

---

## UNIT 8 PLANNING FOR SUSTAINABLE DEVELOPMENT

---

### Structure

- 8.0 Objectives
- 8.1 Introduction
- 8.2 Some Recent Trends in the Area of Sustainable Development
- 8.3 Challenges to Sustainable Development
- 8.4 Planning Process for Sustainable Development
- 8.5 Activity
- 8.6 Conclusion
- 8.7 References and Further Readings

---

### 8.0 OBJECTIVES

---

After reading this unit, you should be able to:

- Understand the meaning of sustainable development;
- Bring out the recent trends in the area of sustainable development;
- Discuss the challenges to sustainable development; and
- Throw light on different planning measures for sustainable development.

---

### 8.1 INTRODUCTION

---

Sustainable development as the name suggests refers to development, both human and technological, in a sustainable manner. It implies that while on the one hand, the pace of development needs to be sustained; on the other hand, it should be ensured that development does not prove detrimental to the existing resources. In both these contexts, the needs of the future as also of the present generation are of utmost importance. Sustainability includes conserving the national and global bio-diversity, checking the alarming pace of degradation taking place, and ensuring good standards of living in rural and urban areas. There are several challenges to sustainable development, especially in the developing countries.

This unit focuses on the global and regional issues that are relevant to sustainable development. Knowledge of these problems is pertinent to plan for sustainable development; an analysis of these factors will be made in context of developing countries.

The unit begins with a discussion on the challenges to sustainable development in India as well as the South Asian region and the trends related to these. Most of these reveal an intensification of the problem in recent years. The unit also looks at the key factors in the planning processes, and the indicators of sustainable development.

---

### 8.2 SOME RECENT TRENDS IN THE AREA OF SUSTAINABLE DEVELOPMENT

---

Paul Samson says that sustainable development is currently a “catchword” and as such is often used and abused. In view of the fact that a universally accepted

definition does not exist for many basic concepts used by society, primarily due to a number of contradictions, the same is true of sustainability and sustainable development. However, at the global level, the following definition serves well. “In the narrowest sense, global sustainability means indefinite survival of the human species across all the regions of the world. A broader sense of the meaning specifies that virtually all humans, once born live to adulthood and that their lives have quality beyond mere biological survival. The broadest sense of global sustainability includes the perspective of all components of the biosphere, even those with no apparent benefit to humanity” (Brown, et. al, 1987). Broadly, sustainable development is defined as a pattern of social and structured economic transformations (development), which optimises the economic and societal benefit available in the present, without jeopardising the likely potential for similar benefits in the future. A primary goal of sustainable development is to achieve a reasonable and equitable distributed kind of economic well being that can be perpetuated continually for many human generations (Sustainable Development – A Gateway, 1995).

Some of the constituents of sustainable development universally recognised are: health and environment, economic development, equity, environment protection, sustainable livelihoods, population control and education, climate change, high pollution level, deforestation, depletion of natural resources, etc.

Sustainability is a necessary but not sufficient condition for sustainable development. Sustainable Development warrants a delicate balance of policies and programmes that are aimed at social development, all these, ensuring the resistance of the ecosystem remains a fundamental requirement.

Sustainable development must include human values, democratic institutions, economic growth with social justice, uninterrupted processes of institutions, nature conservancy, modest consumption habits, reformed international financial and development institutions for unforced effectiveness, enhanced role of people’s institutions, environmental literacy and respect for all forms of life.

As per the Brundtland Report, 1987: “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 poverty should be given; and the idea of limitations imposed by the state of technology and social organisation on the environment’s ability to meet present and future needs.”

The 1992 Rio Summit Declaration sought to reflect efficient and sustainable use of factors of production in the formation of commodity prices, including the reflection of environmental, social and resources costs. The post-Rio Deliberations at the UN Commission on Sustainable Development did not make any significant progress, however, the United Nations Environment Programme (UNEP) and UNCTAD declared in 1997 that they work together to provide an integration of trade and environment issues. The most important was the institution of the General Agreement on Tariffs and Trade (GATT). World Trade Organisation (WTO) superseded this. The key entity under the WTO is the Committee on Trade and Environment (CTE), which was constituted in 1995.

