by high level unemployment in the developing countries.

Assuming that a trade-off could be achieved by accommodating surplus labour in other sectors, access to these modern pollution-free technologies is constrained by other factors like lack of resources to invest and lack of access to the new technologies. The situation is further complicated by Intellectual Property Rights (IPR) that generates artificial monopolies in the name of incentives for innovative technologies. The developing countries face disadvantages due to both historical reasons and incapacitated entrepreneurship and lack of competitive production techniques.

In case of commodity groups like Metals, Chemicals and Pharmaceuticals, identified as "dirty industries" the cost of treatment technologies are expensive. No wonder that the developed countries shift the "dirty industries" to developing countries where environmental standards are lax and save on treatment technology costs. In a competitive market, it is a common sense that consumers prefer commodities that are priced low if they are of the same quality. Take the example of a solar street light priced at Rs. 15,000. It is with a view to encourage these technologies that governments in developing countries are helping the producers of the new technologies to sell their products at subsidised prices. For instance, a group of activists in Tamil Nadu in India are buying agricultural commodities from farmers who are applying bio-friendly technologies, at higher prices.

Though such actions are a result of collective political action, they are often dubbed as irrational by the standards of conventional economic theories. Since non-conventional, pollution free technologies are usually permanent technologies, there is no recurrent demand unlike in case of conventional technologies. As a result there are no incentives to business houses to invest in research and development of such technologies. The market is not an ideal institution where the innovation of non conventional technologies can take place unless it is subjected to informed public pressure. Study the following figure and reflect upon what you can do.

Question: In the past one year, have you avoided the products of, publicly criticized, or otherwise punished a corporation you do not consider socially and environmentally responsible?

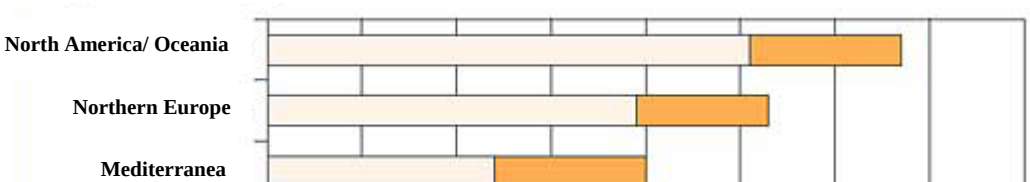

Fig.4.4: Informed consumers can be a powerful force for better environmental governance as reflected in this survey (**Source:** images.wri.org/)

4.7 ENVIRONMENTAL STANDARDS

A related issue with industrialisation of mass production technologies in terms of rapid environmental degradation is the lack of universal environmental standards. In the backdrop of failing markets, the function of protecting the quality of environment fell on the state. Since it has become evident that modernisation resulted in several abnormalities like global warming, green house effect and ozone depletion, it is proposed that a certain 'cess' be imposed by governments on the resources (or on polluters) leading to reduction of pollution levels. But public policies are often changed, people often lack proper information and even if they are well informed, people are irresponsive. There have been criticisms on the methods of arriving at the amount of cess and that it lacked economic rationality. It is argued that the damage to environment is more because of the "tragedy of the commons".

There are two different kinds of environmental standards – Ambient standards and Emission standards. Ambient standards deal with maximum allowable levels of a pollutant that may be given off by a production facility. Ambient standards offer a simple method of establishing priorities and require no further intervention. But these can be set at different levels for different locations and it is possible to use them to protect valuable ecosystems in a way that it would not be possible using emission standards.

In fact, the environmental standards fixed by different countries are varying. The standards may, quite legitimately, differ from one country to another and have been endorsed by the United Nations 1992 Rio Declaration on Environment. Standards applied by some countries may be inappropriate in terms of economic and social costs to other countries, in particular to the developing countries. On the other hand, Emission standards may be established in terms of what can be achieved with available technology, or in terms of the impact of emissions on the ambient environment (World Bank 1998).

It has been contended by the industrial lobbies in the developing countries that they cannot be competitive if they are forced to abide by international standards. They argue that they do not have the kind of resources necessary to treat the pollutants they generate. As a result administrations in the Third World countries have been soft on polluting industries, fearing that strict regulation might impede the growth of industrialisation. It is to be understood that varying standards are the result of varying reasons such as local legislation, socio-economic priorities, cultural differences, carrying capacity of environment, availability of new technologies and the size and complexity of industrial facilities.

The TNCs are the most important players involved in environmentally damaging activities. Here are a few examples:

- The TNCs generate more than half of the greenhouse gases emitted by industrial sectors with the greatest impact on global warming.
- They have virtually exclusive control of the production and use of ozone-destroying CFCs and related compounds.
- In mining, they still dominate key industries and are intensifying their activities. In aluminium, for example, six companies control 63% of the mining capacity.
- In agriculture, they control 80% of land worldwide cultivated for export crops; and 20 firms account for 90% of pesticide sales.
- They manufacture most of the world's chlorine, the basis for some of the most toxic chemicals including PCBs, DDT and dioxins.
- The TNCs are the main transmitters of environmentally unsound production systems, hazardous materials and products to the Third World. For example, 25% of pesticide exports from the US in the late 1980s were chemicals banned or withdrawn in the US itself.
- They dominate the trade in (and in many cases the extraction or exploitation of) natural resources and commodities that contribute to depletion or degradation of forests, water and marine resources, and toxic wastes and unsafe products.
- Through advertising and product promotion, they also promote a culture of unsustainable consumption.

Despite these problems, we may note that in the context of grave social inequalities in the developing countries, environmental resources are a site of social conflict between contesting claims. Setting environmental standards through legislations help sections of the society that are vulnerable to get their legitimate share in the resources and in protecting their rights. It would not be an exaggeration to claim that the vulnerable, more often than not, happen to be those that inflict less injury to the environment.

Let us now summarise the contents of this unit.

4.8 SUMMARY

- The North-South divide in the contemporary world order that is fast getting integrated, is sharpening. The hall-mark of the process of neo-liberal economic globalisation is the increased international trade between countries. For the optimists, especially the industrialists and the exporters from the South, this would mean greater access to foreign markets and the removal of tariffs and other barriers against the goods and services where they have a competitive advantage. The basic premise is that freer trade leads to greater growth prosperity and better quality of life for all. But pessimists, especially the civil society organisations, warn that increased trade is not an automatic guarantee for development or poverty amelioration. The improved market access is only one of the requirements for strengthening the links between trade and poverty reduction. Beyond the north-south divide, it is also observed that there was an increasing gap between the rich and poor within the countries over a period of time.
- Multinational enterprises have slowly gained their dominance by harnessing the advantages of scientific research, incorporating timely technological improvements and expanding the scale of operations by mobilising internal profits. The TNCs and MNCs were found to be the major benefactors and thus, the dominant actors that spearhead the process of neo-liberal economic globalisation. There was also the suggestion that trans-nationalisation of production with the mediation of international financial institutions makes it

more difficult for Southern countries, particularly the poorer sections in these countries to benefit from the process.

- Environmental and social costs are observed to be the down-side of the workings of TNCs in developing countries. There is a lack of recognition in international environmental agreements regarding the role of TNCs in causing environmental problem. Although there are attempts for instilling corporate social responsibility in the form of civil society response, the legal instruments are found to be weak in facilitating this. On the other hand, the stringent environmental requirements for import in developed country markets restrict access for developing country producers since they lack the capacity and flexibility to accommodate such requirements in their production processes. Although the TNC-led economic globalisation offers avenues to highly paid Third World professionals, it also affects a large majority by the neo-liberal restructuring of the labour markets by various flexible norms for hiring and firing labour at will.
- In general, the economic globalisation spearheaded by the TNCs with the facilitation of international financial institutions offer opportunities as well as enormous threats to the developing countries and to certain sections of the society.

4.9 TERMINAL QUESTIONS

1. Explain how globalisation has contributed to the increasing disparities in the developed and developing countries.
2. Describe the role of MNCs and TNCs in the era of neo-liberal economic globalisation.
3. “World trade has the potential to reduce poverty in developing countries.” Analyse this statement with reasons.
4. Explain as to how the Technology concerns are related to the Environmental Standards.

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UNIT 5 INTERNATIONAL SUMMITS AND DECLARATIONS

Structure

5.1 Introduction
Objectives
5.2 Treaties, Protocols and Declarations
5.3 History of Environmental Negotiations
5.4 Some Important Declarations and Conventions
The 1972 United Nations Conference on Human Environment
World Commission on Environment and Development (WCED)
United Nations Conference on Environment and Development (UNCED)
The Convention on Biodiversity (CBD)
Trade and Environment: From GATT to WTO
Rio Declaration on Environment and Development
5.5 RIO +5 and RIO+10
5.6 From Declaration to Implementation
5.7 Global Environment Facility
5.8 Summary
5.9 Terminal Questions

5.1 INTRODUCTION

In Block 1 of this course, you have studied about natural and man-made disasters and the havoc caused by these disasters to life and properties of human and other living being. Besides, we have also discussed the remedial measures that we can take to meet the onslaught of these eventualities. In this Unit we shall discuss the environment in a global perspective dealing with Summits and Declarations. International Law traditionally embodies the rules that are legal bindings on the states in their interaction and exchange. These rules derive their authority from four sources: treaties or conventions, international customs, general principles of law and other sources such as courts and tribunals. Beyond these sources of “hard law” that establish legal binding obligations, there are also “soft law” such as principles, declarations, rules, charter and standards that are not binding as such but seem to have played an important role in setting moral and ethical background for the acceptable and desirable forms of behaviour among member states, non-governmental organisations and trans-boundary corporations.

Objectives

After studying this unit, you should be able to:

- trace the history of Environmental Negotiations;
- discuss the impact of trade related treaties on the environment; and
- list some important declarations and explain their salient features.

5.2 TREATIES, PROTOCOLS AND DECLARATIONS

Before beginning the discussion, we would like you to understand some terms used in international negotiations related to environmental issues.

Treaties: Treaties are also referred to as conventions, accords and agreements as they are the primary source of international legal rights and obligations in relation to environmental protection.

Protocols: Environmental treaties have some special features other than international treaties. Usually first of all a framework of treaty is adopted that sets out general obligations, and basic institutional arrangements. However, procedures for the

adoption of detailed obligations are usually developed and provided in Protocols subsequently. For example, after signing the Convention on Climate Change by the member countries, a detailed procedure for member states' obligation to reduce their green house gas emissions was subsequently developed (not yet fully adopted) in Kyoto Protocol. Similarly, the convention of biodiversity has set the general framework for biodiversity conservation and use but the detailed binding obligation for trans-boundary movement of genetically modified organisms was developed through Bio-safety protocol.

Declarations and Summits/Conferences: Many conferences have been convened at the intergovernmental level to address environmental issues and issues linking environment and development. These conferences are aimed at adopting declarations, principles, statements or rules that are not binding as treaties but contribute in creating appropriate environment for negotiations and the development of such binding treaties. The most important international conferences on the issue of environment and development have been 1972 Stockholm Conference and 1992 United Nations Conference on Environment and Development held in Rio. Each one adopted non-binding declarations known as Stockholm Declaration, Rio Declaration and Agenda 21 which include important elements that reflect or have contributed in developing international environmental law. So, declaration and summits are not binding for member countries but they set the moral background with which legally binding treaties and conventions are negotiated.

North-South Divide

At a very abstract level all environmental negotiations have taken place on the interface of the north-south divide. As the following description clarifies, almost all negotiations crucially debated on the differing positions between northern and southern, or in other words between the developed and developing countries. Questions arise as to what are these north and south countries.

The North is represented by the developed countries. It comprises forty countries plus the European Union consisting of 15 countries. Other than the most influential US, EU is the dominant group in Northern coalition.

The South is generally represented by G-77. G-77 was established in 1964 to help the south to group and negotiate. It has at present a membership of 133 nations. However, in the division of the world in developing and developed countries, the word developing is a residual category. It consists of 153 countries, of which 133 are G-77 countries. Twenty three countries neither belong to north nor to G-77 but are clubbed together with south, some of which like Kazakhstan at times prefer to align with developed countries.

Having spelt out the meaning of various terms used in the discussions on globalisation and environment, we present the environmental negotiations in a historical perspective so that you understand why these issues have become so important.

5.3 HISTORY OF ENVIRONMENTAL NEGOTIATIONS

Early attempts to develop environmental rules focused on the conservation of wildlife such as fisheries, birds and seals and to a limited extent, protection of rivers and seas. These early rules for bilateral and multilateral conflict resolution and attempts at conservation of wildlife and natural resources were shaped by three distinct aspects.

First of all, many of these developments were inspired by the efforts of private individuals, scientists and environmental organisations in the United States and Europe. Scientists played an important role in establishing connection between the overuse of natural resources and environmental degradation. Some other scientists who established the relationship between deforestation and reduced water availability inspired early environmental legislation at the national and international levels. Secondly, in general these developments were based on the growing awareness that

exploitation of natural resources cannot occur on an unlimited basis and that technological development brought with them pollution and other problems. International measures, some kind of regulatory incentives, including trade restrictions and economic incentives were, therefore, required to be provided.

Thirdly and most importantly, these early rules, conventions and treaties although intended to solicit international and bilateral cooperation for environmental conservation, largely acknowledged the sovereignty of nation states in determining their actions for environmental conservation. This principle of sovereignty of nation states has remained as one of the foundational principles in the subsequent international negotiations on global environment.

We give below a list of important international laws/rules/treaties developed before the establishment of the United Nations that subsequently undertook a leading role in environmental negotiations:

- In 1872, Switzerland proposed an international regulatory commission on protection of birds. This led to the formation of International Ornithological Committee in 1884, which formulated a treaty proposal and resulted in the adoption of the Convention to Protect Birds Useful to Agriculture.
- In 1916, the first bilateral treaty for the protection of migratory birds in the United States and Canada was signed between Great Britain and the United States.
- On the pollution front, the United States and Canada adopted a Water Boundary Treaty to prevent pollution. A treaty on pollution prevention was drafted in 1920 but not adopted. Another draft instrument was prepared during this period on the prevention of oil pollution of seas but was not adopted.
- The first international institution to address the natural protection was formed in 1909 in the international congress for the Protection of Nature in Paris which culminated into the first multilateral treaty of its kind. This was signed in Berne by seventeen countries in 1913 in the form of an Act of Foundation of Consultative Committee for the International Protection of Nature. This consultative committee was committed to the task of collecting, classifying and publishing information on international protection of nature.

5.4 SOME IMPORTANT DECLARATIONS AND CONVENTIONS

With the establishment of the United Nations in 1944, a new chapter in environmental negotiations began. The important conferences and declarations undertaken by the UN are discussed in this section.

5.4.1 The 1972 United Nations Conference on Human Environment

The conference was organised by the United Nations General Assembly in Stockholm from 5 to 16 June, 1972. It provided a general framework for the preservation and conservation of human environment. It provided common principles to inspire and guide people of the world in the preservation and enhancement of the human environment.

Conservation of environment remained a dominant theme in the conference. Trends underway before the Stockholm Conference relating to marine pollution, trans-boundary air and water pollution, and protection of wild and marine endangered species were reinforced. The issue of relationship between development and environmental degradation was only peripherally addressed in the Conference.

The new environmental movement that emerged in the 1960s was sparked off by Rachel Carson's book Silent Spring; the book drew attention of the world to the destruction of

wildlife by the use of pesticide DDT. She warned that these chemicals contained the prospect of a dying world in which springtime would no longer bring forth lease to new life but only silence. Carson revealed that our actions could lead to seriously damaging environmental consequences when we interfered with the natural systems we fully did not understand.

Source: *Simon Dresner, The Principles of Sustainability, Earthscan Publications, London, 2002. p.21*

The Conference adopted three non-binding instruments:

1. A resolution on institutional and financial arrangement;
2. A declaration containing 26 principles; and
3. An action plan containing 109 recommendations.

These non-binding instruments set the stage for subsequent international negotiations on environment. Apart from the creation of appropriate institutional arrangements to carry out future environmental negotiations, the most important contribution of the Stockholm Conference was the development of a set of principles that formed the backdrop of all subsequent international negotiations on environment. For example, principle 24 called for international cooperation to effectively control, prevent, reduce and eliminate adverse environmental impact in such a way that did not compromise the sovereignty of an individual state (see box below). Principle 21 affirmed that all states have to ensure that activities in their jurisdiction do not cause damage to other states. Principle 1 linked environmental protection to human rights as the norm. It declared the right to adequate environmental quality as a fundamental right. The Conference spurred international negotiations on environmental protection which resulted in the modification of these principles and their further refinement in the next international conference on environment in Rio-de-Janeiro, Brazil in 1992.

Principles of Stockholm Declaration, 1972

1. Human rights must be asserted, apartheid and colonialism condemned.
2. Natural resources must be safeguarded.
3. The Earth's capacity to produce renewable resources must be maintained.
4. Wildlife must be safeguarded.
5. Non-renewable resources must be shared and not exhausted.
6. Pollution must not exceed the environment's capacity to clean itself.
7. Damaging oceanic pollution must be prevented.
8. Development is needed to improve the environment.
9. Developing countries therefore need assistance.
10. Developing countries need reasonable prices for exports to carry out environmental management.
11. Environment policy must not hamper development.
12. Developing countries need money to develop environmental safeguards.
13. Integrated development planning is needed.
14. Rational planning should resolve conflicts between environment and development.
15. Human settlements must be planned to eliminate environmental problems.
16. Governments should plan their own appropriate population policies.
17. National institutions must plan development of states' natural resources.
18. Science and technology must be used to improve the environment.
19. Environmental education is essential.
20. Environmental research must be promoted, particularly in developing countries.
21. States may exploit their resources as they wish but must not endanger others.
22. Compensation is due to states thus endangered.
23. Each nation must establish its own standards.
24. There must be cooperation on international issues.
25. International organisations should help to improve the environment.
26. Weapons of mass destruction must be eliminated.

Source: *http://www.unep.org/geo/geo3/english/039.htm*

SAQ 1

Describe the **context** of the 1972 Stockholm Conference and its outcomes.

5.4.2 World Commission on Environment and Development (WCED)

Before the Rio Conference, the World Commission on Environment and Development was established by the UN General Assembly and chaired by the Norwegian Prime Minister Gro Harlem Brundtland. The commission was established outside the control of the governments and the UN system. The commission was asked to develop a "global agenda for change". Brundtland, as part of the mandate of WECD, wrote a report which is now famously known as the Brundtland Report or "Our Common Future". In many ways the Brundtland Report proved a catalyst for changing the direction of international negotiations on environmental degradation and conservation. Most importantly the report has contributed the concept of sustainable development that firmly relates environmental degradation with developmental activities.

> '*The present decade (1980s) has been marked by a retreat from social concerns. Scientists bring to our attention urgent but complex problems bearing on our survival: a warming globe, threats to the Earth's ozone layer, deserts consuming agricultural land. We respond by demanding more details, and by assigning the problems to institutions ill equipped to cope with them*' *(WCED 1987).*

Although the idea of sustainability has longer history, sustainability as a physical-biological-social concept was first dealt with in the Brundtland Report. It has not only popularised the concept but also elevated it to the global ethic. Sustainable development is defined by the Brundtland report as "development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

This notion of sustainable development has attracted quite a lot of critical thinking. However, the most important contribution of the Brundtland report in the international negotiations on environment comprises two aspects. First, the Brundtland approach has placed human welfare and human beings above the concepts of environmental sustainability. Secondly, it has introduced the notion of social equity directly in the negotiations on environment.

The United Nations Conference on Environment and Sustainable Development was prompted by the report *Our Common Future* (**1987**, World Commission on Environment and Development, also known as the **Brundtland** Commission), which called for strategies to strengthen efforts to promote sustainable and environmentally sound development. The most widely used definition of sustainable development is:

> ***development that meets the needs of the present without compromising the ability of future generations to meet their own needs.*** It contains within it two key concepts:

- ✓ The **concept of needs,** in particular the essential needs of the world's poor, to which overriding priority should be given; and
- ✓ The **idea of** limitations imposed by the state of technology and social organisation on the environment ability to meet present and future needs (Brundtland).

Sustainable development, according to one definition, demands that we seek ways of living, working that enable all people of the world to lead healthy, fulfilling, and economically secure lives without destroying the environment and without endangering the future welfare of people and the planet.The precise meaning of sustainable development has been widely debated. For example, two years after the Brundtland Commission's Report popularised the term, over 140 definitions of sustainable development had been catalogued.

Source: *http://en.wikipedia.org/wiki/Sustainable_development*

Influenced by the agendas set by the Brundtland report, which also resonates the concerns of developing countries, international environmental negotiations are no longer focused on protection and conservation of environment. Environmental matters are now being addressed in the context of economic matters, such as trade and development lending. The impact of Brundtland report is far reaching as it has

changed the direction of international negotiations on environment by relating it with development.

Polluter pays principle, differential standards for developed and developing countries and precautionary principle are some of contributions of Brundtland report. While the first two concepts are self-explanatory, the third one needs explanation. Brundtland report argued that a lack of adequate knowledge as to the potential environmental effects shall not be used to hinder policies and actions to prevent environmental degradation. Tshis principle has been widely accepted in the subsequent treaties on climate change, biodiversity convention and bio safety protocol.

SAQ 2

In what ways was the Brundtland report different from the Stockholm Conference and a step forward?

5.4.3 United Nations Conference on Environment and Development (UNCED)

In December 1987, the UN General Assembly accepted the Brundtland report and the following year it called for a UN Conference on Environment and Development, which finally took place in June 1992 in Rio, Brazil. Taking on from the Brundtland report, the UNCED has declared its mandate to develop strategies and measures to halt and reverse the effects of environmental degradation to promote sustainable and environmentally sound development in all countries.

