UNIT 1 ENVIRONMENTAL DIMENSIONS OF GLOBALISATION

Structure

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.

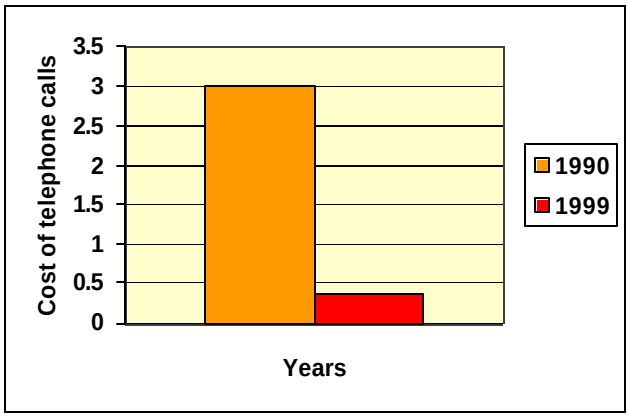

Fig. 1.1: The expansion of telecommunication network has led to drastic reduction in costs. This figure shows the cost of telephone calls from New York to London

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).

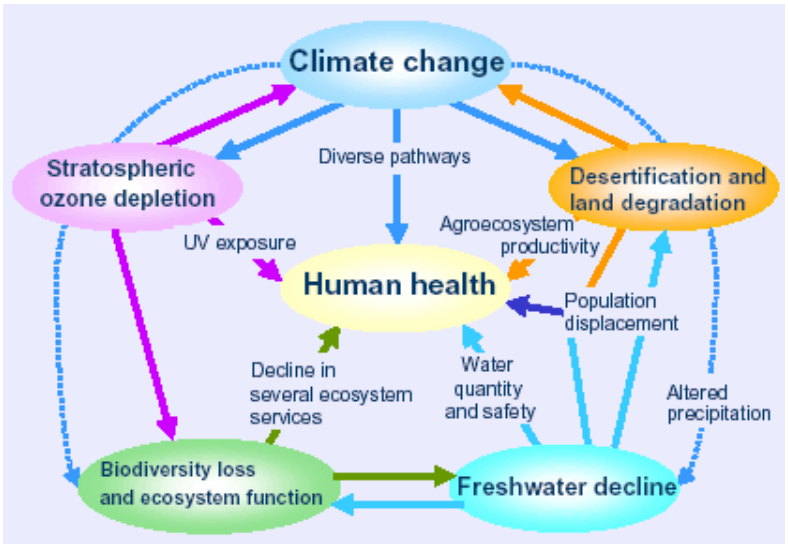

Fig. 1.2: Global environmental problems (Source: http://www.who.int/globalchange/en/**)**

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.

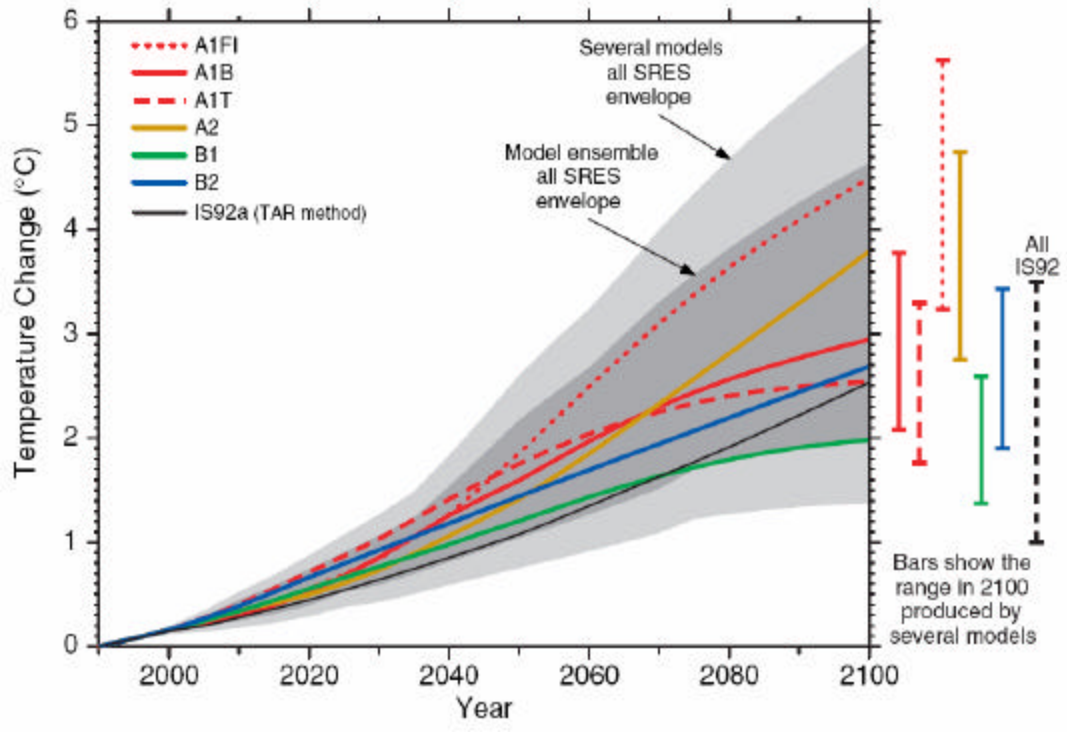

Fig. 1.3: Projected rise in global mean temperature due to global warming (Source: IPCC 2001)

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.