---

## 8.3 CHALLENGES TO SUSTAINABLE DEVELOPMENT

---

The data reveal that South Asia is home to the largest number of poor in the world. “It has the lowest per capita income (\$440) of all developing regions. It also has the highest rate of youth illiteracy (23% for males and 40% for females) and lowest rate of access to sanitation facilities (37%). The economy, which grew by 5.6% annually in the last decade, depends more heavily on agriculture here than in any other region. With increasingly open economies in the 1990s, non-governmental organisations, particularly multi-national corporations, have progressively larger impacts of the fragile social and environmental systems in the region” (Document, 2003).

There are problems at several levels in the path towards sustainable development. If we focus on India or the region as a whole, some of these emerge from the fact that we are a part of the global system where rapid development in rich nations leads to imbalances in the environmentally poorer ones. An instance of this is the recent trend towards the introduction of non-fuel efficient technology by the rich nations in the developing countries with a motive of profit. Also, the consumption of fuel by these nations, such as the USA, is far more than in the developing countries. Often the environmental agenda is given short drift by the developing nations because they feel that the developed countries have created the problems from which they are suffering.

However, this is only one part of the problem. The serious challenge to sustainable development comes from within the developing country itself. Some of these are: rapid population growth, growing pollution and impoverishment of large sections because of unplanned economic development and gender inequalities among others. Since India is a country of great socio-cultural and regional diversities, the other important issue is to keep the process of development even and balanced, which is often difficult to achieve.

It is important to discuss some significant trends or challenges that create obstacles in sustaining the process of development. It is noteworthy that most of the trends are characteristic not only of India but the entire South Asia. Depending on the ecological specificities of each of the countries, their governments have developed strategies to address these problems.

### *Population Growth*

The recent trends in population growth in the country are a cause for concern. India’s population has crossed the 1000 million mark some time back and it is the second most populous country in the world and in some decades ahead, will become the most populous. The density of population is very high in some parts of the country. The burden on the country’s resources is unquestionable, especially in the regions with high density of population. The growth of population also has its impact on the increase in the number of the poor and thus, indirectly affects the development process.

There are several further socio-cultural and religious factors in the region that make it difficult to reduce fertility rates to a great extent. One of these is the traditional value placed on children. They are considered as gifts of God and so the people of the older generations still do not comprehend the need for fewer children for better lifestyles. In this context, it becomes even more relevant to focus our efforts on better distribution of available resources. Further, a new

school of thought considers that the problems of development in these countries are not directly an outcome of population growth but rather inequitable distribution of resources. The demographic trends in selected South Asian countries, as per Human Development Report, 2002, are indicated in Table 8.1.

**Table - 8.1**  
**Demographic Trends in Selected South Asian Countries**

		Sri Lanka	India	Pakistan	Bangladesh
Total Population (Millions)	1975	13.5	620.7	70.3	75.6
	2000	18.9	1008.9	141.3	137.4
	2015	21.5	1230.5	204.3	183.2
Annual Population Growth Rate %	1975-2000	1.3	1.9	2.8	2.4
	2000-15	0.8	1.3	2.5	1.9
Total Fertility Rate (per woman)	1970-75	4.1	5.4	6.3	6.4
	1995-2000	2.1	3.3	5.5	3.8
Urban Population (as % of total)	1975	22.0	14.0	26.4	9.9
	2000	22.8	26.4	33.1	25.0
	2015 (projected)	29.9	32.7	39.5	34.4

(Source: Human Development Report, 2002)

The data in the above table reveals that annual population growth in all the four countries shall decline in 2000-15 in comparison to 1975-2000. This is, of course, a healthy trend. However, the migration from rural to urban areas has been on the increase from 1975 to 2000 and is expected to further increase by the year 2015.

### ***Environmental Pollution***

Pollution is the addition to the environment of any substance or energy form (e.g., heat) at a rate faster than the environment can accommodate it by dispersion, breakdown, recycling, or storage in some harmless form. Pollution of the natural environment is a largely unintended and unwanted consequence of human activities in manufacturing, transportation, agriculture, and waste disposal. High levels of pollution are largely a consequence of unplanned industrialisation, urbanisation, and the rapid increase of human populations in modern times.