5.4.4 The Convention on Biodiversity (CBD)

The negotiations on conventions on biological diversity largely remained focused on the sharp conflict between conservation and use of world's biodiversity. After the adoption of the convention in Rio the negotiations are still going on especially on the issues of indigenous/local community/farmers' rights to use their own resources and commercial rights to use biodiversity for generating profit.

The suggestion to combine existing conservation treaties into a comprehensive convention on biodiversity initially has come from the US in 1987. Initially the negotiations on biodiversity convention were focused on the conservation of environment considering as a common resource of the entire humanity, but the developing countries wanted sovereign control over their biological and genetic resources and refused to sign conservationist treaty.

The developing nations have challenged the developed countries' assertion that world's biodiversity, 80 percent of which exists in the developing countries (Fig. 5.2) was the common heritage of the humankind. They have succeeded to some extent to include in the convention that biodiversity is a common concern of humankind but not a common heritage and developing nations have sovereign right over their biological resources. The final text of the CBD lays down three principles:

1. conservation of biodiversity,
2. its sustainable use, and
3. fair and equitable sharing of benefits arising out of its use.

However, these principles of conservation, sustainable use and equitable distribution of benefits have produced conflicting negotiations rather than resolving any differences between the developing countries that hold biological resources and developed countries that have technological capacities to convert these resources into marketable commodities.

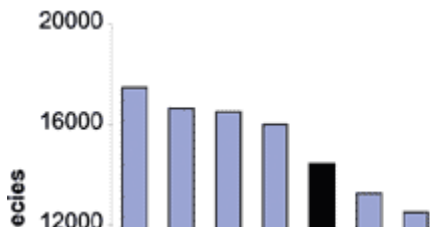

Fig.5.2: The number of endemic vascular plant species in 17 mega diverse countries
(**Source**: www.deh.gov.au/)

CONVENTION ON BIOLOGICAL DIVERSITY
UNITED NATIONS ENVIRONMENT PROGRAMME (UNEP)
Na.92-7807(5 June, 1992)
Article 10. Sustainable Use of Components of Biological Diversity

Each Contracting Party shall, as far as possible and as appropriate:

a) Integrate consideration of the conservation and sustainable use of biological resources into national decision-making;

b) Adopt measures relating to the use of biological resources to avoid or minimize adverse impacts on biological diversity;

c) Protect and encourage customary use of biological resources in accordance with traditional cultural practices that are compatible with conservation or sustainable use requirements;

d) Support local populations to develop and implement remedial action in degraded areas where biological diversity has been reduced; and

e) Encourage cooperation between its governmental authorities and its private sector in developing methods for sustainable use of biological resources.

Source: *http://www.libertymatters.org/biodiversityconvention.htm*

Roads that led to CBD

The discussions on this global agreement began at various forums such as UNEP in the mid 1980s. In 1988, the UNEP set up an ad hoc working group of experts on biological diversity. Based on its report, the UNEP established a group of technical and legal experts to work out a legal document. In 1991, this group was renamed as Intergovernmental Negotiating Committee (INC). The INC hammered out the text of the convention by 1992 to be signed at the Earth Summit at Rio in 1992.

However, before the draft text was tabled in the Rio, all INC discussions were hampered on the differences between the north and the south on the key issue. The North wanted an unabated access to germplasm in the South but was reluctant to provide equal access to technology and knowledge and share in the profit to the South. The developing countries, on the other hand, were determined to make access to genetic resources conditional to being given access to technology and profit. The subsequent meetings and debates centred on similar issues.

In spite of all the differences, the draft text of the convention was tabled at the Rio Conference. The US refused to sign it on the ground that the treaty gave too much leeway to the developing countries; the UK first objected to it but finally signed it; France, also wanting to have a global list on endangered species, refused to sign it. The developing countries also signed it but not without asking for more clarification on financial arrangements. The South also called for a protocol on bio-safety and asked for the supremacy of CBD over any other international agreements such as the World Intellectual Property Organisation (WIPO) and GATT (General Agreement on Tariff and Trade).

At that meeting almost every other country signed the CBD; by early 1996 it was ratified by 140 countries. On 29th December 1993, the convention was brought into force as international law.

The boat of CBD is heavily rocked by four important questions on which the negotiations are still continuing in four Conferences of Parties (CoP) since the signing of the treaty.

1. Should biological resources of one country be freely available to another country in the spirit of common human heritage? Or should countries have the right to demand appropriate financial and other returns on the transfer of their genetic and biological resources?

2. If local communities have nurtured and developed biological and genetic resources for generations, how should the benefits arising from commercial use be shared with them?

3. Do humans have the right to patent other life forms?

4. Should private monopolistic rights be allowed on genetic and other resources or on knowledge and other technologies related to these resources?

Continuing Negotiations: Farmers' vs. Breeders Rights

Business interests of biotechnology companies largely located in the US form powerful interests against the CBD. The power of these corporations came to light in Rio. Under the pressure of these business groups in the US, President George Bush's administration declared that the convention was an assault on the concept of intellectual property rights (IPR). Based on these objections to the treaty, the US refused to sign the treaty. The US refused to accept the ownership and knowledge rights of local communities and at the same time strongly asserted the ownership right of technology and know-how of bio-technology, pharmaceutical and agriculture based companies. The US has signed but still not ratified the treaty.

This conflict between the community vs. commercial rights was also manifested almost a decade before the Rio summit. At the time of negotiations on the International Undertaking of Plant Genetic Resources at the conference organised by the UN Food and Agricultural Organisation (FAO) in 1983, a free flow of plant germplasm was proposed. Over one hundred countries have so far adhered to the Undertaking. However, several industrialised countries (including the US, UK, France and Germany) have so far refused to be a party. This was because the Undertaking clearly included free flow of all types of genetic resources, not just biological and genetic resources conserved by the communities in developing countries but also new varieties developed by scientists and multinational corporations of the developed world. While it was argued that genetic and biological resources conserved by the traditional communities in the south were common human heritage, the new varieties developed in scientific and business establishments in the north were not common heritage of humankind. This knowledge was considered as an exclusive right of those who developed it. This double standard has remained at the core of all negotiations on biological and genetic resources leading to the CBD subsequently.

5.4.5 Trade and Environment: From GATT to WTO

In 1944, after the World War II, a recommendation was made in the conference among the international leaders in Bretton Woods to set up three international organisations:

1. International Monetary Fund (IMF)
2. International Bank for Reconstruction and Development (IBRD or the World Bank)
3. International Trade Organisation (ITO).

The first two were set up in 1945 but there were serious controversies about the third. The US, UK and a few other countries had set up in 1947 an interim organisation called General Agreement on Tariffs and Trade (GATT). In spite of many recommendations to set up the ITO under the US leadership, GATT continued because the US refused to the ratify it. All the three organisations now popularly known as Bretton Woods institutions were, from the beginning, dominated by the US. The GATT in particular was biased towards developed countries and was called informally as the “rich men’s club”.

On the insistence of developing countries that strongly protested against the bias of the GATT, the UN set up UNCTAD (United Nations Conference on Trade and Development) in 1964. During the negotiations of setting up UNCTAD, the developing countries established an organisation called G77. This group of developing countries was later joined by other developing countries; but the group still remained to be known as G77. Many developed countries known as G7, specially the US were opposed to the formation of the G77 but on the other side many Scandinavian countries were very sympathetic to G77.

Fig.5.3: The G77 countries in an UNCTAD meeting
(**Source**: www.unctadxi.org/sections/ u11/photos/G77-08.jpg)

The pressure of G77 gave legitimacy to UNCTAD and at one point it was perceived that UNCTAD would replace GATT. But the US strongly supported the GATT; hence it remained powerful. The sustained pressure of G77 made GATT progressively more liberal. Further amendments in GATT were called for because both G77 and G7 were not content with its provisions. The Uruguay round of discussions started in 1986. In these discussions, G77 for a while maintained its united position. The core group of G77 led by India and Brazil functioned quite effectively but in 1989 India accepted some of the proposals made by the US unilaterally. As a result India was isolated, but other countries also made their own compromises with the US. The end result was that the united position among the G77 counties was considerably weakened. At the same time, after the break up of the USSR, the US emerged as the most powerful nation on the Earth.

SAQ 3

Discuss the perspective of G77 countries and their role in the protection of the environment without compromising national interests.

With the strong support of the TNCs (trans-national corporations), the US pressed that GATT should not remain confined to only trade and tariffs but should also include services, investments and intellectual property rights and there should be World Trade Organisation (WTO) to oversee all the four. Several strong arguments for and against such a reformed role of GATT were expressed. At that point, the then Director General of GATT – Dunkel – put forward a draft of his recommendations – now popularly known as Dunkel draft of proposals. With some modifications, Dunkel proposals were accepted by all the members of the GATT in March 1994 at the ministerial level. At the time of signing, a dozen countries, including US and India, expressed reservations about the article 301 that seriously undermined the sovereignty of individual countries to decide trade related matters.

In spite of all reservations, finally in 1995, the WTO with its ancillary agreements, namely GATT (General Agreement on Trade and Tariff), GATS (general agreement on trade and services), TRIMS (trade-related investment measures) and TRIPs (trade-related intellectual property rights) came into effect.

One of the most important goals of WTO is to ensure the removal of all trade related distortions. The domestic trade related policies of each member country has to be harmonized with relation to international trade norms. The WTO, at the time of its establishment, declared in its preamble to increase the living standards and income, to expand trade and production and to preserve environment in a manner consistent with various levels of national economic development. The WTO intended to accomplish all these with the commitment to sustainable development.

Work on trade and environment at the WTO takes place *in* the ***Committee on Trade and Environment*** (CTE), which is responsible for covering the intersection of the environment services, goods and intellectual property. Paragraph 31 of the Doha Ministerial Declaration instructed the CTE to focus particular attention on market access for developing nations, intellectual property, and labelling. The WTO allows exceptions from its rules for environmental concerns provided that these policies are implemented without discrimination and must not be a disguised restriction on international trade.

The trade related aspects of WTO's negotiations are not discussed here in detail. The relation of trade with environmental aspects is discussed in detail as below. Three important areas that relate trade and environment are:

1. Trade related aspects of intellectual property rights (TRIPS);
2. Environmental standards and trade sanctions; and
3. Economic impact of WTO determined international trade regime and its impact on environment.

TRIPS

The TRIPS agreement sets out the rules for WTO members to protect intellectual property rights. Intellectual property rights are meant to be rights to thoughts, ideas, and information, especially regarding new inventions and processes. Copy rights, trademarks and patents are commonly known as IPRs. While such IPRs are several centuries old, their extension to the living things and related technologies is a new phenomenon and one that has evoked considerable controversy.

The two main categories of TRIPs are:

1. **Copyright and rights related to copyright:** i.e., rights granted to authors of literary and artistic works, and the rights of performers, producers of phonograms and broadcasting organisations. The main purpose of protection of copyright and related rights is to encourage and reward creative work.

2. **Industrial property:** This includes (a) the protection of distinctive signs such as trademarks and geographical indications, and (b) industrial property protected primarily to stimulate innovation, design and the creation of technology. In this category are included inventions (protected by patents**),** industrial designs and trade secrets.

Trade related aspects of intellectual property rights as provided for in the TRIPS through WTO come in conflict with those provided in CBD. While the CBD, in principle, gives primacy to conserve biodiversity, its sustainable use and fair distribution, TRIPS are based on 'might is right' principle. The bone of contention for southern countries with respect to IPR model currently adopted by both CBD and TRIPS is that, both do not recognise collective or community holding of intellectual property rights.

Much of the knowledge pertaining to biological and genetic resources in the developing countries has been guarded, nurtured and developed by local or traditional communities. For instance, knowledge about healing properties of turmeric and pesticidal properties of *neem* in many south Asian countries is known traditionally for centuries. This knowledge is held commonly and transferred to the next generation through cultural routes. The idea of patent on such knowledge sounds ridiculous to many of us; nonetheless, when someone attempts to get the patent on such collectively held knowledge, the current model of IPR does not allow collective patent.

Bio piracy, stealing of culturally and communally held resources and knowledge and patenting some aspects of such knowledge for monopolistic exploitation of commercial rights is the major threat that the developing countries face in the current model of IPRs. In such a case not only will the environmental resources and knowledge be depleted, but also those who took care of such resources and knowledge would have to pay in order to access their own resources and knowledge.

The entry of multinational agribusiness companies in the developing countries as a result of liberalisation in the WTO trade regime would also entail threat to the local seed and animal varieties. This is one major reason why this kind of a regime is meeting stiff resistance from people all over the world.

Patenting of Genetically Modified (GMOs) and Living Modifed Organisms (LMOs) is another ethical issue that has generated major debate on WTO agreements. Apart from the ethical and very important issue concerning the patenting of living organisms, what kind of environmental and health threat cultivation and consumption of such organism would possibly generate is still largely debated. For example, trade in genetically modified corn is a major issue of tussle between the EU and the US. In January 2000, over 130 countries adopted the much debated Cartagena Protocol on Biodiversity. The Protocol establishes rules for trans-boundary movement of GMOs and LMOs.

Fig.5.4: Advocates say that genetically modified food will feed a hungry world, but activists argue that it threatens the environment. What do you say?

In accordance with the precautionary approach contained in Principle 15 of the Rio Declaration on Environment and Development, the objective of this Protocol is to contribute to ensuring an adequate level of protection in the field of the safe transfer, handling and use of living modified organisms resulting from modern biotechnology that may have adverse effects on the conservation and sustainable use of biological diversity , taking also into account risks to human health, and specifically focusing on trans-boundary movements. (**The Cartagena Protocol on Bio safety**)

You may like to learn briefly about the Indian experience in this regard.

Protection of Biodiversity and Traditional Knowledge – The Indian Experience

India is one of the twelve-mega biodiversity countries of the world. With only 2.4 percent of the land area, India already accounts for 7 percent to 8 percent of the recorded species of the world. This number is based on the survey of 65 to 70 percent of the total geographical area of the country. Over 47,000 species of plants and 81,000 species of animals have been recorded by the Botanical Survey of India and the Zoological Survey of India respectively. It is anticipated that some of the remaining areas (e.g., Himalayan region, A & N Islands) may

be far richer in biological diversity than most of the areas already surveyed. India is equally rich in traditional and indigenous knowledge, both coded and informal.

In the recent past, there have been several cases of bio piracy of traditional knowledge (TK) from India. First it was the patent on wound-healing properties of haldi (turmeric); now patents have been obtained in other countries on hypoglycaemic properties of karela (bitter gourd), brinjal, basmati rice variety etc. An important criticism in this context relates to foreigners obtaining patents based on Indian biological materials.

There is also the view that the TRIPS Agreement is aiding the exploitation of biodiversity by privatizing biodiversity expressed in life forms and knowledge. For preventing such instances in future there is a need for developing digital databases of prior art related to herbs already in the public domain. Following patents on brinjal, etc., in India, an exercise has been initiated to prepare easily navigable computerized database of documented TK relating to use of medicinal and other plants (which is already under public domain) known as TK Digital Library (TKDL). Such digital database would enable Patent Offices all over the world to search and examine any prevalent use/prior art, and thereby prevent grant of such patents and bio-piracy.

Source: *http://commerce.nic.in/ip_c_w_198.htm*
http://webpages.charter.net/westons/biopiracy.html

5.4.6 Rio Declaration on Environment and Development

The declaration that came out of UNCED, also known as Rio declaration, is a statement of principles or goals, which was adopted by 175 countries at the UNCED. According to some critics, it was drafted in a general and vague language, but it touches many of the political topics in the UN. The Secretary General of the UNCED expected the Rio declaration to become an “Earth Charter” that would have stirred the minds and hearts of the people and would have inspired them to join together to achieve a healthy planet. Whether or not the declaration succeeded in making such an emotional appeal to people on the Earth, it certainly succeeded in putting the agenda of the developing countries in the forefront. The declaration represents a series of compromises between the developed and the developing countries and a balance between the objectives of environmental protection and economic development.

The preamble declares the goal of the Declaration to be a “new and equitable global partnership.” The last line of the preamble was added on the insistence of the NGOs, that the preamble should reflect both an ecosystem approach (integral and independent nature of the Earth) and a foundation in basic human morality by declaring it as our home. Principle 1 declares to keep human beings at the centre of the sustainable development. On the insistence of the G77 and China, the declaration was drafted on the central theme that it was about people and their environment and development. Principle 2 strongly builds on the Principle 21 of Stockholm Declaration to emphasise that sovereign rights and duties are two sides of the same coin and cannot be analyzed separately. However, unlike the Stockholm declaration that declared the right to environment as a fundamental human right, the Rio declaration adopted “right to development so as to equitably meet development and environmental needs of present and future generations” as Principle 3. The concept of the right to development was included in the declaration on the insistence of G77 and China which the US, Canada and EU opposed saying that it was an artificial right. G7 argued that the concept of the right to development moved the focus away from the abuses of fundamental human rights.

G77 and China, on the other hand, brought the focus back to the political debate about the development aid, international economics and causes of poverty. This issue has remained contentious and spread across several other debates on human rights, environmental protection and development. The US refused to accept the Principle 3 that declared the right to development as a human right and recorded an objection to it at the time when the Rio declaration was adopted. The US objection rested on the argument that development is not a right but it is a goal which depends upon how human rights are protected and promoted.

Principle 4 came closest to the definition of sustainable development. It declared that in order to achieve sustainable development, environmental protection shall constitute an integral part of the development process. Principle 5 has further stated that eradication of poverty is an indispensable requirement of sustainable development. Principle 6 commits to provide special priority to the least developed and environmentally vulnerable countries.

Principle 7 became a battle ground for G77 and China on the one side and the developed countries on the other. Developing countries' delegates wanted a principle that laid the "blame" for current global environmental problem squarely on the industrialised countries. In their draft they wanted the developed countries to take the obligation to transfer clean technologies at non-commercial rate and to provide more financial assistance to deal with the environmental degradation to the developing countries.

The final principle text did not come close to the intentions of the developing countries which made them very reluctant to accept the final text of the declaration. Principle 7 does recognize that "in view of the different contribution the global environmental problems, states have common but differential responsibilities". Further, it has stated that the developed countries bear the responsibility for sustainable development in view of the pressure their societies put on the global environmental degradation.

The developing countries were not happy with mere acknowledgement of the developed countries' responsibility, whereas the developed countries delegates argued that it was not appropriate for the developed countries to take unilateral responsibility without a similar acknowledgement from the developing countries. The final text was a compromise text of the Chairman of the Prep-Corn committee. The United States recorded an interpretative statement on principle 7 saying that the US highlights special leadership for environmental protection and does not accept any obligation or liabilities to the developing countries. The remaining 20 principles have further defined rights and obligation of different actors for environmental protection, which are largely non-controversial.

Fig.5.5: The Rio 1992 logo

The Rio declaration thus represents a careful improvement on Stockholm. However, the declaration carefully avoids the most difficult political issues such as resource transfer, historical responsibility, lifestyles and consumption, war and environment and trade and environment. Nevertheless, the declaration provides the most important guiding background for all negotiations on global environmental problems since its adoption.

SAQ 4

In what respect can the Rio Declaration be called an improvement over the Stockholm Conference? What are the contentious issues that have not been addressed by it in relation to the interests of developing countries?

5.5 RIO +5 AND RIO+10

The focus of the Rio+5 Forum was to move sustainable development "From Agenda to Action." The Forum focused on identifying key strategies and management systems for "operationalising" sustainable development at the local, national and global levels.

Fig.5.6: Rio +5 initiated the move from agenda to action

It had to be admitted that Agenda 21 was not funded and very little progress was made in implementing the committed principles of the Rio Summit (1992). It was acknowledged that the planet's health was worse off than five years prior, but the measures as to how to finance sustainable development were left unsettled and few new commitments to concrete action were made by different governments.

> *The Five years that elapsed since the Rio conference have clearly shown that changes in the global political and economic structure have not been followed through by commensurate progress in the fight against poverty and the predatory use of natural resources.* – President Fernando Henrique Cardoso of Brazil, whose country hosted the 1992 Earth Summit, Rio + 5, 1997.

The Johannesburg Summit of 2002 was a sequel to the 1997 meeting. The Summit on Sustainable Development was to discuss ways of judicious use of natural resources to save planet earth and alleviate poverty. It ended in a major disappointment as no new commitments were made to tackle any crisis and the lack of progress demonstrated the unenthusiastic response of the governments, even as the environment continued to deteriorate. It ended with weak and non-binding agreements to promote sustainable development.

5.6 FROM DECLARATION TO IMPLEMENTATION

Gro Harlem Brundtland has described the Rio declaration as the “promises made by world leaders.” Agenda 21 is described by many observers as a successor of the “common future” and, as one critic observed, it is most quoted, misrepresented, widely discussed and little- read document of the UNCED process. It was conceived as a plan for action by and for international community and is accordingly known as a plan of action that emerged from the Rio conference. The massive plan of the Agenda 21 contains 470 pages and 40 chapters. Its implementation is a specific mandate of the United Nations Commission on Sustainable Development (CSD). CSD is supposed to monitor and highlight the efforts of the nations to achieve the overall goals of Rio declaration.

