Chapter Three

SUSTAINABLE CONSUMPTION AND DEVELOPMENT: NATURE, SCOPE AND ORIGIN IN ANCIENT AND MODERN PERSPECTIVE
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SUSTAINABLE CONSUMPTION AND DEVELOPMENT: NATURE, SCOPE AND ORIGIN IN ANCIENT AND MODERN PERSPECTIVE.

(A) Introduction

Foregoing chapter explains the significance of environment. In this chapter environment is defined with various points of view. Causes of environmental degradation and their effects on nature estate, i.e., air, water, land, and property and human beings, living organism, non living organism, and micro organism.

There are various reason which result into environmental degradation, namely, population growth; urbanization; industrialization; commercialization etc. the rapid growth of human civilization, expects most of natural resources available.

Consumption of natural resource is going through the necessity and appetite of human beings. Needy consumption is good, greedy consumption is very dangerous to the natural world. This phenomenon lowers the quality of natural environment hence. This must be sustainable consumption which is analogues to the natural niche; before dealing with the sustainable consumption. The term "consumption" must necessary to know.

Consumption has led to improve material living standards; private motor cars television sets, over seas holidays, new designer fashions, restaurant meals etc-at least for those who can effort to consume\textsuperscript{1}.

However it does not necessarily lead to a sustainable way of life.

\textsuperscript{1-} http://www.unesco.org/education/tlsf/TLSF/theme_b/mod09/uncom09.htm

10/14/2009

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The tussle between these positive and negative effects of consumption is a major influence on the transition to sustainable future: "currently some trends appear positive: the growth in world population is slowing, food production is still rising, the majority of people are living longer and healthier lives, environmental quality in some regions is improving. But it is impossible to ignore other trends which have the potential to under mine these gains or even bring about catastrophic collapse of local economies. They include the growing scarcity of fresh water, loss of productive agricultural land and the downward spiral of impoverishment affecting a significant minority of the world's population. These threats are real and near-term; they already affect millions of people."

Positively the consumption of natural recourse is essential to human life all around the world. The air, water, energy, timber, food and other resources that come from nature are the basis of, and sustained, all human activities. We live by producing, processing and then consuming these products of nature.

Behind aforesaid truth the rate of resource consumption is rising rapidly in the world. Thereby many adverse social economic and ecological impacts of over consumption are in existence. Increase in consumption is driven by following factors:

i) global population growth;
ii) rapid economic growth;
iii) change in life style by urbanization;
vi) technological change by creating new patterns of human needs and wants;

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alienation of the spirit resulted from the lack of meaningful contract with
nature;

The term consumption denotes the utilization of material things as well as
of natural things utilization of material things is not the subject matter of this
task because it deals with the consumerism where prepared goods produced by
industrial sector are expected to be high quality in consistent with the names
of market. The object of this movement is to protect the rights of consumer to
consume qualitative products.

Dislike the considerable from consumption for instant task is absolutely
relate with environmentalism in which two aspects are visible, first is natural
resources must be consumed sustainable; secondly, rights of environmental
consumers must be protected this crucial aspect of environment movement
emphasizes the proliferation of the concept of sustainable consumption.

(B) Sustainable consumption -:

From time immemorial wanting nature of human beings is classified into
three categories: no wants, wants, ad less wants. This attitude was explained as
human quality in holy Hindu script ShrimadBhagvad Geeta by lord Krishna
in this sense, as under-

(a) i Sato Guna this denotes the sanctity human activities towards natural
resources. human being having this quality nourishes the natural world for
entire creatures without expecting anything.

ii Rajo Guna- this denotes greedy attitude of human being increasing this quality selfishness, greed, initiation of the sense of kama, disturbance, and will to live lusty life increased.

3 - तस्याः सर्वायमां श्रीमद्रज्ञानमिः गीता -14/6
4 - रजो रक्षणं विश्व शुरुवासुरस्वमेव गीता-14/7
iii Tamo Guna\(^5\) - this denote the guzzled nature of human beings. Increased in this quality the intuitive and senses of body engulfed the human being into unwanted wants, un necessary accumulation hate to other beings and aggressive to worlds natural resources.

These golden concepts are considerable and well applicable in modern men. Sato Guna is now sustainable consumption, Rajo Guna is need and Tamo Guna is guzzling. Among these qualities Sato Guna, i.e; sustainable consumption is curious demand of time.

i satisfying basic human needs not the desire for want and luxuries;

ii favoring quality of life over material standards of living.

iii minimizing resource use, waste and pollution;

iv taking a life - cycle perspective in consumer decision making and.

v acting with, concern for future generations.