Pollutants commonly are classified according to the part of the environment primarily affected by them: the air, water, or land. Sub-groupings depend on characteristics of the pollutants themselves: chemical, physical, thermal, and others. Many pollutants affect more than one resource.

#### **(a) Air Pollution**

Air Pollution is a very broad term, which actually covers of different types of pollution. These include Acid Rain, Domestic Smoke, Smog, The Greenhouse Effect, Particulate and Ozone Layer Depletion, each of which has serious consequences for the environment.

Acid rains can cause a lot of damage to lakes and rivers while particulate matter, smoke, and smog can play havoc with the health of people. One of the two problematic long - term consequences of air pollution is the global warming process often referred to as the greenhouse effect that will further degrade plant and animal life. The other is the depletion of the ozone layer that serves as a protective layer in the atmosphere exposing us to harmful radiation.

### **(b) Water Pollution**

Water is one of the most important natural resources for survival of all species. Water covers 71% of the earth's surface and makes up 65 % of our bodies. Like clean air, fresh water is also becoming a scarcity. The limited availability of fresh water and its unequal distribution make water pollution a matter of great concern. Water pollution is generally localised and confined, making it more severe. The pollutants undergo many reactions and can become hazardous. 70% of India's fresh water is polluted, including several high altitude lakes. While water pollution is easier to study and manage, its control is highly complex and very costly. Sources of water pollution are sewage, chemicals from industries, biodegradable waste, nutrients, and wastes from the pharmaceutical industry.

In underdeveloped countries, sewage is a major source of water pollution. Human excreta contain 400 different species of bacteria and viruses. Even well - treated sewage contains pathogenic bacteria and virus, unless properly chlorinated before being discharged into any watercourse. Sewage is a major contributor to water-borne diseases and affects the health of people and other organisms in the environment in many ways. Very high organic loads accompany industrial effluents from sugar factories, distilleries, tanneries and paper industries.

Many wastes are biodegradable, that is, they can be broken down and used as food by microorganisms like bacteria. We tend to think of biodegradable wastes as being preferable to non-biodegradable ones, because they will be broken down and not remain in the environment for very long time. Too much biodegradable material, though, can cause the serious problem of oxygen depletion in receiving waters.

Some pollutants are dissolved in wastewater while others are particulate matter consisting of many larger--but still very small-- particles that are just suspended in the water. Although they may be kept in suspension by turbulence, once in the receiving water, they will eventually settle out and form silt or mud at the bottom. These sediments can decrease the depth of the body of water. If there is a lot of biodegradable organic material in the sediment, it will become anaerobic and contribute to problems mentioned above. Toxic materials can also accumulate in the sediment and affect the organisms that live there and can build up in fish that feed on them, and so be passed up the food chain, causing problems all along the way.

To keep the used water from spoiling our water resources, we have to remove the pollutants before the water gets back into the environment. In urban areas in most developed countries, the wastewater from homes, businesses and factories is collected by a system of underground pipes-- sewers-- that carry it to one or more central treatment facilities. Most of these are located near bodies of water into which the treated wastewater is discharged.

Taking an example of India, it could be stated that it is rich in water resources, being endowed with a network of rivers and vast alluvial basins to hold groundwater. Besides, the snow-cover in the Himalayan range can meet a variety of water requirements of the country. However, with the rapid increase in the population of the country and the need to meet the increasing demands of irrigation, human and industrial consumption, the available water resources in many parts of the country are getting depleted and the water quality has deteriorated. In India, water pollution comes from three main sources: domestic sewage, industrial effluents and run-off from agriculture.

The most significant environmental problem and threat to public health in both rural and urban India is inadequate access to clean drinking water and sanitation facilities. Almost all the surface water sources are contaminated and unfit for human consumption. The diseases commonly caused by contaminated water are diarrhoea, trachoma, intestinal worms, hepatitis, etc. Many of the rivers and lakes are getting contaminated from industrial effluents and agricultural run-off, with toxic chemicals and heavy metals, which are hard to remove from drinking water with standard purification facilities. Fresh water consumption is rising quickly, and the lack of availability of water is likely to become one of the most prominent challenges to sustainable development in the 21<sup>st</sup> century. In one third of the world, people live in countries that are already experiencing moderate to high water shortages.