Agenda 21 comprises a preamble and four sections. Section I provides for international action in relation to international cooperation, poverty, consumption patterns, population, human health, sustainable human settlement and integration of environment and development in decision making. Section II is concerned with the conservation and management of resources for development. Section III provides for public participation in decision making, it identifies interests groups and their mobilisation in order to increase public participation in the national and international cooperation. It was widely acknowledged in the post Rio conference that two issues of key concern of the southern countries were not adequately covered: the financing of sustainable development in the south and the transfer of technology from north to south for sustainable development. Through Section IV of Agenda 21, CSD is expected to bear the responsibility to carry forward the crucial north-south issues of financial aid and technology transfer. The long term implementation of the Rio declaration now rests with the CSD on the implementation of Agenda 21.

5.7 GLOBAL ENVIRONMENT FACILITY

At the September 1989 meeting of the Development committee, the World Bank was asked to assess the requirements for additional funding and potential interest from donors in supporting actions to address global environmental concerns in the developing countries. A paper entitled “Funding for the Global Environment” outlining the goals and general modalities were prepared for the March 1990 meeting convened by the World Bank in Paris. It was proposed to establish a Global

Environment Facility (GEF) as a pilot programme under which grants or concessional loans will be provided to the developing countries to help them implement programmes that protect the global environment. Four areas have been identified for the operations of the Facility. These areas are

- Protection of Ozone Layer
- Limiting Emissions of Greenhouse Gases
- Protection of Biodiversity
- Protection of International waters

The GEF portfolio in India is diverse and varied. As of January 1999, a total of US$ 146.18 million under GEF has been programmed for India, of which UNDP/GEF India is responsible for US$ 31.18 million and the World Bank/IFC for US$ 115 million. India is the second highest recipient of GEF funding, and there have so far been 7 operational projects, 5 PDF projects and 7 pipeline/approved projects covering the focal areas of biodiversity and climate change.

As regards the distribution by focal areas, 10 projects fall under the climate change and 5 projects are covered under biodiversity. One of the major initiatives is its funding based in New Delhi, India's Capital City. New Delhi has the largest bus fleet among India's major cities. Since it is one of the most polluted cities, the importance of reducing pollution from these buses was recognised by the Supreme Court of India which mandated the replacement of the existing fleet. The GEF Grant, approved in 2001, would support the operation and testing of eight fuel-cell bus projects. The grant is for $6.28 million dollars; support from other donors amounting to $12.12 million would envision the operation of new technology under local conditions.

Source: *http://www.gefweb.org/main.htm*

In two more meetings convened in 1990 a number of developing countries participated and prepared modalities for the proposed GEF which were discussed covering the funding allocation criteria, and other organisational procedures. Among other things there was a consensus on the following points:

- GEF should support programmes and activities for which benefits would accrue to the world at large.
- GEF funded programmes should be implemented in consultation with the UNEP, UNDP and the World Bank.
- Contributions from the donors shall be on highly concessional terms.
- Non Government Organisations may be involved wherever possible, in the design and implementation of the environmental activities funded by the GEF.

The GEF was restructured in 1994 to ensure that the governance is transparent and democratic in nature and promote universality in its participation. The agreed incremental costs of the activities concerning hard degradation were also made eligible for the funding under Agenda 21.

In this unit, we have provided an overview of various international agreements related to the environment in the context of globalisation. We now summarise its contents.

5.8 SUMMARY

- Human greed rather than human need resulted in most of the causes for environmental degradations. Nations that have access to more capital and sophisticated technologies have exploited the natural non-renewable resources resulting in the division of the nations as haves and have-nots and in turn dividing the globe into the global north and global south. As it so often happens, the global commons have no longer remained as global commons.

- Global efforts for protecting the environment date back to 1870s when Switzerland tried to reach a regional agreement to protect nesting sites of migratory birds. It is only after the formation of the United Nations in 1944, that

the movement for establishing international environmental laws gained necessary momentum.

- The declaration of Permanent Sovereignty over Natural Resources (1962), Declaration of the United Nations Conference on the Human Environment Declaration on Environment (1989) culminated in the Rio Declaration on Environment and Development (1992). The establishment of Global Environment Facility (1990) and the creation of GEF Trust Fund (1994) resulted in focusing the importance of World Nations on the protection of global commons. It is an irony that on one hand technology has contributed to environmental degradation, and on the other it has been conceived as the saviour from global environment destruction.

5.9 TERMINAL QUESTIONS

1. Trace the History of Global Environmental Negotiations highlighting the salient features of some of the Declarations.
2. Explain the importance of Rio Declaration on Environment and Development.
3. Explain the role of General Environment Facility in providing a level field to the developed and developing Nations.

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UNIT 6 INTERNATIONAL ENVIRONMENTAL LAWS AND AGREEMENTS

Structure

6.1 Introduction
Objectives
6.2 General Principles of International Environmental Law
6.3 International Environmental Policy: A Southern Perspective
6.4 Important International Environmental Agreements
6.5 Environmental Laws: Their Implications for South Asia
6.6 Summary
6.7 Terminal Questions

6.1 INTRODUCTION

In the previous unit you have studied about the principle and recommendations of various summits and conferences held for the protection of the environment. In this unit we will discuss the international laws enacted and agreements made for protecting and preserving environment for sustenance of life on our planet.

With the rising level of environmental degradation, the international law has expanded to cover environmental issues also. This became necessary since pollution tended to transcend national boundaries. A respectable number of international agreements have been concluded on environmental issues. However, it is not possible or desirable to discuss all of them. Therefore, in this Unit we shall discuss only the general principles of International Environmental legislation and salient features relating to some of the important laws and agreements.

Objectives

After studying this unit, you should be able to:

- explain the general principles of international environmental law;
- discuss the salient features of major international environmental agreements;
- examine the impact of North vs. South dynamics on the development of international environmental law; and
- analyse the implications of strong environmental standards for the development prospects of the South.

6.2 GENERAL PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW

The overall examination of the international environmental law reveals eight principles, which we briefly describe in this section.

- **Principle of State Responsibility**

  A state incurs state responsibility if it commits a breach of international obligation, say, not to pollute an international river. An international obligation stems primarily from an International treaty, custom or judicial decision.

A state will be responsible if

- the wrongful act/omission has resulted in the breach of any International obligation;
- the breach is committed by the agents of the State;
- the wrong is done by a private individual and the state did not exercise due diligence to prevent the damage.

State responsibility is a traditional principle of general international law which can be applied to environmental wrong doings.

- **Principle of Good Neighbourliness**

According to the most basic principle of international law, every state has an absolute authority to use and enjoy its own territory. However, according to the customary principle of good neighbourliness, a state has to use its property in such a way that its action does not injure and harm the property or the legal interests of another state.

Good neighbourliness is a backdoor through which environmental law has entered the international field. For example, in Trail Smelter Arbitration, the toxic fumes from the smelting operations carried out in the Canadian territory escaped into USA. As a result, the property of a US citizen was damaged. Canada was held responsible on the basis of violating the principle of good neighbourliness.

- **Principle of Cooperation**

This is also a general principle of International law. It holds good in dealing with environmental problems. Global environmental problems cannot be managed without state cooperation.

- **Principle of Sustainable Development**

Principle 3 of the Rio Declaration describes sustainable development as a tool that meets the needs of present generations without compromising the ability of future generations to meet their own.

This principle is popularly understood as the principle of integration between ecological and economic concerns. It is based on the understanding that the goals of environmental prosecution and economic development are complementary to each other and one cannot be achieved without the other.

- **Principle of Polluter Pays**

It means that the polluter has to pay for the consequences of pollution. That is, the polluter has the responsibility of bearing the costs of rectifying the environmental damage resulting from pollution. This principle has a special importance as far as the North-South relationship is concerned. The North has a major share in global pollution; so, the South demands that the North has to take greater responsibility and pay more for the costs for not adhering to pollution abatement measures.

We give here an illustration of this principle from India.

Fig.6.1: Untreated effluent from tanneries

Petitioner, the Vellore Citizens Welfare Forum, filed this action to stop tanneries in the State of Tamil Nadu from discharging untreated effluent into agricultural fields, open lands and waterways. Among other types of environmental pollution caused by these tanneries, it is estimated that nearly 35,000 hectares of agricultural land in this tanneries belt has become either partially or totally unfit for cultivation, and that the 170 types of chemicals used in the chrome tanning processes have severely polluted the local drinking water. The Court has passed other orders relating to this case, and has monitored this petition for almost five years.

Source : *http://www.unescap.org/drpad/vc/document/compendium/in5.htm*

- **Principle of Precaution**

  We know that prevention is better than cure. There are some kinds of environmental damages of very serious and irreversible nature. In such cases, scientific uncertainties about the possible harm should not be used as a reason for postponing preventive actions.

- **Principle of Intergenerational Equity**

  This principle requires us to remember that the earth is not the exclusive property of the present generation of human beings only. It is a common endowment for the entire mankind. So, we should hold the planet earth in trust for the future generation. We should use the natural resources carefully and avoid causing unnecessary environmental damages to people of future generation. This is a principle of fairness.

  A judgment of Philippines court is worth mentioning here. When the Philippines government gave permits for deforestation, 44 minors and an environmental organisation challenged the government against it. They contended that they are representing not only themselves but also future generations. The court allowed them to represent the case of unborn future generation also. This shows that intergenerational equity principle is gaining good acceptance.

- **Principle of Common but Differential Responsibility**

  It is well recognised that the ill effects of environmental degradation will eventually affect all countries. Therefore, all states have to assume the common responsibility for protecting the environment. But the share of the contribution cannot be equal. It has to be different because all the countries do not have an equal capacity to maintain the environment. The states that pollute more and have higher capacity should share major responsibility in maintaining the environmental quality.

World Charter for Nature: general principles

The genetic viability on the Earth shall not be compromised; the population levels of all life forms, wild and domesticated, must be at least sufficient for their survival, and to this end necessary habitat shall be safeguarded.

All areas of the Earth, both land and sea shall be subject to these principles of conservation; special protection shall be given to unique areas, to representative samples of all the different types of ecosystems and to the habitat of rare or endangered species.

Ecosystems and organisms, as well as the land, marine and atmospheric resources that are utilized by man [sic], shall be managed to achieve and maintain optimum sustainable productivity, but not in such a way as to endanger the integrity of those other ecosystems or species with which they co-exist.

Nature shall be secured against degradation caused by warfare or other hostile activities.

Source: *UN 1982*

SAQ 1

From newspapers and other sources, collect examples that illustrate the general principles of International laws for the environment enunciated in this section.

6.3 INTERNATIONAL ENVIRONMENTAL POLICY: A SOUTHERN PERSPECTIVE

The Stockholm Conference, 1972 and the Rio Conference, 1992 laid down a broad and comprehensive international environmental policy. The North-South (which

Fig.6.2: Poverty and underdevelopment are major sources of environmental degradation

includes South Asia) dynamics has a great role to play in shaping the framework of this policy. The South opposed strong environmental policy; its arguments and demands being as follows:

- Environmental problems arise not just from over-development. Poverty due to underdevelopment is a major source of environmental degradation.
- The South does not have the economic and technological strength to follow strict legal commitments and international standards.
- The State has sovereign freedom to use and enjoy their resources for their development in accordance with their individual policies.
- North's extensive development and excessive consumption of natural resources caused major environmental degradation. Therefore, it should assume greater responsibility for the protection of environment (principles of polluter pays & common and differential responsibility)
- Economic developmental concerns should be integrated in environmental policies (Principle of sustainable development).
- North should transfer financial and technological resources to South to make it capable to protect the environment (principle of equity).

The South enters the third millennium facing monumental challenges when it comes to efforts for economic progress and sustainable and equitable development. At the core of these challenges is the ability of the South to participate in and benefit from the rapid advances in scientific research and technological innovations that now drive economic and social development. Several developing countries, including Argentina, Brazil, China, Cuba, India, Mexico and Singapore, have established research programmes in modern biology and biotechnologies of high standard. These countries are in a strong position to assist others in the South to develop their local capacities in this important field.

Source: *http://wmy2000.math.jussieu.fr/9_2000_Feb-_KOREA.htm*

Due to the South's opposition, no legally binding commitments could be adopted in the two conferences. They adopted only the declarations namely, United Nations Conference on Human Environment, 1972 (26 principles) and Rio Declaration on Environment and Development, 1992 (27 principles). These declarations consist of only non binding principles.

In the Rio conference, apart from the Rio Declaration on Environment and Development, the following were adopted.

- Agenda 21
- Climate Change Convention
- Biodiversity Convention
- Non-Binding Principles of Forests

You have studied in the previous unit that the Rio Declaration consists of 27 principles. It contains all the general principles of international environmental law , i.e., sustainable development, polluter pays, precautionary principle, common but differential responsibility, good neighbourliness, state responsibility, Intergenerational equity, etc.

SAQ 2

Formulate your own views on each argument and demand of the South given in this section. Justify your views with facts, data and evidence.

You have studied about the important international laws in MED-002. Here we state them briefly for the sake of completeness.

6.4 IMPORTANT INTERNATIONAL ENVIRONMENTAL AGREEMENTS

- **Ramsar Convention, 1971**

  This convention is adopted for the protection of wetlands. It recognises ecological functions and the economic, cultural, scientific and recreational values of wetlands. Under this, the state parties should designate at least one national wetland of international importance. Parties should assess the impact of any change of use of wetlands, should establish wetland as natural reserves, manage and make wisely use of the migratory stocks of waterfowl (bird) etc.

(a)

(b)

Fig.6.3: a) Wetlands in Karnataka; b) the Taj Mahal (**Source** : en.arocha.org/images/ shared/656l.jpeg and www.pgsindia.net/photos/)

- **World Heritage Convention, 1972**

  It highlights the universal value of the cultural and natural heritage. It advocates the international support for maintenance of the World Heritage sites. A state party has an obligation to identify, protect, conserve and transmit to future generations the unique cultural and natural Heritage of that country. Those sites that are nominated by the states will be enlisted on the World Heritage list.

World Heritage Sites

The coveted title of a world heritage site is granted by United Nations Educational, Scientific and Cultural Organisation (UNESCO). To qualify for the status, a site must possess the following attributes: It should represent a masterpiece of human creative genius, exhibit an important interchange of human values over a span of time, be an outstanding example of type of traditional human settlement or land-use, especially when it has become vulnerable under the impact of irreversible change. The following are some of the World Heritage sites in India: **Taj Mahal** , **Ellora Caves**,**Agra Fort**,**Ajanta Caves**,**Mahabalipuram** , **Sun Temple-Konark**, **Khajuraho**, **Fatehpur Sikri**,**Hampi** Monuments, **Kaziranga National Park**, **Keoladeo National Park**, **Sunderbans National Park**, **Nanda Devi National Park, Brihadisvara Temple Tanjore**, **Elephanta Caves**, **,Buddhist Monuments at Sanchi**,, **Qutub Minar**, **Humayun's Tomb- Delhi** ,**Darjeeling Himalayan Railway**s, **Mahabodhi Temple**, **Bodh Gaya**, **Champaner-Pavagadh Park**,**Chhatrapati Shivaji Terminus**, i.e., **Victoria Terminus**.

Some of the World Heritage sites in the South Asian region include the Archaeological Ruins of Mohenjodaro and Taxila in Pakistan, Historic Mosque City of Bagerhat, Ruins of Buddhist Vihara at Paharpur, Sagarmatha National Park, Royal Chitwan National Park, Lumbini (birthplace of Buddha), Ruined city of Anuradhapura, monumental remains of Polonnaruwa and Galle, the Golden Temple of Dambulla in SriLanka.

Source: *http://www.the-south-asian.com/Sept2001/South%20Asian%20World%20Cultural%20heritage1.htm*

- **London Dumping Convention, 1972**

  This convention is designed to control the dumping of wastes in the sea. It requires the states to limit the dumping of such substances as radioactive material, biological and chemical warfare agents, persistent plastics, heavy metals and toxic organics. In 1993, bans on the ocean disposal of low level radioactive material and industrial wastes were adopted. A protocol was added in 1996. Under this, seven more substances were listed. These substances can be dumped only after getting permission.

- **Marpol Convention, 1973/78**

  This convention is aimed at preventing or reducing the discharges (international or accidental) from ships into seas. It greatly limits the amount of oil spill and ship generated waste which can be discharged into the sea. There is a complete ban against dumping in areas designated as special areas, for example, in the Caribbean Sea and Gulf of Mexico.

- **CITES, 1973 (Convention on International Trade in Endangered Species)**

  Under this convention, parties should identify species that are, or may be threatened by trade. They should also identify those species that may be threatened unless the trade is regulated. The former should be listed in Appendix-I and the latter in Appendix-II. Commercial trade is forbidden for species listed in Appendix-I, for example, dolphins and whales. While not banned, the trade is strictly regulated in respect of species listed in Appendix-II.

According to the World Wildlife Fund, by the year 2025, one fifth of the existing species could be extinct. Following are some of the endangered species:

Sumatran Tiger: This is listed as critically endangered with the total population estimated at just 400 to 500. The world lost more than 90% of its tiger population in the 20th century and there are fewer than 5,000 alive in the wild, mainly in India, China, Siberia and Indonesia. Three of eight tiger sub-species are extinct: the Bali tiger, the Caspian tiger and the Javan tiger.

Sumatran oran-utang: With the forest habitats being cut down or burnt, these species are estimated at 4,000 to 6,000. In 1997, forest fires throughout Indonesia saw many oran-utangs flee into the hands of captors and hunters, although some were relocated to reserves. The species could be extinct by 2010, in case they are not protected.

Northern White Rhino: There are thought to be fewer than 25 northern white rhinos, all in Garamba National Park, Africa, and they are one of the world's 12 most endangered species. The decline has been attributed to poaching by rebel troops in Congo.

Snow leopard: The existing number is estimated to be fewer than 2,500 as the species is declining in China, Russia and Pakistan and is on the verge of extinction in Mongolia. The illegal trade in the bones and body parts for traditional medicines threatens its survival.

Mountain Guerilla: Only 650 are said to be alive in the Virunga range of volcanic mountains on the borders of Congo, Rwanda and Uganda.

Giant Panda: According to a survey, China's giant panda population is estimated at 160. The Chinese Government established 40 panda reserves, protecting about 45% of the panda habitat.

Source: *Following the dodo, The Hindu, September 5, 2004. (Excerpts from Guardian Newspapers Limited, 2004).*

- **Law of the Sea Convention, 1982 (Parts V & XII)**

  It seeks to protect and preserve the marine environment. It directs the states to take measures to prevent, reduce and control the marine pollution, protect fragile ecosystems, monitor risk/effects of marine pollution etc. A state should not cause

damage to the other states by pollution. It should notify other states where marine environment is in imminent danger. In the EEZ (Exclusive Economic Zone), there should not be over exploration of living resources by the coastal state.

- **Vienna Convention on the Protection of the Ozone Layer, 1985 & Montreal Protocol, 1987**

  Ozone is a protective layer of the atmosphere. It shields the earth from the Sun's harmful radiation. We all know that CFCs (Chlorofluorocarbons) deplete ozone. The Vienna Convention, 1985 followed by 1987 Montreal Protocol aims at phasing out the production and consumption of ozone depleting substances. The Montreal Protocol sets firm targets for the states for phasing out the CFCs. But it has permitted the developing states to delay their compliance of the protocol. It has also provided for the transfer of necessary technology to the developing states. The convention also restricts the trading of ozone depleting substances.

- **Basel Convention (On the control of Trans-boundary Movements of Hazardous Wastes), 1989**

  Hazardous wastes cause severe damage. Most often these Hazardous Wastes (hereafter referred as to HW) are exported by the developed states to the developing states. Therefore, this convention has special significance to them. This convention seeks to minimise the level of HW from its source of generation. No export is allowed to the countries which prohibit the HW unless consent is given by them. There should also be no export if there is a reason to believe that these wastes will not be managed by the importer in an environment friendly and sound manner. The availability of disposal facilities in the importing state should be ensured by the exporting state before exporting the HW. State parties should develop and prescribe guidelines for environmentally sound management of HW.

- **Agenda–21**

  It is a massive 800 paged document adopted by the Rio conference. It contains the Action-Programme for attaining sustainable development. It lays down 115 specific programmes. It is a key document but is not binding. Its recommendations are classified into different areas such as socio-economic issues to protect and promote human health, conservation and management of resources such as combating deforestation, desertification and drought, promotion of sustainable agriculture and rural development, strengthening networks consisting of women, NGOs, business, scientific and technological community, farmers, through financial resources, transfer of environment friendly technology, training, international legal instruments and mechanisms.

Fig.6.4: An action plan for Agenda 21 at the local level

- **Climate Change Convention, 1992**

  Long term fluctuations in temperature and other aspects are known as climate change. Global warming is a major environment problem shaking the entire world. It is caused due to the GHG (Green House Gas) emissions. According to the United Nations, climate change is "change of climate that is attributed to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods". This convention aims to stabilise the GHG emissions. The convention lays down general commitments applicable to all (annexed as well as non-annexed) state parties. These are to limit GHG emissions, gather relevant information, develop plans to mitigate and adapt to climate change, and cooperate in research and development.

  Under the convention, state parties fall into two categories, Annexed and Non-Annexed states. Annexed states are sub-divided into Annex - I (consisting of industrial states, OECD states and economies in transition) and Annex-II states

(consisting only of OECD States). Annex-I states have specific commitments to bring down their GHG emission to 1990 level. The Annex-II states also have to bring down the GHG emissions but their baseline limit is not 1990. The baseline can be voluntarily fixed by them. In 1997, Kyoto Protocol was attached to the convention to supplement it. By this, the specific and legally binding targets are fixed for the industrialised states to cut at least 5% from 1990 level. The target period is from 2008 to 2012. The Protocol also suggested the mechanisms for the fulfilment of targets.