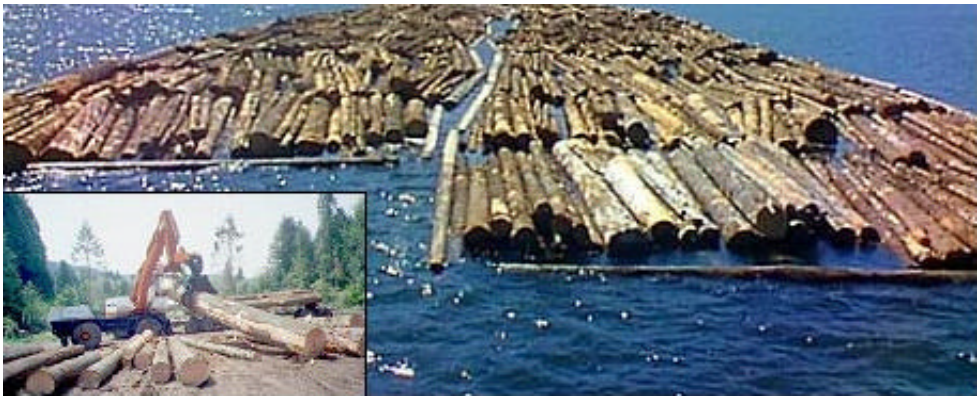

Fig.1.4: Deforestation for timber wood (Source: www.fao.org/docrep/ 007/)

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.

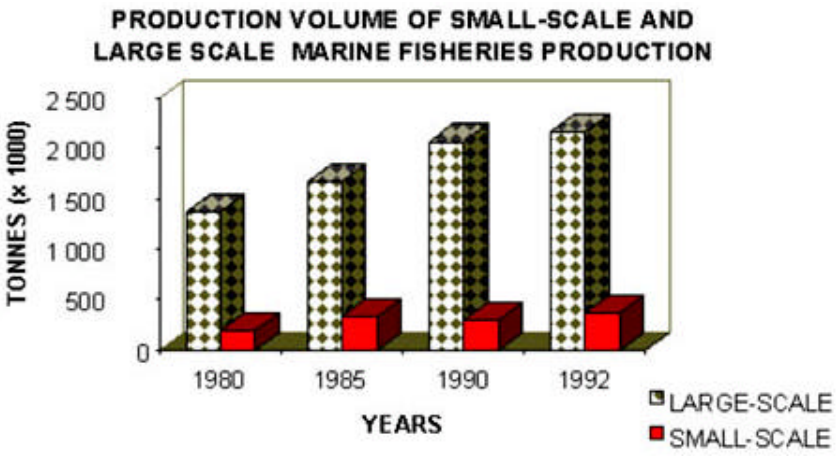

Fig.1.5: Comparison of the scale of marine fisheries production in South China Sea area
(Source: www.fao.org/docrep/)

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.

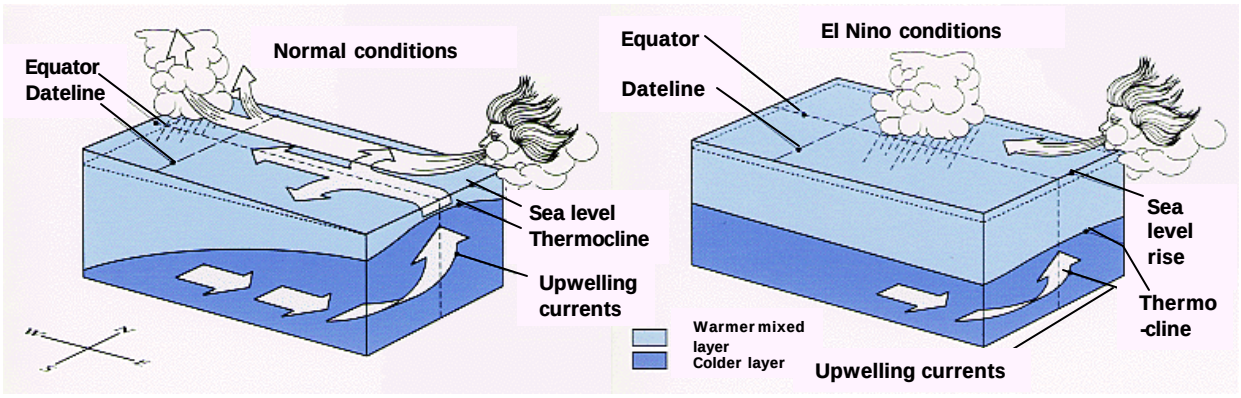

Fig.1.6: Explaining El-Niño (Source: winds.jpl.nasa.gov/ images/winds_over_ocean2**)**

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