### **(c) Noise Pollution**

Broadly speaking, any form of unwelcome sound is noise pollution. When considering the effects of noise on human health and quality of life, we have to take into account the intensity of the sound in question, its duration, and the time and place at which it is heard. Sound intensity is usually measured on the logarithmic decibel (dB) scale. The threshold level for the human ear is between 3-45 dB. The decibel is a measure of sound intensity; that is, the magnitude of the fluctuations in air pressure caused by sound waves. In all the developing countries in South Asia, the decibel levels are very high.

### ***Ecological Imbalances***

The discussion on environmental pollution talks of the impact it has on the survival of different forms of life – plant, animal and human. In fact, it is in this context that pollution is the foremost challenge to sustainable development. This in turn has a long-term effect of causing ecological imbalances, a disruption of the natural ecological cycle. Thus, ecological imbalances is caused by:

- Depletion of natural resources, forest cover, wild life, water, agricultural land, livestock; and
- Ecosystem conversion

Depletion and degradation of natural resources is occurring due to the various types of influences. Industrialisation without proper planning, the burden of an increasing population, and increase in vehicular traffic are some of the factors. The aquatic environment and its productively are on the decline. Seventy per cent of the world's commercial fisheries are fully exploited or overexploited and experiencing declining yields. As depletion intensifies, the exploitation of natural resources increases in order to fulfil basic needs of all human beings creating a vicious cycle.

Ecosystem conversion can be defined as the conversion, degradation, fragmentation and simplification of ecosystems for cropping, habitation, etc.

The pace of degradation of cultivable land and grazing land is alarming. Deforestation, overgrazing, faulty agricultural practices and firewood needs have resulted in landslides, flash floods, desertification and water logging. This in turn leads to deforestation, which causes soil erosion. Deforestation is proceeding on significant rate. One fifth of all tropical forest has been cleared since 1960s. According to the Food and Agriculture Organisation (FAO) of the UN, deforestation has been concentrated in the developing world, which lost nearly 200 million hectares between 1980 and 1995. As a result of this, there is flooding during the monsoons and severe water shortage in summer. The frequency of floods has increased not only in India but also in the neighbouring countries of Pakistan and Bangladesh.

The incidence of natural catastrophes/disasters is on the rise in the region. Some of these are earthquakes, cyclones, floods and droughts. They are clearly linked to the intensified exploitation and unplanned use of natural resources. With the occurrence of each of these disasters, there is a further challenge to the even distribution of resources to all humans, increase in poverty and so on. The process of rehabilitation takes up so many resources that development comes to a standstill.

The urban areas represent complex environmental problems. The living conditions of millions of urban poor are such that they pose a threat to their health and have potentially catastrophic social consequences. If these problems are not addressed in an adequate and timely manner, serious environmental and associated health consequences will follow. Burgeoning urban population beyond the carrying capacity of the different components of urban ecosystems, coupled with indifferent urban governance, are the root causes for urban environmental problems. Air pollution in urban areas can be clearly evidenced in the increasing presence of smog. Air pollution can cause chronic and acute respiratory diseases, ventilatory malfunction, heart diseases, and cancer of the lungs and even death. The blood lead levels of persons in Ahmedabad, Bombay and Calcutta have been reported to be higher than the corresponding levels of persons in lead-free gasoline areas.

The rural population uses substantial quantities of non-commercial fuel, that is, crop residues, animal dung or wood. Although their share in total fuel consumption is decreasing, these still provide 80 per cent of rural energy for cooking. Several adverse health effects are suspected to arise due to indoor pollution especially where conventional 'sigri' has not been replaced with smokeless chulha. Respiratory infection in children, chronic lung diseases, lung cancer in adults and adverse pregnancy outcomes, such as low birth weight and stillbirth of the child, for women exposed during pregnancy, are some of the diseases associated with indoor pollution.

### ***Poverty***

Each nation needs its own programme to eradicate such root causes of poverty as hunger, illiteracy, inadequate medical and child care, lack of employment and population pressures. The actions of individual governments must receive support, including financial assistance, because the struggle against poverty is the shared responsibility of all countries. While establishing the relationship with sustainable development, poverty alleviation is essential for environmental sustainability.