Effects of Global Warming in the Himalayan Region

Environmentalists are warning that the melting of glaciers in the Himalayas could spell disaster for millions of people living in the region. They claim the situation is not being adequately monitored; the last major studies having been done in the 1990s. Swelling glacial lakes would increase the risk of catastrophic flooding. In the long term, the glaciers could disappear altogether, causing several rivers to shrink and threatening the survival of those who depend on them. There are 3,300 glaciers in the Nepalese Himalayas and 2,300 of them contain glacial lakes. These lakes are quietly growing because of rising temperatures, but a sufficiently close eye is not being kept on them. Campaigners say that no steps have been taken to install early warning systems. A burst would cause flash floods which could sweep away people, houses, roads and bridges in Nepal, Bhutan, Bangladesh and India. Such disasters are reported to have occurred at least a dozen times in the last 70 years. This could also lead to the drying up of rivers, thereby triggering a major water crisis in the region.

Source: *http://news.bbc.co.uk/2/hi/science/nature/3998967.stm*

- **Biodiversity Convention, 1992**

  It is the first global treaty which adopted a comprehensive ecosystems approach. Biodiversity is very essential for ensuring sustainable development. Initially the North wanted to declare biodiversity as the Common Heritage of Mankind. But the South refused because it wanted to retain the sovereign supremacy over its biodiversity. The convention outlined 3 objectives: 1) Conservation of biodiversity. 2) Sustainable use of the components of biodiversity and 3) Fair and equitable sharing of the benefits of using biodiversity.

  Under the convention, the states have obligations to develop national programmes for conserving and sustainably using the biodiversity, prepare inventories of bio-resources, take *ex-situ & in situ* conservation measures, establish a system of protected areas etc; it should be noted that the South is very rich in its biodiversity. Therefore, it has high stakes in this convention.

Fig.6.5: Biodiversity conservation is one of the topmost priorities in the world today

The Cartagena Protocol is an attachment to biodiversity convention. It is based on the precautionary principle. The benefits and dangers of biotechnology are not fully known. Therefore according to this Protocol, adequate measures of protection must be taken in matters of transfer, handling and use of living modified organisms.

Biodiversity

Biodiversity refers to the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. Tropical forests are the most species -rich environments. Though they cover less than 10% of the world's surface, they contain 90% of world's species. Living organisms contribute to a wide variety of environmental services such as the regulation of the gaseous composition of the atmosphere, protection of coastal zones, regulation of the hydrological cycles and climate, generation and conservation of fertile soils, dispersal and breakdown of wastes, absorption of pollutants, and pollination of many crops. They have an impact on human health and well being; 10 of the world's top selling drugs in 1997 were derived from natural resources.

The estimated number of described species is as following:

1) Bacteria-4000, 2) Protoctists (algae, protozoa)-80,000, 3) Animals (vertebrates)-52,000, 4) Animals (invertebrates)-12,72,000, 5) Fungi-72,000, 6) Plants-2,70,000.

Source : UNEP-WCMC (2000) Global Biodiversity Assessment, Cambridge, Cambridge University Press.

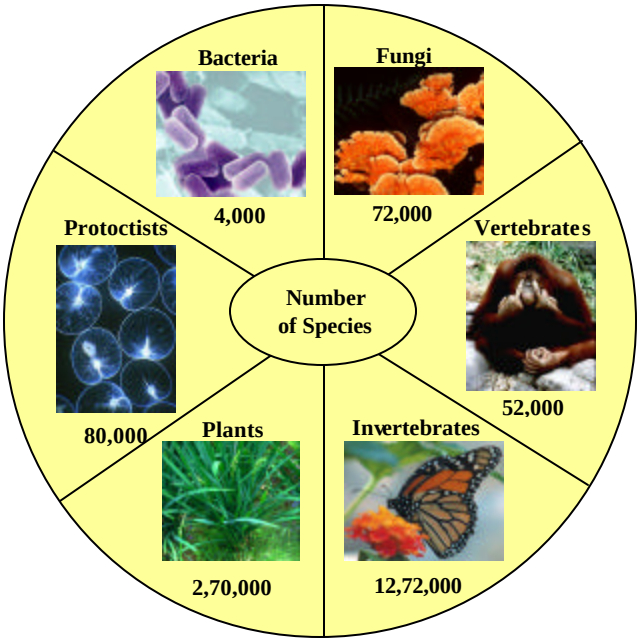

Fig.6.6: The estimated number of described species

- **UN Convention on Desertification, 1994**

States are directed to give priority to combat desertification and mitigate the effects of drought. They have to prepare and implement the national programmes in this regard. The CCD, as it is popularly called, endorses and employs a 'bottom-up' approach to international environmental cooperation. Its activities are related to the control and alleviation of desertification and the effects are to be closely linked to the needs and participation of local land users.

The Parties to the Convention have to make the prevention of desertification a priority in national policies and must promote awareness of desertification among their citizens.

- **HNS Convention, 1996 (International Convention on Liability and Compensation for Damage in connection with the carriage of Hazardous and Noxious substances)**

  This convention provides for liability and compensation for damage resulting from maritime accidents involving the carriage of hazardous and noxious substances.

An overall examination of the international environmental agreements shows that they have laudable objectives. But most of these conventions do not contain firm legal commitments. They, at the most, represent weak political compromises. Unfortunately, states do not follow even those commitments that are agreed upon. The major draw back of international law is that there is no effective enforcement machinery. Therefore, most international obligations relating to environment are consistently violated. The economic implications prevent the South from agreeing to the adoption of strong environmental laws at the International level. Being rich, the North is expected to take the major lead and help the South by transferring its economic and technological resources. But so far, the North's contribution in this regard is nominal. Therefore, the weakness of International environmental law is likely to remain as long as the stalemate between the South and North continues.

6.5 ENVIRONMENTAL LAWS: THEIR IMPLICATIONS FOR SOUTH ASIA

South Asia is the worst affected on both environmental and economic fronts. The levels of both poverty and environmental degradation are alarming.

South Asia's economic development and public health are at stake with the rise of environmental problems. In response to the environmental problems, the South Asian countries did adopt various legal and administrative measures. But these measures suffer from many drawbacks such as superficiality, laxity, obsolete standards, high bureaucratic content, bad implementation, corruption, lack of coordination amongst enforcing agencies, people's ignorance, inadequate right to information to public, etc.

Though it is true that the economic and technological backwardness prevents them from adopting tough environmental laws, it is important for South Asian countries to take into account the long term implications of poor laws to their economic development and public health. For example, if energy resources are inefficiently used due to ineffective environmental management, no economic development is possible in future. South Asia has to keep this in mind and develop its internal laws so as to protect its environment and economic development in the best possible way.

Environmental laws have both local and international implications. Environmental standards are high in the North and poor in South Asia. Industrial enterprises are attracted towards South Asia because of its loose environmental standards. The North views this as unfair trade advantage. Environmentalists warn that this leads to a "race to the bottom" situation, i.e., countries will reduce their environmental standards further to attract industries. This will severely damage the environment; South Asia has to seriously think about the environmental and public health implications if the polluting industries concentrate in this region.

The high environmental standards of the North also pose a challenge to South Asia's economic prospects. In many instances the North has banned or restricted the trade imports from South Asia on the ground that these goods do not conform to their local standards. Recently the USA banned shrimp imports from South Asia because these

were caught without using TED (Turtle Excluder Device) resulting in the killing of turtles, an endangered species. On the basis of free trade principles, the World Trade Organisation has given a decision in favour of India and Pakistan in this case. But the larger issue remains unanswered: How to reconcile the differences in the local environmental laws and standards? Whether trade restrictions could be used for improving environmental standards? How to know if the trade barrier is a disguised domestic protection? Though the issue is being debated, this issue, however, cannot be discussed in much detail here. But we have to remember that the South Asian region has a great diplomatic responsibility to ensure that the international environmental standards are not allowed to be set through the WTO mechanism, which inherently favours the North.

The South Asian region has 19% of global population on 2% of the land area, including almost 50% of the World's malnourished children. The sub-region is subjected to several natural hazards like earthquakes, droughts, cyclones etc. Other environmental issues in the region include overpopulation, deforestation, overgrazing, pollution, soil erosion and so on as you have studied in MED-001. Even though these countries have, over the years, striven hard to achieve self-reliance, under-nourishment continues to plague the region time and again. Though the region has abundant ecological resources, many of them are either untapped or lack the necessary technology to exploit the rich resources. The foremost requirements of the region are to:

Develop a global funding mechanism to support the gene rich countries and regions having weak institutional and technical capacity for funding infrastructure development, personnel development and expertise.

Create international fund to assist PGR programmes in conservation and sustainable use of biological diversity to minimise destruction of natural habitats and genetic erosion.

Establish regional fund for the conservation and sustainable utilisation of resources.

Source: *www.fao.org/WAICENT/FaoInfo/Agricult/AGP/AGPS/pgrfa/pdf/pacific1.pdf+environmental+laws+in+south+asia&hl=en*

6.6 SUMMARY

- Environmental laws are one of the tools to tackle environmental problems. But due to many economic and political reasons (as reflected in the North/South dynamics) the international environmental law has been able to develop only as a framework law with no strong legal commitments on the part of the states.
- The South which includes South Asia has strong economic reasons to oppose the adoption of strong legal commitments. However, it is experiencing the economic as well as environmental consequences both at the national and international level due to its weak environmental standards.

6.7 TERMINAL QUESTIONS

1. Elucidate the general principles of international environmental laws.
2. Explain the South's perspectives about international environmental policy.
3. Give an account of the salient features of various environmental laws.
4. Describe the salient features of international agreements adopted during Rio conference.
5. Explain the implications of environmental law and standards of South Asian countries.

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UNIT 7 ROLE OF THE UNITED NATIONS AGENCIES

Structure

7.1 Introduction
Objectives
7.2 Structure of the United Nations
7.3 UN's Environmental Agenda
7.4 Role of the UN Agencies
7.5 Obstacles for an Effective UN Role
7.6 Future Role of the UN
7.7 Bretton Woods Institutions
7.8 Summary
7.9 Terminal Questions

7.1 INTRODUCTION

In Unit 6, we have dealt with international laws and agreements pertaining to environment. We now discuss the role of the UN agencies in the upkeep of global environment. You may know that the United Nations was officially formed on the 24th October, 1945. Its forerunner, the League of Nations was conceived of in similar post-war circumstances in 1919. The League of Nations was meant to promote international cooperation and to achieve peace and security. Its demise happened due to its failure to prevent the Second World War. The term United Nations was first coined by the U.S. President Franklin D. Roosevelt and was first used as a collective pledge of representatives of 26 nations on the 1st January, 1942, as a commitment to continue to fight against the Axis Powers.

On October 24th, 1945, as many as 51 countries signed the United Nations Charter in South Africa. The charter was worked out based on the proposals drafted by the representatives of China, the United Kingdom, the Soviet Union and the United States. The central role of the United Nations was the promotion of peace and security, development and human rights. In order to attain these goals, the UN was meant to take effective and collective measures to prevent war, to develop friendly relations between countries and to achieve international cooperation for resolving international problems. The UN was meant to be the harmonising centre for all member states.

At present, there are 191 sovereign states who are members of the United Nations, which are virtually all nation-states. The United Nations is based on the principle of sovereign equality of each nation state. It is also the place where countries are meant to come together to address common problems. The United Nations is meant to be a conduit through which countries cooperate together and build structures of international governance that are acceptable to all and which help improve the standard of living of all. Therefore, the UN has an active role in the area of environment and sustainable development, which we now examine.

Objectives

After studying this unit, you should be able to:

- describe the structure of the UN;
- analyse the role of UN agencies in international environmental governance; and
- assess the role of Bretton Woods Institutions.

7.2 STRUCTURE OF THE UNITED NATIONS

The United Nations consists of six main organs – the General Assembly, the Security Council, the Economic and Social Council, the International Court of Justice, the Secretariat and the Trusteeship Council. Second, there are a number of United Nations programmes and funds such as the UN Children's Fund (UNICEF), UN Development Programme (UNDP), and UN Environment Programme (UNEP) etc. These programmes and funds fall under the Economic and Social Council of the UN but are also reported to the General Assembly. The third set of actors within the UN is the specialised agencies and analogous bodies working in diverse areas such as agriculture, health, labour and meteorology. Well known among these bodies are UNESCO, ILO, FAO and the World Bank set of institutions.

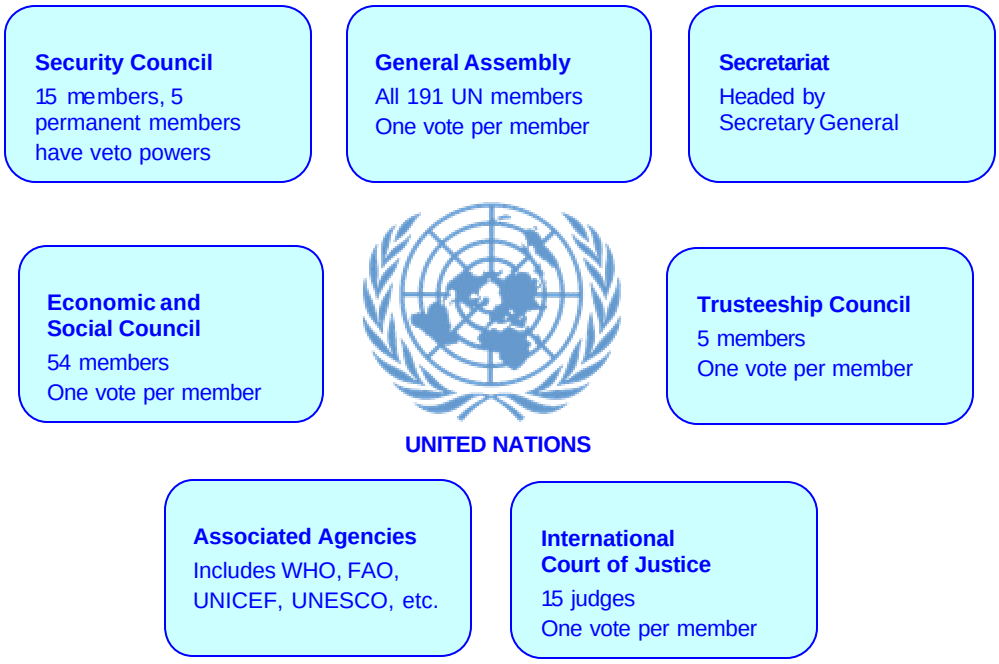

Fig.7.1: The structure of the United Nations

The UN system has a vast array of responsibilities. These responsibilities include peacekeeping, disaster management, health, natural resource management and even lending of money. In that sense, the scope of the UN mandate is aimed at providing a more stable and secure world with enhanced opportunities for all across the globe.

General Assembly

Fig.7.2: The General Assembly

The General Assembly is the mainstay of the UN. It is a unique body, in the sense, that it is the only forum where all countries sit down together and discuss their pressing problems. Moreover, all nation states have equal voting rights regardless of their economic status. The vote of the General Assembly represents at one level world opinion. The decisions of the General Assembly, however, are not legally binding on the Member States and only represent, at best, the moral authority of the community of nations.

Security Council

The Security Council is the UN organ which is in charge of security and international peace and deals with crises as they arise. Under the UN Charter, the Security Council's decisions are legally binding and the Member States are obligated to carry them out. At present, the Security Council is made up of 15 members out of whom 5 members are permanent. The 10 non-permanent members are periodically elected for a 2 year term.

The permanent members – China, France, the Russian Federation, the United Kingdom and the United States – have the veto power, i.e., they can block a proposal by casting a negative vote. This is something which has often happened and cast aspersions on the egalitarian nature of the United Nations.

Fig.7.3: The Security Council

Economic and Social Council

The Economic and Social Council (ECOSOC) is the central UN forum with regard to international economic and social issues. It has 54 members who are elected by the General Assembly for a three year term. ECOSOC plays a central role in strengthening the regional cooperation for development as well as setting priorities in terms of economic and social work.

Most of the UN programmes and funds and functional commissions including environmental ones such as the Commission on Sustainable Development (CSD) fall under the purview of ECOSOC. It thus coordinates the work of the UN specialised agencies, programmes and funds and undertakes follow-up action in terms of major UN conferences. This role has become all the more important in the context of globalisation and with regard to issues such as sustainable development. Environmental concerns fall under the jurisdiction of ECOSOC.

Secretariat

The UN Secretariat comprises various UN departments and is thus the backbone of the UN system. A number of offices/departments within the Secretariat address the environmental concerns. These departments are used in various UN programmes, but often they function in a very fragmented manner. As of late, under the process of UN reforms, attempts were made to create a separate department called the Department for Economic and Social Development. This was further split into two departments,

one of them being the Department for Policy Coordination and Sustainable Development (DPCSD) being the backbone of the UN's environmental agenda. This has led to a certain amount of overlap and conflict within the UN.

International Court of Justice

The International Court of Justice arbitrates on disputes between nation-states. In 1949, the Court confirmed an important principle, namely that every state has an obligation not to allow its territory to be utilised for actions which could harm the rights of other states. This act subsequently became important vis-à-vis environmental concerns as well and was to later emerge as Principle 21 of the Stockholm Conference. The International Court of Justice is an important body in terms of international environmental governance.

Fig.7.4: The International Court of Justice, the Hague, Holland

So far we have briefly described the structure of the United Nations. You may like to recapitulate it before studying further.

SAQ 1

In the graphic given in Fig. 7.1, list the functions of various arms of the UN.

7.3 UN's ENVIRONMENTAL AGENDA

There is nothing specific in the UN charter which addresses environment per se. The UN has, however, to achieve international cooperation with regard to economic, social, cultural and humanitarian problems which are of international scale. Moreover, environmental concerns have been subsumed under Article 55 of the Charter which aims at higher standards of living, social progress and solutions for health and related problems. Under Article 22 of the UN Charter, the General Assembly can and has established a number of specialised agencies and has launched a number of programmes and conferences related to the environment.

In addition to the action taken by the General Assembly, a number of other UN agencies have indirectly addressed several environmental concerns though they have been largely peripheral to wider socio-economic concerns. For example, the International Labour Organisation has addressed issues of occupational health. The Food and Agriculture Organisation (FAO) has been involved in issues related to the soil, land and forest management. UNESCO has also addressed natural resource concerns whereas UNDP too has a significant environmental mandate.

The beginning of environmental action by the UN itself (not other autonomous agencies) started in 1947 when ECOSOC passed a resolution to convene a UN Conference on the Conservation and Utilisation of Resources (UNCCUR) which took place in 1949. This conference highlighted the need for the conservation of natural resources. But it was essentially a conference to exchange ideas and had no mandate to make recommendations. In 1954, the General Assembly convened another

conference on the Conservation of the Living Resources of the Sea which led to the 1958 Geneva Convention. A number of other treaties emerged as a result of these UN conferences though not all were under the auspices of the UN. These included the 1958 High Seas Fishing and Conservation Convention, the 1971 Ramsar Convention on Wetlands, the 1968 African Nature Convention and the 1972 Oslo Dumping Convention on hazardous substances.

Such initiatives were very fragmentary in nature. In 1968, Sweden had tabled a resolution within the Economic and Social Council calling for a comprehensive look at the prior initiatives around the environment and an examination of how global environmental problems could be solved by international cooperation through the UN. The Secretary General was requested to prepare a report which highlighted the work of various UN organisations and programmes relevant to the human environment.

UNCHE

The Swedish initiative led to a recognition that human environment had to be put onto the agenda of the UN in a more comprehensive way. A preparatory committee (PC) was established with an aim to identify urgent environmental problems and priorities for international action. The Committee prepared a *Report on the State of Human Environment* and governments were asked to prepare national reports with regard to their experience in confronting environmental problems.

The foci were management of human settlements in terms of environmental quality, management of natural resources, control of pollutants, international institutional implications and the economic, financial, social and educational aspects of environmental issues.

The 1972 UN Conference on the Human Environment (UNCHE) for the first time brought the developed and the developing countries together to map out a common future with regard to the protection of the environment. Representatives of 113 member countries of the UN members from the UN bodies, GATT and the IAEA attended the conference. The broad agreement which emerged from the meeting came in the form of:

1. A Declaration on the human environment highlighting a collective commitment to govern the environment,
2. An Action Plan of 109 recommendations calling on governments, UN agencies and international organisations to cooperate in taking specific action in the area of human settlements, natural resource management and pollution control, and
3. The need for continued UN institutional commitment in the area of environment with the necessary financial arrangements.

The **UNEP** was created to act as a focal point for environmental action and coordination and was to be headed by an Executive Director to be elected by the General Assembly. The UNEP was to have its own assembly elected every three years and was to be responsible to the General Assembly through the Economic and the Social Council. In addition to the UNEP, a voluntary environment fund was to be established based on energy consumption of the nations to help finance various programmes. Finally, an Environmental Coordination Board (ECB) was to be formed as an inter-secretariat body and was to meet under the chairmanship of the UNEP Executive Director.

The UNCHE put forth a number of recommendations in the form of an Action Plan for the Human Environment. One of the important programmes included the Global Assessment Programme to monitor pollution and curtail the release of dangerous pollutants into the atmosphere. Other initiatives aimed at natural resource management, protection of the world's genetic resources, control of pollutants and toxic wastes etc. The Conference also called for a 10 year moratorium on commercial whaling and called for a draft convention to control mar ine pollution. In addition, the Conference looked into the issues of trade and environment urging countries not to

use the environment as a means to prevent free trade. This was to be a precursor to the debates within the World Trade Organisation (WTO). The Conference also led to the follow-up meetings to discuss vital 'environmental' questions with regard to food, housing, safe drinking water etc.