When assessed by the gross domestic product (GDP) growth, the countries in the South Asian region are far behind many of the countries of the world. The rates are as follows: Bangladesh – 6.2; India – 7.0; Nepal – 4.0; Pakistan – 5.5; and Sri Lanka – 6.0.

The following Tables show the percentage of population below the poverty line, as per the World Development Report, 2001, entitled “Attacking Poverty”.

**Table - 8.2**  
**Population Below the Poverty Line**

Country	Survey Year	Population Below the Poverty Line		
		Rural	Urban	National
Bangladesh	1991-92	46.0	23.3	42.7
	1995-96	39.8	14.3	35.6
India	1992	43.5	33.7	40.9
	1994	36.7	30.5	35.0
Pakistan	1991	36.9	28.0	34.0
Sri Lanka	1985-86	45.5	26.8	40.6
	1990-91	38.1	28.4	35.3

**Table - 8.3**  
**Population Below US\$ 1 and 2 A Day**

Country	Survey Year	Population Below US\$ 1 A Day	Population Below US\$ 2 A Day
Bangladesh	1996	29.1	31.8
India	1997	44.2	41.4
Pakistan	1996	31.0	84.7
Sri Lanka	1995	06.6	45.4

Table 8.2 reveals that the percentage of population below poverty line is more in rural areas than the urban areas. As per data in table 8.3, 44.2% of India’s population was having income less than US\$ 1 a day in 1997 in comparison to 6.6% in Sri Lanka (1995); 29.1% in Bangladesh (1996); and 31.0% in Pakistan (1996). Percentage of population below income of US\$ 2 per day in Pakistan was 84.7 (1996), 45.4 in Sri Lanka (1995), 41.4 in India (1997), and 31.8 in Bangladesh (1996).

During the Ninth Plan (1997 - 2002), the Government of India has specifically laid emphasis on anti-poverty programmes for generation of both self-employment and wage-employment and has designed programmes accordingly. The efforts are on to rationalise and re-design these programmes in order to make them more effective as instruments of poverty alleviation.

Now, of course, all the South Asian countries have focussed their attention on different measures for poverty alleviation due to various developmental initiatives, which at times appear to be ineffective because of lack of developmental apparatus and other related factors.



### ***Gender Inequalities***

As mentioned in the beginning, an important question in development is the evenness of the spread of its impact. The much existing diversity in our society and economy contribute to the benefits of development reaching the privileged. The privileged include the more prosperous sections, some regions and men. Women in communities - urban, rural or tribal - across the country benefit less from the fruits of development. The burden of work and environmental degradation continues to fall on them and then on children and particularly the girl child. In the long run this has an impact on their status reflecting poorly in terms such as the Human Development Index and raising doubts about the value of development. As per Human Development Report, 2002, the gender-related development index shows Sri Lanka at 10<sup>th</sup> position, India at 105<sup>th</sup> position and Pakistan and Bangladesh at 120<sup>th</sup> and 121<sup>st</sup> position respectively out of the total ranking of 146 countries. Out of the total of 173 countries data surveyed by the UNDP for its Human Development Report, 2002, Gender Empowerment Measure ranks have been accorded to 66 countries. In this ranking, Sri Lanka is at 64<sup>th</sup> rank and Bangladesh at 66 ranks whereas India and Pakistan could not be considered. This speaks amply of the gender insensitivity in South Asia. The gender inequality in education, as per the Human Development Report, 2002, reveals that the female (% age 15 and above) of literacy in the year 2000 was – 89.0 in Sri Lanka, 45.4 in India; 27.9 in Pakistan; and 29.9 in Bangladesh. The female rate as % of male rate in the year 2000 has been – 94 in Sri Lanka, 66 in India, 48 in Pakistan, and 57 in Bangladesh.

### **Health Consequences**

Throughout the discussion in the preceding paragraphs it has been pointed out that each of these have significant consequences on health of humans, animal and plant life. In the long run, this leads to the degradation of the environment posing serious challenges to the sustainability of development and living standards that have been achieved presently. Further, deteriorating health, as seen in several acute and chronic diseases, in itself points to low quality of life often seen as negative to development. The Infant Mortality Rate (IMR) reveals the health status of women in the reproductive age group and the care available for infants to a great extent. The IMR per 1000 live birth has been found as 17 in Sri Lanka, 69 in India, 85 in Pakistan, and 54 in Bangladesh. Whereas it has been the lowest in Sri Lanka, it is the highest in Pakistan among these four nations in the year 2000, as per the Human Development Report, 2002. Likewise, the under-five mortality rate per 1000 live births has been reported as 19 in Sri Lanka, 96 in India, 110 in Pakistan, and 82 in Bangladesh.

There is another important aspect that emerges from the discussion above. Not only the availability of resources but also their distribution makes a difference to the sustainability of environment. Therefore, poverty and gender issues become important. These are the main criteria along with some other socio-cultural ones that impact on the distribution of resources. Planning for sustainable development while directly addressing environmental challenges has to alleviate socio-economic and gender differentials.

---

## **8.4 PLANNING PROCESS FOR SUSTAINABLE DEVELOPMENT**

---

Thus, as we have discussed, there are various obstacles to the process of development and importance of planning for it is, therefore, crucial. There are a

number of issues and factors that have to be kept in mind, while planning the development process and not employing ad hoc measures. This section brings out some of the important aspects that are now seen as indicators of sustainable development.

None of these social and environmental patterns is consistent with sustained growth in an interdependent world over the long term. Given the social and environment processes caused by past developments strategies, the goal of raising human well being world wide must be pursued through a development process that “does better” – a poverty eliminating quality path that integrates social and environmental concerns in pursuit of the goal of sustained improvements in well-being.

### **Indicators in Development Planning**

Indicators of sustainable development are:

- Environmental;
- Economic;
- Social; and
- Institutional.

Environmental indicators including groundwater reserves (cu.m), Industrial/municipal discharges into freshwater bodies (t/cu.m), catches of marine species, Protected area as percentage of total land area, fuel wood consumption per capita (cu. m), Livestock per sq. km. of land, use of fertilisers, arable land per capita, deforestation rate, rate of extinction of protected species, emissions of CO<sub>2</sub> (t) and SO and NO, production of ozone destroying substances, generation of industrial and municipal waste. Economic indicators include GDP growth rate, exports gross, imports gross, reserves of natural resources such as oil, coal and other minerals and annual energy consumption per capita.

Important Social indicators are poverty ratio, unemployment rate, population growth rate, population density, fertility rate, net migration rate, adult literacy rate, % of GDP spent on education, females per 100 males in secondary school, % of people without access to safe drinking water, life expectancy at birth, infant mortality rate (per 1,000 births), % GDP spent on health, incidence of environmental related diseases, Rate of growth of urban population (%) and motor vehicles in use.

Institutional indicators are Programmes for national environmental statistics and indicators for sustainable development and sustainable development strategies. This directly leads us to the steps being taken up for sustainable development and meeting the various challenges to it.

### **Present Endeavours**

There have been planned endeavours towards sustainable development in South Asia to tackle the depletion of resources and mounting problems of poverty, environmental degradation, social inequalities and population explosion. Efforts have been taken up at the following levels:

- National;
- Regional; and
- Local (by NGOs, civil society and community).

Some illustrations of measures towards environmental protection and sustainability:

a) River projects that aim at cleaning and also, checking erosion in the banks

While there are several instances of these, particularly in India, they have to be more consistent and thorough. The water in some of the Indian lakes is so contaminated that it is causing crippling diseases like fluorosis. The river Ganges, considered as one of the holiest rivers of India, is ironically the most polluted too. Even after spending crores of rupees on a 'Clean Ganga Project' the government has miserably failed to clean the river of its pollutants. Yamuna River, which flows through the country's capital city Delhi, is infested with dangerous, pollutants.

- Wildlife sanctuaries are being established in many parts by the governments of these different countries to give endangered wildlife a secure place for survival;
- Afforestation is the positive measure of planting and nurturing trees to stop the ill-effects of deforestation;
- Use of natural gas (the least environmentally damaging of the fossil fuels) and water as sources of energy; and
- Awareness about disposal of wastes and other environmental issues among people in general.