Despite the importance of the UNCHE, little headway was made in the 1970s with regard to global environmental concerns. One of the major reasons for this was that there was substantial disagreement amongst member states with regard to the recommendations and proposed action plans. Further, there was a lot of criticism that the recommendations made were not based on adequate data and good scientific analysis. All of this coupled with the fact that the Declaration put forward by the conference was not in anyway legally binding meant that little progress took place in the 1970s.

The UNEP has constituted six awards to those who make a significant and recognised contribution, regionally or beyond, to the protection and sustainable management of the Earth's environment and natural resources. Some of these are **UNEP Sasakawa Environment Prize**, **Global 500 Roll of Honour for Environmental Achievement, Ozone Awards, Volvo Environment Prize**, and **Zayed International Prize for the Environment.** One of the prominent recipients from India include Dr. M.S. Swaminathan, (Presently, the Chairman of the M.S.Swaminathan R esearch Foundation, in Chennai) has played a pivotal role in the conservation of biological diversity. As one of the world's leading agricultural scientists, he has played a catalytic role in his country's green revolution and in agricultural research and development. Dr. Swaminathan is widely known as the father of the economic ecology movement and his research on the conservation of wild relatives of the potato, wheat and rice led to India developing a strong national food security system.

Source: UNEP. *www.unep.org/*

WCED

In 1983, the UN General Assembly established the **World Commission on Environment and Development** (WCED). The Commission was an independent body outside the auspices of governments and the UN system but having crucial links with them. The Commission had three main mandates:

(1) to critically examine the environment and development issues with a view to dealing with them through realistic proposals of action,

(2) to suggest ways in which international cooperation could be fostered to deal with these issues, and

(3) to promote understanding and involvement of individuals, non-government organisations, institutes, governments etc. with regard to environmental issues.

The Brundtland Report (which was the output of WCED) was published in 1987. The report was important for a number of reasons. It explicitly (much more than in the past) highlighted the linkage between development and environmental degradation and spoke about sustainable development. It paid significant attention to the 'common future' of the North and the South and the need for collaborative work. It also spoke explicitly about inter-generational equity, i.e., the possible consequences of phenomena such as acid rain, global warming, ozone depletion, and desertification or biodiversity loss for future generations.

While the Brundtland Commission was pivotal in highlighting the need for North-South cooperation, the after effects brought out the difficulties involved in such cooperation. While the linkage between development and environmental destruction was becoming clear, the nation states were reluctant to cut back on their living standards in order to protect the global environment. As a non-legally binding document, the Brundtland Commission did not have much power behind it.

7.4 ROLE OF THE UN AGENCIES

As you have learnt in the previous unit, the UN Conference on Environment and Development (UNCED), popularly known as the Earth Summit, was held in 1992 in Rio de Janeiro, Brazil. The Conference was the culmination of a proc ess, started in 1989, of planning, negotiations and education of all member states of the UN. The primary aim of the Earth Summit (a result of the Brundtland Commission) was to support the socio-economic development and prevent the continued deterioration of the environment through cooperation between the developing and the developed countries. The Summit was a landmark in a number of ways: not only were a large number of countries represented by their officials, but a parallel conference of NGOs also took place ensuring that environment was firmly placed on the international agenda.

Fig.7.5: The UNCED, Rio de Janeiro, 1992

The Earth Summit went beyond the previous UN conferences in emphasising the need for international development initiatives to account for environmental impacts. It recognised the need for governments and business to pay greater attention to eco-efficiency in terms of patterns of production, the search for alternative sources of energy, the reduction of sources of pollution and the use of scarce water resources.

Earth Summit Agreements

The Rio Conference resulted in three broad agreements aimed at moving nation states towards sustainable development practices. These were Agenda 21, the Rio Declaration on Environment and Development, and the Statement of Forest Principles. Agenda 21 was the successor of *Our Common Future* (Brundtland Commission) aimed at promoting sustainable development and cooperative North-South environmental management. Agenda 21's 40 chapters addressed varied topics such as toxic chemicals and radioactive waste, biodiversity conservation, sustainable agriculture, patterns of production and consumption, poverty etc. The document addressed not only questions related to environmental degradation but also political, economic and financial aspects of sustainable development.

The UN **Commission for Sustainable Development (CSD)** was established by the General Assembly in December, 1992, under the umbrella of ECOSOC, to follow up on Agenda 21. The CSD has its own small secretariat and an assembly of representatives. It was given two main tasks: to monitor and highlight national initiatives in pursuit of Agenda 21 and to follow-up on questions of financing Agenda 21 (a concern of the South especially) and the transfer of technology which would enable the South to adopt more sustainable development practices. The CSD was given general guidelines (13 guidelines) by which to monitor the implementation of

Agenda 21. It was to follow up how individual countries adopted policies to meet the goals of Agenda 21, institutional mechanisms adopted by various nations for sustainable development including the mechanisms by which NGOs could become more involved. The CSD was also to look at how the adoption of new sustainable practices affected developing countries, the capacity of countries to adopt such measures and the impact of sustainable practices on trade policies.

The **Rio Declaration** on Environment and Development was a supportive agreement to Agenda 21. The Rio Declaration defined the rights and responsibilities of States vis-à-vis the goals of Agenda 21 and urged swift international action even if a certain amount of scientific uncertainty existed (precautionary principle) so as to avoid irreversible environmental damage. The Declaration highlighted the importance of sustainable development practices within states, the need for developed countries to take responsibility in pursuing sustainable development given the pressure they place on the global environment and the need to eradicate poverty in order to achieve sustainable development. The need of participation of women in sustainable development was also highlighted.

The third agreement was the "Statement on Forest Principles" which addressed the issue of sustainable forest management. This statement was a non-legal binding statement of principles which highlighted the need for countries to greening the world through reforestation and conservation, that countries should develop their forests within the context of national sustainable development principles and financial resources should be channelled into promoting economic and social substitutes to forest resources.

UN Conventions

Two high profile conventions also emerged from the Rio Summit, the UN Framework Convention on Climate Change and the Convention on Biological Diversity, both of which are legally binding for the signatories. The Convention on Biological Diversity had three main aims: to conserve biodiversity, to ensure the sustainable use of biodiversity and to share the benefits arising from the commercial and other utilisation of genetic resources in a fair and equitable way. The Convention recognised that biological diversity is 'a common concern for humankind' and set overall goals, policies and general obligations. However, it was left to the nation states to take steps towards conserving biodiversity. Some countries like the United States are still to ratify the convention because of concerns related to intellectual property rights and thus the impact of the treaty has been diluted to some extent (see module on conventions).

The Convention on Climate Change like the Convention on Biological Diversity is binding for its signatories. The Convention was aimed at countries committing themselves to reduce pollutants which would cause climate change (see module on conventions). Like the Convention on Biodiversity, it has not been ratified and followed up by a number of countries unwilling to cut back on their standard of living.

World Summit on Sustainable Development (Johannesburg Summit)

The Johannesburg Summit was authorised by the United Nations General Assembly and took place in 2002. The Johannesburg Summit was recognition that progress in implementing sustainable development had been extremely slow and disappointing since the 1992 Earth Summit. At Johannesburg, delegates affirmed the need for more action and results. There was also much greater dialogue than at Rio between governments, civil society and the private sector.

Unlike at Rio, there were no major agreements and treaties. There were also no grand solutions to solving the problems of environmental degradation and poverty. But new targets were set such as: halving the proportion of people without access to basic sanitation by 2015, using and producing chemicals by 2020 in ways that do not lead to adverse effects on human health and environment, maintaining or restoring fish stocks

so that sustainable yields can be produced on an urgent basis by 2015 and reducing the loss of biodiversity significantly by 2010. Commitments were also made with regard to energy, improving agricultural yields and improving ecosystem management. Of course, there were many who felt that Johannesburg did not go far enough, especially in terms of commitments for moving towards non-polluting and renewable energy sources.

SAQ 2

a) Spell out the environmental agenda of the United Nations and the role of various UN agencies in carrying out the activities set in the agenda.

b) In your opinion, is the UN an effective organisation for global environmental action? Justify your answer with facts and evidences.

7.5 OBSTACLES FOR AN EFFECTIVE UN ROLE

Despite significant UN initiatives in the area of global environmental policy, there is not much clarity and coordination in terms of overall efforts at moving towards sustainable development. Part of the problem has been that the current global ecological order is complex and often, different actors are at loggerheads with each other. Although the UNEP was formed in 1972 to serve as the global environmental institution, it has been unable to take the lead.

This is because there are a number of other institutions and forums within the UN (such as CSD) which compete with it. In fact, after the Rio Conference, the CSD assumed a much more important role than UNEP. In financial terms, the UNEP is relatively under-funded. In addition to other institutions and forums, there are also secretariats linked to various multilateral environmental conventions, institutions such as the Global Environmental Facility, the multilateral fund for the implementation of the Montreal Protocol which is in charge of financing and other UN and autonomous bodies such as the UNDP and World Bank which have large global environmental programmes.

These competing environmental voices have at times resulted in different bodies competing for turf. The CSD, for example, claims that while UNEP is only interested in the environment, it is concerned with both environment and development. Another example of this was the GEF objecting to UNEP playing a greater role in shaping GEF's priorities. The UNDP and the World Bank have much larger budgets than UNEP. Though initiatives have been taken to give UNEP a higher profile, this has not happened because other agencies (for example, CSD) have been unhappy with it.

North-South Divide

A significant North-South divide exists, which hampers major progress on international environmental issues within a broad UN framework. Not only are there vast differences in the positions taken by the countries of the North and South, but also little change has taken place in terms of individual country positions. One major source of contention is with regard to sustainable development in general. The G77 countries argue that sustainable development must include concern for sustained economic growth. The G7 countries do not equate sustained economic growth with sustainable development.

There are also huge differences with regard to individual conventions/treaties. Examples of this include the Kyoto Protocol and the Convention on Biodiversity both of which the US is reluctant to ratify. The lack of attention given to the Convention to Combat Desertification is another case in point. The fact that these conventions are only legally binding for those who are signatories means that countries can opt out if they so choose.

North-South Divide: The most critical challenge facing the developing world is how to bridge the huge gap between the North and the South in the production and utilisation of scientific and technological knowledge. Measured in terms of publications, the science-rich North, representing 20% of humanity, contributes more than 90% of the world's share of current scientific knowledge; meanwhile, the science-poor South, representing 80% of humanity, generates less than 10% of this knowledge.

In terms of technological output, measured by patents, the inequality is much greater. The South's 1995 share of patents, held by the two largest and most international patent systems in the USA and Europe, amounted to less than 1% of the world's total. While the North is ahead with its huge investments in research and development (R&D), the developing countries are spending small proportions of their gross domestic product (GDP) often less than 1 percent, on R&D.

The world's total R&D expenditure in 1994 was about US$470 billion; only 10% of that amount was attributed to the South. Huge investments in scientific research and knowledge in the past 30 years have been the driving force behind the considerable wealth and high living standards now being enjoyed by the North. In 1995, the income share of the richest 20% of humanity was 86% of the world's total. For example, the richest 20% of humanity's ratio of income compared to that of the poorest 20% of humanity rose from 30:1 in 1960, to 61:1 in 1991, to 82:1 in 1995.

Source: *http://wmy2000.math.jussieu.fr/9_2000_Feb-_KOREA.htm*

UN and Bretton Woods Institutions

The role and authority of the UN bodies has been increasingly challenged by Bretton Woods institutions such as the World Bank (though broadly speaking the Bank is also a specialised body of the UN). Unlike the UN which operates on the principle of one country one vote, the Bank operates under the principle of one dollar one vote.

Over the years, as the UN programmes have experienced budgetary cuts, the Bank has increased its environmental profile significantly. At the same time, the US has been withholding its financial contributions to the UN, maintaining that there is a need for structural reform within the UN. Developing countries have highlighted this unequal relationship between the UN and the World Bank.

The Southern countries are increasingly insisting that the reform of the UN (see next section) should be accompanied by the reform of Bretton Woods institutions as well, giving the developing countries a greater role. At present, however, the limited influence of the UN is being further undermined.

WTO

International trade has also had considerable impact on the effectiveness of international environmental initiatives. The developing countries, in particular, have expressed concerns that trade should not be restricted because of global environmental governance.

In the age of globalisation, the concerns of developing countries are overlapping with those of free trade proponents. For example, the US's decision to ban tuna imports from countries where dolphins were being killed in the process of catching tuna fish was deemed to be illegal under the GATT system. With the advent of WTO, it is likely that economic considerations will continue to dampen the effectiveness of environmental treaties. For this reason, some countries are calling for the establishment of a **World Environment Organisation** (WEO).

SAQ 3

List the obstacles to an effective UN role in environmental management.

"Most developing countries are against a comprehensive agenda because of their bitter experience of the Uruguay Round in which they were made to surrender a big chunk of their domestic policy options in the non trade-related areas of TRIPS & TRIMS in lieu of the marginal gains in the trade-related areas of textiles, industrial tariffs, agriculture and services. They know that they will have very little to gain and much to lose if they are compelled to negotiate on the establishment of new regimes within WTO, for investment, competition policy and environment. Thus, they are extremely wary of entering into trade negotiations as a single undertaking embracing both trade-related and non-trade-related issues, and in which the outcome is presented on an all or nothing alternative, and on a take-it-or-leave-it basis. A vast majority of them are uncompromisingly against linking trade with labour or environmental standards. For they know that these are blatant neo-protectionist devices under the garb of concern for the protection of labour rights and the environment in developing countries. These are designed to extinguish the comparative cost advantage of developing countries in a whole range of their competitive products. This cannot but seriously undermine their export and hence growth prospects for all time to come."

Source: Muchkund Dubey, **New WTO Round and India**, *The Hindu*, 9 August, 2001.

7.6 FUTURE ROLE OF THE UN

A number of concerns have intermittently arisen over the years for clearly redefining the role of the UN with regard to various global environmental management and specific agencies within the UN. Calls for reform have come from different circles with regard to the following concerns: defining the role of the UNEP more clearly, restructuring the UN itself and creating a World Environment Organisation (WEO). It is important to take note of some of these initiatives.

Restructuring the UN

Debates around the restructuring of the UN have been taking place for a long time now. The Pronk-Iglesias report in the early 1990s suggested the restructuring of ECOSOC to give environment a higher profile through CSD and the establishment of high-level Advisory Board on Sustainable Development which would report to the Secretary-General. While an Advisory Board was established, it was non-functional and was finally disbanded in 1997. Attempts were also made at reforming the UNEP so as to make it more prominent in terms of setting global environmental priorities. This too, however, did not materialise effectively.

Fig.7.6: Kofi Annan

The UNDP's role became more prominent with its *Agenda for Development. The Agenda for Development* was an attempt to get the World Bank and the IMF to have stronger developmental policy inputs. The report had suggested the restructuring of ECOSOC into the Economic and Security Council. This agenda too did not materialise because of differences with regard to the questions of sustainable development, i.e. the developing countries wanted the focus to be on economic growth.

A number of other initiatives at reforming the UN have taken place. The 'Quiet Revolution' of reforms initiated by Kofi Annan, the Secretary General of UN at present, recommended the establishment of four executive groups:

- A peace and security group,
- A humanitarian affairs group (including the World Food Programme),
- An economic and social group (including UNCTAD, UNEP and CSD) and
- A development group (including UNICEF and UNFPA).

While these broad reforms took place, there are still huge differences between the developing and the developed countries. The United States, in particular, has been eager to link the UN closely to Bretton Woods institutions in the context of open

economies, a thriving private sector and more emphasis on good governance and human rights (as defined by them) whereas developing countries would prefer to see the UN role strengthened in the Bretton Woods institutions and more emphasis on sustained economic growth. The reform of the Security Council has also been an important concern of developing countries.

World Environment Organisation

Another area of proposed reform has been the establishment of a World Environment Organisation. Some countries such as France and environmental NGOs have tabled the idea of a WEO to work alongside the WTO. The idea of a WEO has emerged in the context of increased international trade and the fear that the environment will be the loser. The developing countries fear that such an organisation will result in the institutionalisation of global environmental governance which will restrict trade from the developing countries and consequently their efforts at development. Efforts at creating such an organisation have not materialised so far.

During the 2001 Jakarta Meeting, the G-15 called on the developed countries to address the concerns of the developing countries. "Industrialised countries have not fulfilled their commitments to provide the necessary assistance, including new and additional financial resources, technical expertise and the transfer of environmentally friendly technology on favourable terms to developing countries. These factors are crucial to the implementation of national policies and multilateral environmental agreements as well as the improvement of the competitiveness of environmentally friendly goods and services of developing countries".

Source: *http://www.hinduonnet.com/thehindu/2001/06/01/stories/0201000d.htm*

7.7 BRETTON WOODS INSTITUTIONS

The Bretton Woods institutions which were created after the World War II originally aimed at reconstructing Europe, and later, have become major financers of development projects in the Third World. Organisations such as the World Bank have also developed huge environmental portfolios. In fact, today the World Bank spends more on the environment than on any other international organisation. At the same time, the Bretton Woods institutions are accused of not alleviating but aggravating poverty and causing massive environmental destruction. This section looks at the role of the Bretton Woods institution (mostly the World Bank) in the context of environmental issues.

Bretton Woods Institutions

In 1944, in Bretton Woods, New Hampshire, USA, three organisations were proposed to be created to form the foundation of the new, post-World War II, economic order. The three organisations were the World Bank, the International Monetary Fund (IMF) (collectively known as the Bretton Woods institutions) and the International Trade Organisation. The first two were set up but the third aroused a considerable controversy (see trade and environment discussion in Unit 2).

The World Bank and the IMF are considered to be independent, specialised agencies of the United Nations and are also member observers in several UN bodies. But unlike the UN institutions which function on the basis of equality of nation-states, the Bretton Woods institutions wield power to those who contribute more. While, the UN is based on the principle of one nation-one vote, the Bretton Woods institutions are based on the principle of one dollar-one vote.

World Bank

The World Bank was originally created to finance the reconstruction of the war-torn Europe. However, over the years, it has become the primary financier of the Third World development projects. The role of the Bank, however, was not uncontested. A 1951 report of a group of experts entitled 'Measures for the Economic Development

of Underdeveloped Countries' in fact recommended the establishment of a Special UN Fund for Economic Development (UNFED) which would give grants to the developing countries. The North opposed this proposal and came out with an alternative, namely an institution which would give soft loans based on capital subscribed from Northern countries – later to be known as the International Development Association (IDA).

The World Bank encompasses both the International Bank for Reconstruction and Development (IBRD) and the International Development Association (IDA). The former was established in 1945 following the Bretton Woods Conference and mainly provides development assistance and loans to middle income countries and creditworthy low income countries. The IBRD raises finance on the international capital markets. Only about 5 percent of its funds come from the member countries. The IDA was established in 1960 and is more concerned with poverty reduction. It receives significant contributions from member countries (especially wealthy countries). The IDA, unlike IBRD, provides interest free loans (on paper) to countries who cannot afford commercial rates. Loans can be paid back in 35 – 40 years with a ten year grace period.

The World Bank is the largest multinational lending and technical agency for the Third World Development. Its mandate includes consolidating loans for large scale development projects, as well as providing structural adjustment loans for countries that have balance of payment problems. In the 1970s, with McNamara at its helm, the World Bank's resources increased manifold from $2.7 billion a year in 1968 to $8.7 billion a year in 1978. Besides an increase in funds, there was a greater focus on poverty reduction.

The World Bank Group also includes the International Finance Corporation (IFC), the Multilateral Investment Guarantee Agency (MIGA) and the International Centre for Settlement of Investment Disputes (ICSID). While the IFC was established in 1956 to promote private sector development in the developing world through technical assistance, MIGA (formed in 1988) was formed to stand guarantor to foreign investors for developing countries. ICSID was established in 1966 to deal with the investment disputes between forest investors and their host country.

International Monetary Fund (IMF)

The IMF has also had a chequered history. Originally, it was conceived of as a guardian institution of global liquidity, a function that it was to pursue through the maintenance of stable exchange rates. However, in the 1970s when the US President Nixon inaugurated a new era of floated exchange rates, the IMF became redundant. Its focus changed therefore. The IMF today has three main objectives:

1. to promote international monetary cooperation,
2. to facilitate the expansion of international trade, and
3. to promote exchange rate stability.

To meet these objectives, the IMF advises member countries on economic policies and provides conditional assistance to the countries that are experiencing balance of payments problems.

The IMF is most famous for its **Structural Adjustment Programmes** (SAPs). Structural adjustment refers to free market economic policy reforms imposed on the developing countries as a condition for receiving loans. SAPs aim to improve a country's foreign investment climate through the promotion of exports and reduce government deficits through cuts in public expenditure. The stated logic of SAPs is that they will help boost the economies of the developing countries to economies, recover and grow. Economic growth is seen in terms of private sector foreign investment which will eventually percolate down to the poor.

SAPs have been heavily criticised for a number of reasons. SAPs, critics argue, impose harsh economic measures on countries which deepen poverty, undermine food security and result in unsustainable environmental and social development. These consequences are seen to be a result of a shift away from food crops and an emphasis on cash crops, the abolition of food and agricultural subsidies (to reduce government expenditure), cuts in social programmes in the areas of health, education and housing, currency devaluation which increases import costs, liberalisation of trade and investment and privatisation.