The increasing awareness has led to successful public campaigns against many wrong practices. For instance, the recent campaign by school children against firecrackers during the festival of Diwali. This was done in the city of Delhi because a strong feeling about its polluting effects was generated in them. There have been similar campaigns against the excessive use of plastic and careless disposal of the same.

b) Responsibility of stakeholders –permits and punitive measures such as fines

A good illustration of such an endeavour is industries having pollutants as discharge/effluents from their factories. Industries located in areas where they are not connected to a sewer can discharge directly into a waterway, but need a permit, and may be asked to have their own treatment plants. Even industries, which are connected to sewers, may have to pre-treat their wastewaters before discharging them into the sewers, because they may contain materials, which will harm the sewers or the treatment plants-- or may be a danger to the people who work in maintaining the sewer system.

---

## **8.5 ACTIVITY**

---

1. Try to identify some more indicators of sustainable development from your country.
2. Prepare a list of the levels of government and other organisations that need to work for sustainable development.
3. Try to find out if there is an NGO in your city that is working in the area of sustainable development. Discuss its activities.

---

## 8.6 CONCLUSION

---

There is a strong feeling that the problem needs to be addressed at different levels at the same time in order not to have ad hoc solutions and moving towards sustainable development. Thus, while stricter system of licenses and permits are being developed, there is great emphasis on public awareness. The involvement of the public and community is seen as the cornerstone to success in the efforts towards sustainable development.

Some problems of sustainability are already urgent and require unmediated action. Examples are local eco systems where population is pressing on deeply degraded soils, and forests and water stocks that have been nearly depleted. In such cases, already on the decline and opportunities for correction or mitigation may even have been lost, abandonment of exploring practices and automation may be necessary. The urgency of some of these problems has been over lodged because the people most affected are physically remote from centres of power or because their voices are not heard, or both.

Some issues call for immediate action because there are good prospect for reversing the damage to the environment at relatively low cost, as in taking measures against air and water pollution. Even then, undoing some of the damage of the affected population may not be fully possible. But knowing the health impact does create a moral imperative to protect those affected from further exposure, to compensate them to the extent possible and to prevent other from becoming victims.

The discussion in the unit clearly brings out the need for focussing on the sustainability of development so that, development in some sectors does not lead to other resources being destroyed. The natural environment and its degradation are some of the chief concerns in this respect. Correlates to degradation of the physical environment are the inequalities in society and these also need to be addressed. There are some aspects that need to be kept in mind while planning for sustainable development and there are indicators that help judge our steps towards development.

Another category of issues unfolds over a longer time horizon. The problem may not yet be urgent but the direction of change is unstable. For these, it is essential to get ahead of the curve and prevent worsening crises before it is too costly. Bio diversity and climate change are in this category. There is a need to correct behaviour, but there is also only scope for mitigation, though not for complacency.

---

## 8.7 REFERENCES AND FURTHER READINGS

---

Asian Development Outlook, Asian Development Bank, Oxford University Press, 1998.

Brown, B.J., M.E. Hanson, D.M. Liverman, R.W. Meredith Jr., "Global Sustainability: Towards Definition", Environmental Management, vol. 11(6), 1987.

Brown, Lester R., et al., Vital Signs: The Environmental Trends That Are Shaping our Future, World watch Institute, 1997.

Document on "South Asia Regional Conference on Transition Towards Sustainable Development", February 10-11, 2003, New Delhi.

- Dwivedi, O.P., *India's Environmental Policies, Programmes and Stewardship*, Macmillan Press Ltd., London, 1997.
- Human Development Report, 1999, Oxford Press, New Delhi, 1999.
- Human Development Report, 2002, Oxford Press, New Delhi, 2002.
- Rao, P.K., *Sustainable Development: Economics and Policy*, Blackwell, London, 2000.
- “Sustainable Development – A Gateway”, Home Page, EMCP Project, MOEF, New Delhi, 2002.
- World Development Report 1992: *Development and the Environment*, Oxford University Press, New York, 1992.
- World Development Report 2001, Oxford, New York, 2001.
- World Development Report 2003, *Achievement and Challenges: Sustainable Development in a Dynamic World – Transforming*, Oxford University Press, New York, 2003.