World Bank's Environmental Agenda

Although the environment is not an explicit part of the World Bank's agenda, it has taken aboard environmental concerns over the last few years. Not only has the Bank spent a lot of money on the environment and brought aboard over 300 specialists, but also it has put together broad environmental objectives. These objectives are:

1. addressing potentially adverse environmental impacts of World Bank financed activities,
2. assisting member countries promote environmental protection,
3. helping member countries to set and implement sound environmental programmes, and
4. promoting global environmental participation through the Global Environment Facility (GEF).

These aims have been pursued in a number of ways. The Bank has Operational Policies, Bank Procedures and Good Practices all of which are aimed at addressing environmental and social concerns. In 1984, the Bank consolidated its environmental focus into an Operational Manual Statement. The most important feature of this statement is the requirement of an **environmental assessment** (EA).

The World Bank makes it mandatory for borrowers to perform an EA for projects which could have adverse environmental impacts according to the nature of the project. The EA is meant to ensure that development is 'environmentally sound and sustainable' in terms of natural environment, human health and safety issues, social aspects such as cultural property, involuntary resettlement and trans-boundary and global environmental aspects. The EA should include an assessment of the project's potential negative and positive environmental impacts and viable alternatives. It should also make recommendations as to how environmental impacts can be minimised.

The Word Bank has also put in place a number of other measures aimed at environmental protection. It has policy on public information which aims to make available relevant document about its development projects to the public. As part of the EA, borrowers are made to consult the project-affected people. The Bank also maintains a list of international treaties and applicable laws so as to ensure that its projects do not conflict with any international environmental agreements. Finally, an independent Inspection Panel was set up in 1993 to address the concerns of private citizens who feel that their interests have been harmed by a World Bank Project.

Assessing the Bretton Woods Institutions

The record of the World Bank and the IMF in poverty alleviation and environmental protection has been poor. In February 2000, the International Financial Institution Advisory Commission said the Bank was irrelevant to solving the problem of poverty. Even within the Bank, there is an acknowledgement that the Bank's primary mission of poverty alleviation has not been very successful. Some critics have gone much further and argued that the World Bank has functioned mainly as an export financing facility for Northern corporations and that Southern countries have in fact benefited

little. Criticism of the IMF is even more severe. SAPs, some argue, have resulted in the exacerbation of economic crises in the countries of Africa and Latin America and a vicious cycle of debt.

On the environmental front, things are no better. A recent World Bank review of its own projects (Wapenhans Report) highlighted the significant deterioration of the overall quality of project lending. Another internal report on the IDA funded Sardar Sarovar project pointed out that the Bank failed to live up to its own internal guidelines. Many have accused the Bank as responsible for displacement and environmental destruction.

Several people's groups and non-governmental organisations have demanded a moratorium on World Bank funding in the country citing the "enormous and severe" dispossession and displacement brought about by the "destructive" projects funded by it. A delegation that met World Bank officials, sought the withdrawal of funding from strategic sectors such as power and water and also an eventual withdrawal of the Bank from the country. They have held the World Bank responsible for financing and pushing the Sardar Sarovar Dam project. Since the affected people had not been resettled, they continued to live on the edges of the reservoir now swollen with silt. As a result, there had been a large number of deaths in the Narmada valley. Thousands were yet to receive land and other benefits due to them. Many of those who got pieces of land found that they were smaller than promised or bad.

It was pointed out that the World Bank had not taken any lessons from the human rights disaster that they funded in the Narmada valley and continued to have a presence there — either directly or indirectly. The World Bank was also considering funding the National Hydro Power Corporation (NHPC), which was building the Omkareshwar and Narmada Sagar dams, but without any plans to rehabilitate the affected population or provide it alternative land.

Source: *http://www.thehindu.com/2004/04/30/stories/2004043000441700.htm*

Challenges to Bretton Woods

In the 1970s, some Southern countries challenged the omnipotence of the global economic order dominated by the Bank. With the rise of OPEC, World Bank aid became less crucial as banks were much more willing to give loans from the billion dollar deposits of OPEC.

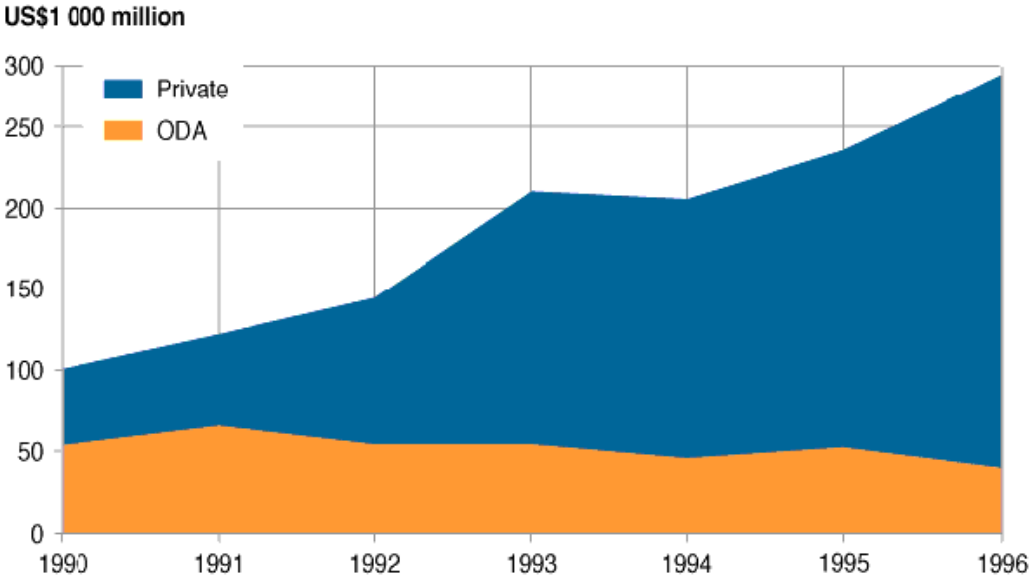

Fig.7.7: Resource flows to developing countries (**Source**: www.grida.no/geo2000)

As you can see from Fig.7.7, private foreign investment, was about US$250 000 million, compared to overseas development assistance (ODA) of less than US$50 000

million. These figures demonstrate the overriding importance of the private sector in the world's economy and, consequently, in environmental issues.

The emergence of the Non-Aligned Movement, G77 and especially the UNCTAD also challenged the status quo. The UNCTAD argued for a global reform strategy which included a call for commodity price stabilisation, a scheme of preferential tariffs and expansion and acceleration of foreign assistance. The UN General Assembly Special Session in 1974 called for a new international economic order. Most of these efforts, however, did not result in any real reform.

We now summarise what you have studied so far.

7.8 SUMMARY

- This unit looked at the genesis of the United Nations and the role of the UN Agencies in terms of environmental governance, both of UN bodies and Conventions and their role before and after Rio.
- The unit also gives an idea as to how international agencies function and how the functioning is plagued by conflicting agendas of nation states as well as inter-organisational disputes.

7.9 TERMINAL QUESTIONS

1. Write a detailed note on the main organs of UN and their functioning.
2. What are the different agencies working towards the preservation of global environment?
3. Critically examine the obstacles for an effective functioning of the UN and its future role as a World Environmental Organisation.
4. What are the challenges faced by the Bretton Woods Institutions in environmental protection?

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UNIT 8 ENVIRONMENT IN MULTILATERAL PERSPECTIVE

Structure

8.1 Introduction
Objectives
8.2 Environmental Standards and International Trade
8.3 Trade-Environment Trade off – Policy Initiatives
WTO and Environment
Work Programme of the Committee on Trade and Environment (CTE)
The Role of the World Bank
8.4 Multilateral Agreements
8.5 Summary
8.6 Terminal Questions

8.1 INTRODUCTION

In the previous unit you have studied about the role of UN agencies in environmental governance. In this unit you will learn about the role of multilateral agencies like the World Bank and the World Trade Organisation in the maintenance of environmental standards in our quest for a better quality of life.

Trade liberalisation is being pursued vigorously by many countries across the world as part of the globalisation strategy to accelerate growth through market expansion and improved competitiveness. The implication of this global increase in economic activity on global environment has been debated extensively by economists, environmentalists and policy makers. The World Bank, in its 1992 World Development Report on environment, raised the following three important questions in this regard: What are the environmental effects of trade liberalisation? Should trade policies be used to influence environmental standards of other countries? Should trade policies be used to enforce or implement international environmental agreements?

An attempt is made in this unit to address these questions. The trade-environment inter-linkage is analysed first before discussing an appropriate trade policy in the context of increasing openness under globalisation. The role of multilateral agencies, particularly the World Bank and the World Trade Organisation in resolving the environmental concerns is also analysed.

Objectives

After studying this unit, you should be able to:

- explain the environmental concerns in the multilateral perspective;
- discuss the efforts of the global community in addressing these issues; and
- highlight some important multilateral initiatives.

8.2 ENVIRONMENTAL STANDARDS AND INTERNATIONAL TRADE

The relationship between the environment and international trade has become a matter of concern to both economists and environmentalists. Economists are basically interested in analysing the influence of environmental factors on the pattern of international division of labour and the gains from such specialisation. Environmentalists, on the other hand, are concerned about the impact of expanded market and output through international trade on the local and global environmental

conditions. In other words, the links between trade and environment are complex and also two-way; one affects and in turn gets affected by the other.

One effect is that trade can raise production volumes. This effect is always considered positive, as the amount of resources used to produce the same level of output will decline. However, if international trade induces a change in the composition of output, it is possible that the polluting industries, even when large-scale operations are realised, may increase and clean industries contract, nullifying the benefits of scale effects. International trade may also permit greater access to more advanced and cleaner technology. The net effect, therefore, depends on the change in the output mix and technology used with trade induced growth.

Environmental regulation is likely to change the pattern of international trade and the location of 'dirty industries'. One hypothesis is that pollution intensive industries take flight to countries with liberal environmental standards. Also, when environment is treated as a factor of production like capital and labour, environmental abundance will encourage the countries to specialise in pollution intensive industries. However, the evidence on the specific linkages between environmental regulation and international trade is mixed. While some studies analysing selected pollution intensive industries in 23 developing countries could conclude that environmental regulations have resulted in a change in the trade pattern, other studies taking the case studies of North American Free Trade Area (NAFTA) could not find any evidence to that effect. A third group of studies, using gravity models could not establish any relationship between the differences in environmental standards and changes in bilateral trade between developed and developing countries.

Notwithstanding the inconclusive evidence on the linkages between trade and environment, it is generally held that there is a direct effect as production and consumption of traded goods use and damage the environment. These externalities are considered important and relevant as the countries carry on trade with other countries in the form of imports or exports. A dilemma is that as trade is otherwise welfare-improving, the attitude of the new world is to encourage more and more free trade through globalisation and liberalisation under the WTO framework. Since most national or trans-national industries have been expanding their international markets, a concern about the size of the actual and potential damages to environment, consequent to this expansion, is being articulated by many analysts.

A simple hypothetical example could be used to highlight the essential nature of the trade-environment trade-off and its global dimensions. Consider a human settlement surrounded by a common land including adequate source of timber and space for waste disposal. With population growth, increasing activities and exchanges, emissions, deforestation, and waste discharge will increase beyond the carrying capacity of the regions. The resource base therefore gets depleted. The activities of some individuals produce adverse effects on others through the environmental impact of these activities and exchanges. If individuals, in this example, are treated as nations in the world economy, it would be evidently clear as to how the activities of individual countries would erode the common resource base of the global economy and affect the environment.

Pure theory of international trade argues that trade is welfare improving for the world as a whole and also for individual countries. The theory, however, ignores the effects of trade on environment. There is evidence in support of the view that international movement of goods has been associated with significant adverse changes in the bounties of nature involving negative international externalities.

From the view point of the global economy, environmental consequences result from two interrelated aspects. Firstly, the adverse impact of economic activities in all countries, domestic or trade oriented, on the natural resource base of the global economy is a matter of concern for the whole world.

Fig.8.1: The dilemma before developing nations: How to strike a balance between economic activity and a clean environment? A case in point is that of the small-scale polluting industries in Delhi; factory owners and workers facing court-ordered shut-downs fight for survival (Source: image.pathfinder.com/.../ 0309/as.pollution.jpg)

Secondly, as a result of trade policies, there is an impact on the resource base in the form of accumulative negative externalities, either confined within or crossing territories. Issues of global concern associated with environmental degradation and those related to international trade essentially overlap. It is of extreme importance to the world population as these effects are not confined to a region or to any particular country producing the sources of degradation but are spread across borders and affect a significant proportion of the present and future population across the world.

You may like to reflect a bit more on this issue before you study further.

SAQ 1

Describe an instance from your own context, where economic compulsions were given precedence over the environmental concerns or vice-versa. Present your own analysis of the situation.

8.3 TRADE-ENVIRONMENT TRADE OFF – POLICY INITIATIVES

Against the background of what has been said on the linkages between trade and environment, it is necessary to ask a simple question, what policy tools and institutions are best suited to promote higher levels of environmental protection? One way of restricting access to a developing country market is the introduction of trade sanctions to support environmental protection. However, they may become counterproductive if environmental regulations restrict trade and growth. Also, sanctions penalise whole industries, the clean firms, as well as the polluters in an industry. Besides, many produce for the local market and therefore are not affected by sanctions. Finally, it is argued that domestic pollution and environmental protection can be effectively controlled through appropriate domestic measures like taxes.

Analysts consider the establishment of policy coordination among the participating countries to be a more productive approach than sanctions. This would allow for joint regulation of common watershed and air basin controls in areas of trans-border pollution and for development assistance to transfer clean technology and environmental aid to strengthen environmental protection overtime. Global environmental agreements such as the Montreal Protocol that bans certain ozone depleting chemicals and others, based on sound cost benefit analysis can raise environmental quality over a period of time.

Kym Anderson, analysing the theme "Environmental Standards and International Trade" at the 1996 World Bank Annual Conference on Development Economics arrived at two important points. First, as far as the domestic environmental problems are concerned, countries should be allowed to set their own standards as low income countries may choose lower air and water quality standards than high income countries to develop comparative advantage in pollution intensive industries. Differences in competitiveness that result from differences in domestic environmental standards, according to Anderson, are not a source of inefficiency and therefore do not call for a trade policy response.

Second, when a country's production or consumption decisions impose environmental externalities on other countries, there may be a theoretical case for using trade policy to correct these externalities. Many international environmental problems including acid rain, global warming, and bio-diversity destruction require multilateral cooperation to achieve a first best solution. But if the first best solution cannot be achieved, trade policy may produce a second best outcome. The threat of trade sanctions might provide an incentive for countries to abide by multilateral environmental agreements. Trade policy must be used with caution since, as a second best solution, it is likely to be an extremely blunt instrument for correcting the environmental externalities.

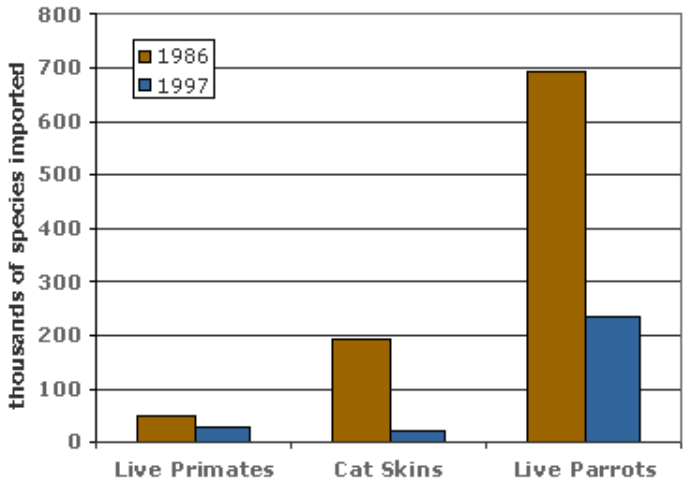

Fig.8.2: The ban on trade in products made from endangered species is an example of protecting the environment through trade regulation. Commercial trade in several species and animal products has dropped after popular action. For example, trade in animal skins came down after it became socially less acceptable in the US and Europe to wear furs; trade in live parrots dropped after the US banned its imports.
(**Source**: earthtrends.wri.org/)

However, environmentally motivated trade policies might improve welfare only under specific instances:

a) when domestic environmental standards do not reflect social preferences,
b) when nothing else is done to correct trans-boundary pollution problems,
c) when endangered species are being over harvested, and
d) when used as an enforcement mechanism for environmental agreements.

8.3.1 WTO and Environment

The World Trade Organisation (WTO) established on the1st January 1995, is the successor to the General Agreement on Tariffs and Trade (GATT) and the embodiment of the results of the Uruguay Round. As the legal and institutional foundation of the multilateral trading system, the WTO provides the principal contractual obligations that determine how governments frame and implement domestic trade legislation and regulations. The WTO provides the platform on which trade relations, among members, evolve through collective debate, negotiation and adjudication.

The WTO provisions include a number of references to the environment, such as the preamble to the Marrakesh Agreement, which notes the importance of "allowing for the optimal use of the world's resources in accordance with the objective of sustainable development, seeking both to protect and preserve the environment and to enhance the means for doing so in a manner consistent with their respective needs and concerns at different levels of economic development."

Specific references to the environment are included in the Agreements on subsidies and Countervailing Measures, Agriculture and Technical Barriers to trade and a number of other WTO provisions. The principal focus of the WTO's work on trade and environment is contained in the Uruguay Round Final Act, under which ministers adopted a decision on trade and environment that called for the establishment of the Committee on Trade and Environment (CTE) and outlined its work programme.

Green provisions

Examples of provisions in the WTO agreements dealing with environmental issues

Technical Barriers to Trade (i.e., product and industrial standards), and **Sanitary and Phyto-sanitary measures** (animal and plant health and hygiene): explicit recognition of environmental objectives.

Agriculture: environmental programmes exempt from cuts in subsidies.

Subsidies: allows subsidies, up to 20% of firms' costs, for adapting to new environmental laws.

Intellectual property: governments can refuse to issue patents that threaten human, animal or plant life or health, or risk serious damage to the environment (TRIPS Article 27).

GATS Article 14: policies affecting trade in services for protecting human, animal or plant life or health are exempt from normal GATS disciplines under certain conditions.

Source: *http:// www.wto.org/*

8.3.2 Work Programme of the Committee on Trade and Environment (CTE)

The CTE has an agenda of 10 items for discussion:

1. The relationship between trade rules and trade measures used for environmental purposes, including those in MEAs.
2. The relationship between trade rules and environmental policies with trade impacts.
3. a) The relationship between trade rules and environmental charges and taxes.
   b) The relationship between trade rules and environmental requirements for products, including packaging, labelling and recycling standards and regulations.

4. Trade rules on the transparency (that is, full and timely disclosure) of trade measures used for environmental purposes, and of environmental policies with trade impacts.
5. The relationship between the dispute settlement mechanisms of the WTO and those of MEAs.
6. The potential for environmental measures to impede access to markets for developing country exports, and the potential environmental benefits of removing trade restrictions and distortions.
7. The issue of the export of domestically prohibited goods.
8. The relationship between the environment and the TRIPS Agreement.
9. The relationship between the environment and trade in services.
10. WTO's relations with other organisations, both non-governmental and inter-governmental.

Environmental rules, according to the strong groups from developed countries, should not confine to simple pollution control or natural resource management standards. They need to provide the ground rules for international commerce and serve as an essential bulwark against market failure in the international economic system. Building environmental sensitivity into the trade regime in a thoughtful and systematic fashion should therefore be of interest to the trade community as well as environmental advocates. This certainly contradicts the interests of the Third World.

Trade liberalization certainly provides many opportunities for developing countries and is very important for countries like India. The gains from trade are not without costs, and the environment might suffer as the result of liberalized trade in several ways. Overall, trade liberalization is likely to produce not only negative environmental externalities, but also some environmental gains. The negative association does not imply that freer trade should be halted. It suggests that most cost-effective policies should be undertaken to optimise the externality. Thus the solution to the growing environmental challenge for countries like India clearly lies in developing a firm environmental framework and implementation capacity. Freer trade may give some accidental benefits to the environment, and also result in serious environmental consequences if environmental policy framework remains weak as it is now. Therefore environmental policy must be designed to minimise the environmental effects from the economic activity and not by restricting trade. A firm environmental policy may itself have positive international trade effects.

Eco Labelling: Labelling environmentally-friendly products is an important environmental policy instrument. For the WTO, the key point is that labelling requirements and practices should not discriminate — either between trading partners (**most-favoured nation treatment** should apply), or between domestically-produced goods or services and imports (**national treatment**). One area where the Trade and Environment Committee needs further discussion is how to handle — under the rules of the WTO Technical Barriers to Trade Agreement — labelling used to describe whether *the way a product is produced* (as distinct from the product itself) is environmentally-friendly.

Dispute Settlement: Suppose a trade dispute arises because a country has taken action on trade (for example, imposed a tax or restricted imports) under an environmental agreement outside the WTO and another country objects. Should the dispute be handled under the WTO or under the other agreement? The Trade and Environment Committee says that if a dispute arises over a trade action taken under an environmental agreement, and if both sides to the dispute have signed that agreement, then they should try to use the environmental agreement to settle the dispute. But if one side in the dispute has not signed the environment agreement, then the WTO would provide the only possible forum for settling the dispute. The preference for handling disputes under the environmental agreements does not mean that environmental issues would be ignored in WTO disputes. The WTO agreements allow panels examining a dispute to seek expert advice on environmental issues.

Source: *http://www.wto.org/*

8.3.3 The Role of the World Bank

The World Bank makes significant contributions to control industrial pollution on several counts. In the long run, the support for growth oriented policies will encourage strict pollution control by more prosperous societies. The World Bank has also realised that all economic reforms may not have clean impacts. Therefore, the Bank has revised its operational guidelines to ensure that Bank-Supported Reform Programmes incorporate environmental concerns. Successful implementation of these guidelines would need sustained efforts, coordination between the Bank's economists and environmental specialists, and active collaboration between the economic ministries and environmental agencies in the partner countries.

The World Bank has also financed decentralised environmental information systems that support the new regulatory model with an emphasis on scale. This comprehensive approach, which could be encouraged by the World Bank's preference for Big Loans, can easily distract regulations from confronting their communities' most critical pollution problems. The World Bank also provides direct finance for pollution control as the Bank has realised that subsidizing abatement investments by large individual polluters is seldom the best way to control air and water emissions.

So far you have learnt about various aspects of the trade-environment trade-off and the role of trade regulatory bodies in encouraging environment-friendly trade practices. In the next section we will discuss the multilateral agreements. You may like to concretise the ideas presented so far.

SAQ 2

Consider a World Bank funded project in your country. Analyse the role played by the World Bank in maintaining environmental standards in that project.

8.4 MULTILATERAL AGREEMENTS

International agreements on environmental issues may take two forms – bilateral and multilateral. When only two countries are signatories in an agreement, it is termed a bilateral agreement. If it involves many countries as signatories it is called a multilateral arrangement. The figure below shows the growth in the number of countries signing these agreements.

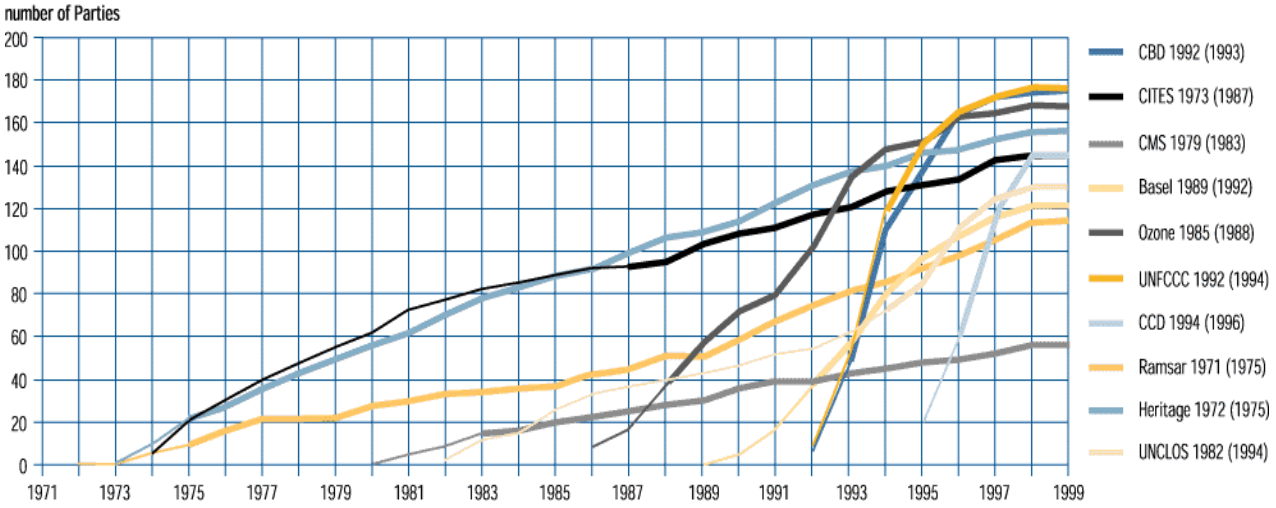

Fig.8.3: Growth in numbers of parties to selected MEAs

We also provide a representative list of multilateral environmental agreements.

Some Important Multilateral Initiatives

Trans-national Air Pollution	Signed	Enforced
Convention on Long-range Trans-boundary Air Pollution (CLTAP)	1979	1983
Protocol to CLTAP on European Programme of Cooperative Financing of Monitoring (EMEP)	1984	1988
Protocol to CLTAP on Sulphur Emissions by at least 30 per-cent	1985	1987
Protocol to CLTAP on nitrogen oxides	1988	—
Vienna Convention for the protection of the ozone layer	1985	1988
Montreal protocol on ozone layer depleting substances	1987	1989
Kyoto protocol	1997	—
International Convention for the prevention of pollution of the sea by oil	1954	1958
Agreement for cooperation on controlling pollution of the North Sea by oil	1969	1969
International Convention on civil liability for oil pollution damage	1969	1975
International Convention for intervention on the high seas in cases of oil pollution causalities	1969	1975
International Convention on prevention of dumping of wastes and other matter	1972	1975
International Convention on prevention of pollution from ships	1973	—
International Convention on prevention of marine pollution from land-based sources	1974	1978
International Convention on protection of the Mediterranean Sea against pollution	1976	1978
Protocol on the constitution of an International Commission for the protection of the Moselle against pollution	1961	1962
Agreement on International Commission for the protection of the Rhine against pollution	1963	1965
Convention on the protection of the Rhine against chemical pollution	1976	1979

Convention creating the Niger basin authority and Protocol relating to the development fund of the Niger basin	1980	1982
Biodiversity		
European treaty on the conservation of birds useful to agriculture	1902	1902
Convention on nature protection and wildlife preservation in the Western Hemisphere	1940	1942
International Convention on regulation of whaling	1946	1948
International Convention on wetlands of international importance especially as waterfowl habitat	1971	1975
International Convention on international trade in endangered 1982 species of wild fauna and flora	1973	1975
Others		
United Nations Convention on the law of the sea	1982	—
Basel Convention on the control of the trans-boundary movement of hazardous wastes and their disposal	1989	—

Source: Field, B, (1997) Environmental Economics, Tata-Mcgraw Hill, New Delhi.

Let us now summarise what you have studied so far.

8.5 SUMMARY

- It is generally accepted that trade liberalisation does not have to resort to conflict with sustainable development provided certain measures are taken at the national and international levels. There is no denying the fact that there are both costs and benefits from trade liberalisation and trade expansion.
- From an environmental perspective, trade liberalisation can have a negative or a positive effect on the environment. But most experts feel that, in general, the direct effects of trade on the environment are limited, as only a small share of environmentally sensitive goods enter into trade and also because trade is only one of the many factors affecting the environment.
- The best way to correct externalities is by implementing the popular "polluter-pays principle (PPP)", not restricting the level of trade. Where PPP is not feasible (because exporter is a poor country), cooperative policies or assistance in cleaning up activities are preferable compared to adopting trade restrictions.
- There is a need to review both international trade and global environmental laws and agreements in the interests of both developing countries and advanced countries. However, the interests of the developing countries need to be protected by giving their basic concerns of development, a top priority on the agenda.

8.6 TERMINAL QUESTIONS

1. Explain the inter-linkages between trade and environment.
2. How does multilateralism affect environment?

3. Examine the role of multilateral agencies like WTO and World Bank in protecting the global environment.
4. Discuss the multilateral initiatives to control environment.

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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).

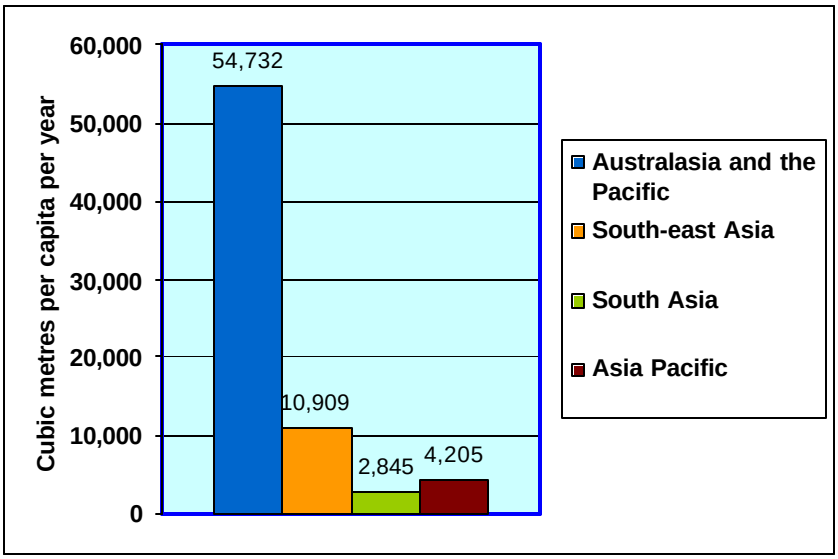


Fig.9.1: Renewable fresh water resources (**Source**: data compiled by UNEP GRID Geneva from WRI, UNEP, UNDP and WB 1998)

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.

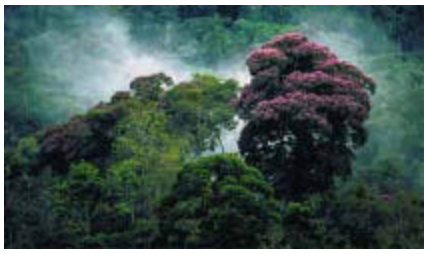
The Centre for Environmental and Geographic Information Services (CEGIS) is an organisation for integrated environmental analysis using geographic information system and remote sensing, information technology and databases. Its activities are inter-disciplinary that address sectors such as water resources,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

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UNIT 10 NON-GOVERNMENTAL AGENCIES INITIATIVES

Structure

10.1 Introduction
Objectives
10.2 Origin, Structure and Ideology of NGOs
Understanding the Origin of NGOs
Structure of NGOs
Perspectives on NGOs
10.3 NGOs and MNC Links
The New Trade Regime, MNCs, NGOs and Development
The New NGOs
NGOs and MNCs
10.4 NGOs versus Socio-Political Movements
10.5 Alternative NGOs
10.6 Summary
10.7 Terminal Questions

10.1 INTRODUCTION

In Block 2 of this course, you have learnt about the role of various summits and agreements in maintaining the quality of environment for better living humankind. In the present unit of Block 3, we shall discuss the initiatives taken by non-governmental agencies in the upkeep of the human environment. With the emergence of MNCs and TNCs as powerful players in global markets, the role of sovereign governments has almost been reduced to that of maintaining law and order. This has resulted in the emergence of a "third economy" based on local community organisations rooted in "civil society". These organisations known as Non Governmental Associations or Non Governmental Organisations are seen as either anti-systemic struggle groups or project implementation agencies or constituents of new paradigm of developments.

Many argue that there is a hidden agenda for the NGOs and they act as World Bank's agents for cooperation regarding development. Some of the NGOs are neither non governmental in their funding sources nor in their local collaborative activities. It is reported that there are about 50 thousand self styled NGOs in the Third World countries receiving more than $10 billion from diverse sources. Many NGOs have become powerful actors in political and social arenas influencing the public opinion at local levels. The NGO structures are often criticized as internally elitist and externally servile and foster new type of cultural and economic colonialism often "selling" projects to local communities. All this may not be entirely true but is not entirely far from the reality either. This unit examines some of the basic issues related to the NGO's links with the MNCs and TNCs and their juxtaposition in relation with other socio-political movements.

Objectives

After studying this unit, you should be able to:

- describe the origin, structure and ideology of NGOs;
- explain the relation between NGOs and MNCs;
- analyse the interrelationship of NGOs and Socio-Political Movements; and
- present your perspective on Alternative NGOs.

10.2 ORIGIN, STRUCTURE AND IDEOLOGY OF NGOs

Let us begin by understanding what an NGO is. A standard definition of NGOs acceptable to a large section of academicians and practitioners is the one given by the World Bank. The World Bank defines NGOs as **groups and institutions that are entirely or largely independent of government and characterised by humanitarian or cooperative rather than commercial objectives; private organisations that pursue activities to relieve suffering, promote the interests of the poor, protect the environment, or undertake community development.**

However, NGOs are organisations that are extremely diverse in nature. It is therefore almost impossible to find a coherent definition that can represent this diversity. According to Joan Mencher, the term NGO is a catchword for an enormous variety of structures, pursuing diverse strategies, of widely differing sizes, aims or missions, and defies definition because of this diversity.

Environmental NGOs may be defined as those civil society based non-profit organisations articulating environmental concerns either from a 'productive', 'protective' or an 'alternative' standpoint.

10.2.1 Understanding the Origin of NGOs

Historically, the origin of NGOs is often traced to the many associations and movements appearing in the United States and Western Europe after the World War II. It is pointed out that these were a result of the initiatives of various middle-class individuals in response to the devastating effects of war; some examples of such NGOs are the International Committee of the Red Cross, CARE, World Vision and Oxfam. These organisations were referred to as "non-governmental organisations" because of their status in the United Nations. It is maintained that these associations and movements were founded for the defence and promotion of various values.

In the Third World, the origins of NGOs could be traced both to the anti-colonial, anti-feudal struggles of the early twentieth century and the nation building exercise in the post-colonial periods of the newly emerging nations during the middle years of the twentieth century.

The Stockholm Conference of 1972 and the Agenda-21 of 1992 that envisaged legal liability regimes, economic regulation and environmental impact assessment as international regulatory instruments for protection of environment certainly had a significant role of NGOs in their making. It is pointed out that the NGOs assembled at the Flemingo Park to discuss about various environmental issues. Groups as diverse as the Osho Spiritual Health Organisation, Auroville, Green Peace, and The International Campaign for Tibet, The Royal Institute for International Affairs, and the World Bank expressed different views and perspectives. The International NGO forum coordinated an alternative treaty process initiated by various environmental activists and organisations.

10.2.2 Structure of NGOs

There are perhaps three approaches to understand the structure of the NGOs viz., an approach based on functional indicators and another based on structural or relational indicators. In the first approach, the structure of an NGO could be viewed based on (a) composition, (b) size (c) mission or purpose (d) sources of funding (e) history (f) focus on a specific sector (g) entrepreneurial capabilities and (h) effectiveness in achieving the set tasks.

Fig.10.1: Some NGOs active on environmental issues in the SAARC region

A second approach is based on the idea that the State represents the authority sector and market a profit sector. The NGOs represent a 'third sector' and can be classified based on the incentives used to gain cooperation or compliance into voluntary sector, the membership sector, the self-help sector and the participatory or collective action sector.

The third approach to understanding the structure of an NGO is based on its relationship with:

a) The dominant development paradigm, which, at the moment, is the achievement of development through deregulated, globalised, competitive markets and minimisation of State's role in the domain of economy;

b) Different socio-political movements articulating interests of the vulnerable and interests that have been neglected; and different traditional institutions and structures.

While analysing the environmental NGOs, all the above approaches could be relevant. However, there is a tendency for the 'productivist school' to use the first approach, the 'protectionist school' to use the second and the 'alternative school' to use the third approach. And the reasons for this lie in the perspectives the NGOs under consideration adopt. However, before you learn about these perspectives, you might like to apply the above understanding to an NGO in your region.

SAQ 1

Describe the origin and structure, from all three perspectives given above, of a prominent environmental NGO active in your region.

10.2.3 Perspectives on NGOs

There are different perspectives on the role of NGOs. The dominant perspectives may be classified into two broad categories viz. (a) The Development Perspective, and (b) The Advocacy Perspective.

The Development Perspective: The development NGOs have been around since the 1960s. However, they have acquired an important role as part of the economic reforms carried out in the Third World in the post-mid-1980s. The development of NGOs has come to dominate this sector. According to the development perspective, the rise of NGOs is a result of the failure of state-led development model. The state has been criticised for being an inefficient agent in determining the resource allocation.

A major criticism has been that developmental policies in a state-led model are not based on rigorous rational economic reasoning; rather they are an outcome of populist demands. The implementation side in a state-led model has been criticised for being centralised, bureaucratic and often seen to be rampant in the phenomenon of 'rent-seeking'. This perspective endorses the neo-liberal view of the international agencies such as the World Bank and the IMF assigning a major role in determining the development agenda to the Market.

Baumol and Gates (1988) who belong to the development perspective, while analysing the choice of appropriate environmental policy argue that one has to consider costs and benefits of reducing pollution. For example, in order to achieve 100 percent pollution free production, the United States, would have to spend US $200 billion. They therefore conclude that it is irrational to reduce pollution below a certain level. Thus the development of NGOs operates within the 'Productivist school' of environmental NGOs.

The Advocacy Perspective: Advocacy groups usually find space in societies where institutions, especially the state, are conservative, irresponsive, corrupt or repressive. These groups lobby to influence public policy and are often in conflict with the State and/or the dominant groups in the society. The conflict is often an outcome of differing value frameworks. The advocacy groups talk in terms of alternatives to the dominant models. Their activity involves not only providing humanitarian services but also mobilisation of and articulation of dissenting voices. In this sense they play a role of democratisation and social reform. We may identify NGOs articulating anti-patriarchal, anti-caste, anti-communal, human rights and anti-modernisation perspectives as belonging to this category of NGOs.

These groups not only articulate the interests of those that are marginalised and excluded from the development process, but also point-out to the structural causes and constraints in the system that actually result in the marginalisation and exclusion. These groups usually consist of professionals and activists.

The environmental NGOs that fall under this category are usually those belonging to the biologists school advocating the limits to growth or idealists who believe in the construction of alternative communities through the affirmation of shared spiritual values, or they could be different types of communitarians viz., Conventional Marxists, Ecological Marxists or other non-Marxist traditions of communitarians including anarchism, agrarianism or those that are loosely termed as 'decentralised socialists.'

10.3 NGOs AND MNC LINKS

It is maintained that in the context of recent economic reforms and the emergence of the new trade regime and its consequences for various social groups, and especially its fallout on nature, environmental NGOs have acquired an increased importance. In this section, we focus on this aspect of NGOs.

10.3.1 The New Trade Regime, MNCs, NGOs and Development

In most of the post-colonial Third World countries, the old trade regime adopted, soon after their independence, an import substitution strategy. It was designed to reduce rural poverty, initially through huge investments in agricultural sector and later by way of providing non-formal employment including employment in the manufacturing industries. For a long time, the economic model was designed with the purpose of preventing concentration of economic power and solving the problems of regional imbalances. It was also aimed at improving the standard and quality of life of the rural people by way of regulating the labour markets and implementation of various employment generation and poverty eradication programmes. All these objectives were to be realised by various measures of protection, promotion and

regulation. Ecological consciousness found place in the Third World development policy very recently. The state was again a crucial institution in setting and administering the environmental standards.

The New Trade regime is associated with the policies of deregulation, disinvestments and opening of the economy by removing the barriers to international trade popularly called as the **Liberalisation, Privatisation and Globalisation** (LPG) Policies. The old policy was criticised on the basis of the arguments that distortions in the relative prices of inputs and outputs due to the imposition of protective measures lead to inefficiencies in resource allocation that entail a cost for the national economy. It was asserted that protection tends to create monopolistic positions in some industries and the producers will have little incentive for product improvement and technical change. In fact when product quality deteriorates, firms do not take the risk of introducing new products and therefore innovation suffers. By maintaining prices at high levels, the lack of competition limits the expansion of domestic markets. It is further asserted that high levels of protection may affect economic growth in various ways. Unless protection leads to increases in profits that are in turn reinvested, the static cost of protection due to inefficiencies in resource allocation reduces the amount available for investment. Based on this understanding, the economic reforms also called as the structural adjustment policy (SAP), were introduced in various Third World economies.

NGOs and WTO: Though various NGOs have been interested in the GATT since its inception, the period since the creation of the WTO has vividly demonstrated that the multilateral trading system is being scrutinized by public opinion like never before. Ministers adopted the Marrakesh Agreement, they also decided to include a specific reference to Non-Governmental Organizations (NGOs) in ***Article V:2***. *O*n 18 July 1996 the General Council further clarified the framework for relations with NGOs by adopting a set of guidelines **(WT/L/162)** which *"recognizes the role NGOs can play to increase the awareness of the public in respect of WTO activities"*. These guidelines are instrumental for both Members and the WTO Secretariat in maintaining an informal and positive dialogue with the various components of civil society.

Since 1996 there has been a focus on attendance at Ministerial Conferences, participation in issue-specific symposia, and the day-to-day contact between the WTO Secretariat and NGOs. The Geneva Ministerial Conference and 50th Year Celebration of the multilateral trading system epitomised the evolving relationship with NGOs. NGOs were briefed regularly by the WTO Secretariat on the progress of the informal working sessions – a feature welcomed by NGOs as a genuine sign of commitment to ensure transparency and the recognition of civil society as an entity which deserves attention in its own right.

Source*: http://www.wto.org/english/forums_e/ngo_e/intro_e.htm*

The introduction of the reforms including, de-licensing and removal of protections (removal of product reservations), disinvestments in public sector, reduction and removal of subsidies, removal of quantitative restrictions on imports and reduction of import duties and provision of a freer access to foreign technology etc., have led to an adverse impact on various sections of the society and more often than not, nature also suffered the costs of this new development model. The conditions especially of traditional agriculturists, artisans, those employed in rural service sector, some local industries and labour have been adversely affected. In some of the South-East Asian countries, initially, the reforms were thought to be successful, but later saw political instability, followed by mass violence in the society.

MNCs and Child Labour: Multinational seed giants, including Monsanto, Syngenta, Unilever and Bayer as well as Indian companies continue to benefit from child labour despite efforts by international NGOs and Indian public interest groups to eliminate this pernicious practice, concludes a report by the India Committee of the Netherlands (ICN). An estimated 12,375 children are working in horrendous conditions on cottonseed farms in Andhra Pradesh for MNCs, Advanta (Dutch-British), Proagro (a division of Bayer, Germany) and US companies Emergent Genetics and Monsanto. Indian seed companies also employ an additional 70,000 children often bonded to the employers by loans.

These children work for long hours under extremely hazardous conditions and a number of children have died or become seriously ill due to exposure to pesticides. The report finds that efforts by the MV Foundation (MVF) – headed by Magsaysay winner Dr. Shanta Sinha – to persuade these companies to eradicate child labour have been unsuccessful as companies have failed to take concrete measures. The report finds that lack of political will, coupled with reluctance on the part of MNCs to share names of seed organisers is impeding compliance monitoring. MVF contends that these MNCs have reneged on their promise to disclose the names of farmers employing child labour.

(**Source:** *http://www.indiatogether.org/2004/nov/chi-mnccotton.htm)*

In the Latin American countries such as Mexico there were peasant uprisings against the reform policies. In India, drought and the lack of irrigation and drinking water, a spate of suicides by farmers who cultivated non-traditional crops, starvation deaths of artisans, famine raids, retrenchment of industrial labour, and deterioration in labour, environmental and public health standards have been witnessed. It is therefore pointed out that a large segment of what constitutes the environmental movement is actually a peasant movement draped in the cloth of environmentalist. Thus a number of local initiatives in defence of traditional rights in land, water, forests and other living resources collectively constitute what the sympathetic intellectuals have termed as the 'environmental' movement.

Fig.10.2: Electronic waste in India (**Source:** www.tribuneindia.com)

India's infrastructure related to the management of e-waste is yet to take a definite shape. The developed countries like the U.S add to the waste that has been already generated. According to a report, nearly 1.38 million obsolete PCs like 486, 386, and 286 have been dumped in India. In Bangalore alone, four lakh PCs have been dumped. The e-waste has adversely affected soil and water bodies, especially groundwater. E-waste needs to be managed efficiently because of the potential health hazards they pose. Heavy metals such as lead, silicon, cadmium, and mercury used in PCs are well-known toxins and carcinogens, the study has said. Metals cause neurological disorders, and liver, kidney, and the lungs can also be severely damaged, according to doctors. Most of this waste finds its way into the landfills on the City's outskirts, where solid wastes are deposited.

In India there is an abysmal gap between environmental legislation and enforcement. Besides, there is no specific law or legislation to deal with e-waste and, to make matters worse, India allows import of PCs that are less than 10 years old. The present practice to manage e-waste is through various low-end management alternatives such as product reuse, conventional disposal in landfills, and burning in the open air, apart from recycling, which exposes the worker to the hazards of the metals. Some of the NGOs have been working towards an effective e-waste management policy. Such initiatives by NGOs go a long way in ensuring strong safety networks.

Source: "E-waste causing soil, water pollution", *The Hindu*, June 25, 2003

Following these experiences, it was realised by those strongly advocating reforms that there was a need for what they called a strong 'safety net'. The civil society organisations such as the NGOs therefore grew extremely important in their effort to prevent a crisis.

10.3.2 The New NGOs

The NGOs that have come as a complement to the reforms agenda are the new NGOs. It is pointed out that the NGOs have an important role in supporting the World Bank's policies. They are seen as an integral part of the structural adjustment packages through which the World Bank and the IMF impose public sector reforms centred on reducing expenditure, restructuring the public sector and ending state intervention in markets and projects. This is where the NGOs come in, as partners and agents of social funds and other compensatory schemes designed to limit the social and political upheavals resulting from these adjustment programmes. By giving a larger role to the NGOs participating in cushioning the shock of SAPs, and by creating new jobs, the Bank is hoping to gain for itself a 'kinder, gentler' image.

10.3.3 NGOs and MNCs

As part of the economic reforms, the role for markets as institutions and MNCs as organisations has increased. And over a period of time, their social relevance has been getting redefined.

Traditionally, it was argued that the purpose of business was only profit-maximisation. It is presumed that in a competitive market, inequalities in wealth are legitimate as the possession of wealth is in essence a reflection of the contribution of its possessor to the generation of wealth. Since more wealth and economic activity meant more opportunities, generation of wealth was seen as a meaningful contribution to the social well-being. Those building business empires were admired as those that contributed to development. However, it was after the bitter experience of the Great Depression of the 1930s, followed by the devastation created by the Second World War that demands for greater egalitarianism were raised by the social justice movements. These took varied forms such as consumer forums, trade unions, human rights and environmental movements. This was also the time when Welfare states became a general model in most of the countries adopting capitalism.

The Welfare state was a strong instrument of redistribution of wealth. It was in this backdrop that notions of 'free market' capitalism had to stand the litmus test of their social commitment. It was this social pressure that brought about the concept of 'Corporate Social Responsibility'. According to Bowen, the social responsibilities of a businessman consisted of obligations "to pursue those policies, make those decisions, or to follow those lines of action which are desirable in terms of objectives and values to society."

Corporate Bodies and Social work: Many corporate bodies are working together with various NGOs in doing service to the underprivileged and physically challenged. By taking up a social initiative, the companies, of late, have been taking up major responsibility towards the well being of the society. They are extending monetary benefits by contributing certain percentage of their budgets to the social work. Many of the corporate bodies have already been handling community projects along with NGOs. Donations to NGOs call for tax benefits. Though the onus for human development lies with the government, which should use the tax-payers' money for such initiatives, many companies, however, are successfully breaking this mindset, by coming forth and putting into action some social development in conjunction with the Government. The successful scheme of the mid-day meal in the municipal and Government schools has appealed to many firms. Other schemes include: The Larsen and Toubro company provides counselling to people living with HIV and is engaged in partnerships with governmental organisations and NGOs to ensure assistance provision; the Ullas Trust of Polaris Software Labs' scholarships to a number of students, IBM KidSmart programme introducing technology at the pre-school level and Maruti Udyog Limited Company's efforts towards providing a cleaner environment and conserving energy resources and so on. The trend observed in social responsibility initiatives is that the older, traditional firms want to look at long-term projects that they can adopt and nurture over a few years. The corporate giants such as Wipro and Infosys have established respective`Foundations' through which they accomplish community work.
Source: *http://www.thehindu.com/thehindu/mp/2004/03/22/stories/2004032201850100.htm; http://www.indianngos.com/corporate/l&t/caseexamples.htm*

In the later periods, the World Business Council for sustainable development defined Corporate Social Responsibility as "the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local communities and society at large". It is as part of this understanding that the corporate sector started actively involving itself in philanthropic activities, contributing by way of direct involvement and/or by providing the necessary resources to a number of activities including Community Development, Educational Foundations, Environmental Protection Projects and Charity. NGOs and the corporate sector find a common ground in these activities.

SAQ 2

Select a specific NGO and evaluate its role in the environmental movements, its relationship with MNCs, if any and its performance.

10.4 NGOs versus SOCIO-POLITICAL MOVEMENTS

The failures of Market, State and the exploitation perpetuated by various structures of dominance in the society have ushered in various transformative socio-political movements in the Third World. These movements have criticised the role played by the NGOs. Some points of this criticism are given below:

On NGO Funding

In a recent move in India, the Home Ministry has decided to regulate funding of various NGOs. It is pointed out that by 31 March, 2001, there were 22,924 NGOs registered as receiving foreign funds. Another 638 NGOs had secured approval for foreign funding. In the year 1999-2000 the total foreign funding received by these NGOs amounted to Rs.39246.3 million. In the following year the foreign funds received by NGOs increased by 15.56 percent to Rs.4, 53,523 million.

Among the nations that were identified as the major donors were the United States, which contributed Rs.6775.9 million, United Kingdom, which contributed Rs.6445.1 million, and Germany (Rs.6445.1 million). Apart from this, in the Seventh Five Year plan, the Government of India has allocated Rs.3800 million for the NGO sector. It is further pointed out that out of these funds, the highest amounts were received mainly by the NGOs specialising in rural development and health and family welfare. A total of Rs.5477.4 million was received for rural development activity, and Rs.4329.8 million towards health and family welfare.

However, it is pointed out that unlike the socio-political activists, those involved in the NGO activity work not because of their idealism, but because they get paid for it. They are like any professional employee in a job. They are often said to be receiving substantial amounts and salaries but their commitment to the cause that they represent, is said to be in doubt.

Accountability of the NGOs: Many of the NGOs in India receive huge funds from the national and international donors. In order to ensure a true presentation of financial statements, the Institute of Chartered Accountants of India (ICAI) has released the guidelines for the accounting and auditing of the NGOs.

This would ensure transparency and accountability by the NGOs for the optimum utilisation of funds for public welfare. The accounting and auditing procedures vary from one NGO to another lacking uniformity. A uniform procedure can, in the long run, be used as a standard guide so that the discrepancies are avoided.

It is also evident from various experiences that the attitude these NGOs take towards various problems are often mechanistic, aimed more at reaching the targeted numbers to show the on-going work rather than genuine concern, leading to frustration amongst those employees of these organisations that evince passion for social change.

Some Questions about NGO Politics

The functions that NGOs perform and the manner, in which they conduct themselves, according to a school of thought, have great significance in terms of their political implications. In the first place, in continuation of the earlier comment on social activity as a professional obligation rather than a social obligation resulting from the salaried employee status of the activists, it is seen to be part of a larger political process. It is argued that this reduction of social obligation into a professional one is

part of a neo-liberal strategy to de-politicise the problems of the masses. It is also seen as a process of co-option of the politically articulate critiques of the system. It is observed that the bulky salaries, the standards of living, the life styles and the language of conducting the discourse about social change by the employees of some of the affluent NGOs, are quite elitist, alienating themselves from mass politics. Going a little further, there are also the critics who see a conspiracy in the rise of certain types of NGOs. Michael Edwards observes that the concept of development as defined by the NGOs, in fact, reinforces a counter revolutionary thinking. Palmer Jones argues on similar lines that NGOs are essentially status-quoists creating distortions about notions of development and democratisation. There are also some scholars who have seen NGOs as part of the financial capital-based imperialism. It is also alleged that since in the neo-liberal regime both the state and the markets are reluctant to perform the welfare activities, the NGOs are seen as organisations that are cheap substitutes, as they would be willing to carry out the same tasks at far lesser costs.

However, it is pointed out that while these organisations work amongst the poorest of the poor, they actually operate within the framework of the donor country's foreign policy and also indoctrinate people with ideas and opinions that are in essence in the interests of the donor country, thus resulting in what is called 'manufacturing of consent'. In fact, it is also argued that the developed nations do not donate money without expecting any returns. Rather, the act of donation is a conscious self-interested process of moral coercion and is guided by a quid-pro-quo reasoning. There are also other trends of critique, associated with the role of various religion based NGOs, raising controversies about carrying out religious conversions in the garb of developmental activities.

Despite some socio-political movements raising these points of critique, the relationship between NGOs and various socio-political movements is much more intricate and we try to present this below.

Interaction of Socio-Political Movements and NGOs

There are instances where NGOs and socio-political movements have entered into conflicts and there are also instances where they have been able to work together. The relationship often depends on the nature and demands of the socio political movements. It is quite obvious that usually, socio-political movements have much larger concerns than what is possible in the framework of the NGOs. However, it is in instances where certain demands put forth by the NGOs/ socio political movements, reinforce the NGOs' understanding of development and are perceived as a desirable change towards transformation by both the NGOs and the socio-political movements, that both these social forces have struck a common ground. Since the relationship between the NGOs and socio-political movements has been contingent upon the common demands, there are instances where the NGOs and socio-political movements have been conflicting and complementing one another. We present here both the instances.

A Moment of Conflict

We may look at how in some instances, NGOs have entered into a conflict with socio-political movements. In case of the proposed Sardar Sarovar Project (SSP) across the Narmada River, certain questions have been raised by movements such as the Narmada Bachao Andolan (NBA). It is pointed out that in NBA's understanding, SSP implied:

Unprecedented displacement, violation of the right to life and livelihood of people, the degeneration of land, water and forest resources, the un-tenability of benefits, the staggering financial burden, and the consequent international debt trap...

It is said that to counter Narmada Bachao Andolan's(NBA) criticism of Sardar Sarovar Project (SSP), the Gujarat government organised rallies, festivals, and exhibitions throughout the state and tried to propagate the idea that the SSP was the real lifeline of Gujarat. Amongst those supporting the government's view were various NGOs of Gujarat. Some of these NGOs argued that their primary concern was to bargain for a fair compensation for those affected by the project. The radical opposition by the NBA was characterised by these NGOs as 'lofty ideal' and 'not responsible activism'. The NGOs also maintained that 'rehabilitation was impossible' as 'enough land is not available'. A large number of NGOs therefore took a stand that NBA's total opposition to the project was couched in rhetoric and romanticism.

Fig.10.3: Rooftops are all that remain of a village in the flooded Narmada valley after the sluice gates of the dam were opened (**Source:** image.pathfinder.com)

However, it is maintained by other scholars such as Kothari, that the stand NBA was taking was 'nothing short of challenging the fundamental structures of power and patronage, received categories and ideologies as well as representative processes that discriminate against the primary victims of economic development'. Thus we find from the above instance that the orientation of the developmental NGOs is quite different from the socio-political movements articulating alternative development thinking, which might as it did in this case, lead to a conflicting relation between the socio-political movements and the NGOs.

A Moment of Solidarity

There are a number of areas where NGOs and socio-political movements have co-operated. A large number of NGOs have been part of the struggle opposing the practice of untouchability against 'lower castes'. The struggle for equal opportunities and dignity for Dalits (who are considered as the lowest in the strata of society) and the abolition of caste system and social transformation are much larger issues being addressed by the Dalit movement. While some NGOs have emerged with the specific objective of addressing Dalit issues, other organisations such as civil liberties and human rights groups have also taken up these problems.

As also in the case of feminist movements, one finds that the feminist movement has solidarity with some NGOs. In the recent constitution of micro-credit societies as part of the formation of self-help groups, for instance, a section of feminists have noted that these societies have certainly contributed to an increased socialisation of women. It is maintained that at least in case of some women, it is for the first time that they have entered the public space.

They have found that these societies might not have actually accomplished the original task of elevating the status of women by providing them with economic independence from the male heads of the household. However, they have certainly contributed towards giving women an opportunity to ventilate their woes, thus reducing their suffering and giving them an opportunity to become aware of the world around them.

SAQ 3

In continuation with your answer to SAQ 2, suggest measures for turning the NGOs into more effective instruments for environmental action that are in sync with the socio-political aspirations of the people.

Addressing the Challenges – the Civil and Political Space

The analysis of the conflicting and solidarity movements between the socio-political movements and the NGOs can be analysed if one takes into consideration the different spaces in which these institutions operate and the interconnections between these spaces. However, even before one starts analysing these interconnections, we may discount those NGOs that have degenerated into commercial ventures and have no real social commitment. We may also find this analysis not relevant for those

political movements that legitimise oppression of the vulnerable by the dominant, whether it be on religious, caste, region, gender or based on any such grounds.

Organisations working for social change have been conceptually classified into civil society organisations and political organisations, though no such strict separation exists. The classification depends on what is the reference point of the organisation, whom is the organisation addressing. If the reference point is the state or various other political organisations, then it is essentially operating in a political space. If the reference point is the various social institutions, whether it is family, caste, community etc., then it is essentially operating in a civil society space. There is a long debate in social and political theories on the relationship between these spaces. While one school of thought believes that the state essentially is an instrument in the hands of those that are dominant in the society, the other school of thought sees no such structured interconnection between the two spaces. It maintains that the state and civil society are completely autonomous of each other.

The Green Belt Movement, Kenya

The Green Belt Movement (GBM) is a grassroots non-governmental organisation based in Kenya that focuses on environmental conservation, community development and capacity building. Prof. Wangari Maathai established GBM in 1977, under the auspices of the National Council of Women of Kenya. She was awarded the Nobel Peace Prize for the year 2004 for her persistent efforts towards the contribution to sustainable development, democracy and peace. She has struggled for environmental and human rights, especially the rights of women. She often fought with the Kenyan Government regarding the above issues. Notably, this is the first time ever that an environmentalist has been awarded the Nobel Peace Prize. This proves that one of the essential factors for a right to livelihood is a clean and green environment. The purpose of the GBM was to create a society of people who consciously work for continued improvement of their green and clean environment, and promote consciousness for self-determination, equity, improved livelihoods, and environmental conservation- using tree planting as an entry point. The GBM helps in reducing the effects of deforestation and providing a forum for women to be creative and effective leaders. It also involves the transfer of technology from experts to the people, turning small scale farmers into agro-foresters. Public awareness was raised on issues related to environment and development. GBM today has over 600 community networks across Kenya that care for 6,000 tree nurseries. It has helped in planting more than 30 million trees on private and public land, protected reserves, and in urban centres. This has resulted in the transformation of many landscapes (forests, steep slopes and other degraded areas) and protection and restoration of habitats for local biodiversity (plants and animals). Awareness of the impacts of ecological decline has increased along with public interest in defending the environment, including forests and public parks and open space. GBM emerged as an empowered community and helped in protecting the natural resources by tree-planting and civic and environmental education programmes. GBM's activities have enabled various communities to understand the essential linkages between their basic needs and a healthy environment and the need for equitable and sustainable development.

Source: *http://www.greenbeltmovement.org/*

A third point of view argues on the lines that despite the fact that the dominant sections in the society do have greater influence on the state, there is also a democratic space which exists as a result of the search of these dominant groups for legitimacy. And it is this self-conflicting act that generates some space for progressive social change.

Thus, despite the structural connection between the civil society and the state, there is a level of autonomy. If one takes the first perspective on the relation between the state and the civil society, all social transformation essentially gets located in the political space. If one takes the second perspective, then social transformation becomes independent of the political space. However, if one takes the third perspective, then social transformation can be seen as a continuum, and both the political and civil society spaces become relevant. These conceptual categories may help us in understanding various NGOs and analysing their relation with different socio-political movements.

10.5 ALTERNATIVE NGOs

Based on the above understanding of NGOs' relation with markets on one hand and their relation with socio-political movements on the other, which is varied and evolving, we may approach the idea of identifying conventional NGOs and the alternative NGOs. In order to understand what alternatives NGOs could mean, we need to, first of all, understand what the conventional NGOs are and also understand the possible alternatives that could exist. As already pointed out, at this point of time, the development NGOs are the conventional NGOs. However, this does not mean that all NGOs that are pursuing development agendas are conventional NGOs. A conventional NGO more specifically refers to those NGOs that have endorsed the view that markets are the primary institutions in accomplishing the tasks of development. However, within this paradigmatic framework, there are possible alternatives.

If the dominant viewpoint in the 'how of development' suggests giving greater role to the industrial sector for instance, the alternative NGOs could mean those that strive to change the priorities and articulate the interests of other sectors for resource allocation. The 'alternative' could also mean how the wealth so generated is distributed and how this perspective of distributive justice is articulated. The conventional NGOs believe in the economic rationale of distribution, by arguing that the method of redistribution must ultimately lead to greater economic benefits than costs. Alternative NGOs would then mean: (a) those that take long term benefits perspective in arguing that the distributive justice might not show up immediate benefits but certainly there would be long term returns or (b) those which could in fact argue for altruism in redistribution.

Apart from these possible meanings of alternative NGOs within the broad conventional framework, alternative NGOs could be those that radically differ with the framework itself and look at themselves as located outside it. Alternative in this sense of the term could be either those NGOs that denounce the proposition of a limitless growth of wealth and argue that the development process must take into consideration the constraints posed, for instance, by nature that have a different set of rules guiding its sustenance and regeneration. Alternative could also mean those NGOs that challenge the very idea of an anthropo-centric worldview. These are the ecology conscious organisations that have altogether different measures of valuing the 'good of the society'. Generation of wealth in this perspective might well be a marginal or an irrelevant indicator of social well-being. While all the above mentioned NGOs are alternative only in an incremental sense, the last variety of NGOs is alternative in a qualitative sense of the term.

10.6 SUMMARY

- The NGOs in general including environmental NGOs are defined in various ways. The NGOs have existed for a very long time but have taken a structured existence only since the post World War II period and "environmentally conscious NGOs" are relatively recent phenomena.
- There are different ways of understanding the structure of NGOs and the role they play in the society. Different analytical perspectives determine the choice of indicators to analyse the structure of NGOs.
- As part of the new economic orientation, there is an increased role of markets and the MNCs have become crucial. While the markets determine the rules of engaging in the process of development, the MNCs control large amounts of resources. Thus it has become necessary for the NGOs to take a clear perspective on their relationship with markets as institutions and the MNCs as business

organisations. This process of taking positions has also changed the character of the NGOs leading to the rise of what are referred to as new NGOs.

- While the market has become central to the development process, interests of the marginalised and the excluded have got articulated through various socio-political movements. These movements have criticised the NGOs about their funding mechanisms, their political positions and questioned their role. While NGOs have remained mostly focused on issues, the socio-poilitical movements have raised structural questions. As the socio-political movements are often mass based, it has become necessary for the NGOs to address them and to define their relationship with these movements.

- Based on the perspectives adopted by the NGOs about the relationship between the civil-society space and the political space, their relationship with socio-political movements get determined. If one understands what type of NGOs have come to be conventional and dominant, and if one grapples with the possibilities within and outside the existing frameworks, we can come up with what alternatives exist for NGOs and what alternative NGOs could mean.

10.7 TERMINAL QUESTIONS

1. Discuss the origin of NGOs and their impact on global policies.

2. Explain the linkages between MNCs and NGOs and their attitude towards development.

3. What, according to you, will be the impact of alternative NGOs on the future society?

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