There are many definitions of sustainable consumption, but most of them emphasizes on:

In including sense this is a definition proposed by the 1994 Oslo symposium on sustainable consumption as mentioned under-

"The use of services and related products which respond to basic needs and bring a better quality of life while minimizing the use of natural resources and toxic materials as well as emissions of waste and pollutants over the life cycle of the service or product so as not to jeopardize the needs of future generations.\(^6\)

Nick Robins and Sarah Roberts of the international institute for environment and development suggest that a comprehensive definition of sustainable consumption need to be grounded in a wider range of environmental, social

\(^5\) तथों: प्रृत्तितलर्यात: करूणांनाहन: स्वहाणात: जस्मैता जायपच बिनुङः मल्लकाल: || गीता -- १४/१२

equity and moral concerns. They summarized these as below –

(b) i Environmental damage:-

The extraction, production, use and disposal of many goods and services cause serious environmental problems such as resource depletion, energy wastage, pollution of the air, water and land, and growth in the levels of solid, toxic and hazardous wastes.

ii poverty

while many people around the world, especially in the north, live lives of abundance and affluence, over a billion people still lack access to supplies of safe water, adequate sanitation, energy and nutrition.

iii Health

The production of many consume goods cause extensive damage to human health through air and water pollution. While population is a major cause of premature death in the south, many diseases in the north are now considered ‘lifestyle’ diseases with people dying from the over-indulgence brought on by affluence.

iv Economic efficiency

conventional development models have sought to compensate for the above problems by attempting to incorporate more people into consumer economy through economic growth (the proverbial ‘bigger cake’). This has often been at the expense of changes in the distribution and pattern of consumption, which can be more cost-effective and resource efficient.

v Global environmental change

industrial, commercial and domestic energy use, especially in the transport sector, is the major source of greenhouse gases while air-conditioning and refrigeration are significant causes of ozone
depletion. These global environmental threats can be addressed by changes in the design and construction of buildings and transport systems.

**vi Quality of life**

Increasing material affluence does not necessarily lead to a better quality of life due to the degradation of the human environment and the erosion of social relationships that it can bring.\(^7\)

In this way considering above defined principle the significance of sustainable consumption may be explained in the following rout. "sustainable consumption integrates a range of social, economic and political practices at the individual, house hold, community, business and government levels that support and encourage:

- reducing the direct environmental burden of producing, using and disposing good and services;
- meeting basic needs for key consumption goods and services, such as food, water, health education and shelter;robins,n. and Roberts,
- maximizing opportunities for sustainable livelihoods in the south;
- consuming goods and services that contribute positively to the health and well-being of women and children;
- increasing the development and adoption of energy and water efficient appliances, public transport and other demand-side measures;

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the production and sale of new goods and services adapted to
global environmental constraints; and
• lifestyle that place greater value on social cohesion, local traditions
  non-material values\textsuperscript{8}.

In biodiversity research five important groups of pressures have been
identified leading to biodiversity loss (in this order):

i land use changes
ii biological pollution (in-vasive).species’ GMOS
iii climate change(the instant talk issue)
iv. chemical pollution.
v. pollinator loss (an intermediate)
sustainable consumption can and Should contribute to reduce these pressures.\textsuperscript{9}

Sustainable consumption is unnecessarily ingredients of sustainable
development, if natural resource is consumed sustainably. The object of the
concept of sustainable development can be absolutely achieved. The, terms
development is a qualitative allegation which demands the protection of the
quality of environment and to prevent control and abate the environmental
pollution.\textsuperscript{10}

Greedy and guzzled withdraw and exploitation of natural resources
lower the capacity, capability, quality and quantity of environmental assets
and entire creature of the world. In this way sustainable consumption is that

\textsuperscript{8}http://www.unesco.org/education/itsf/themeb/mod09/uncom09t06bod.htm 7/1/2009
\textsuperscript{9}supra note 7 at-9s
\textsuperscript{10}section-3 the environment[ protection] act 1986

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phenomenon under the concept of sustainable development, which is
grounded in the theme of ‘viswam bhadram. Kuruvantah and sarve bhavantu
sukhinah sarve santu nira mayah’. to eliminate pride, greed, lust and like
elements Gandhi ji expounded many

weapons, namely non violent system, class-collaboration or class-co
operation, harmony of interest bread labors., minimization of wants and vision
of trustiship at last resources are the bounties of nature rich and enough, to
supply the legal need for the sustainable consumption hence sustainable
consumption imposes the bounden liability on each and every generation to
sustain and maintain the natural niche. Indeed sustainable development is
sustainable on various principle as discussed further.

Indeed sustainable consumption is originated from the popular definition
of sustainable development made my brundtland in 1987. He defined
sustainable development as “development that meet the needs of present
without compromising the ability of future generations to meet their own
needs.”

Thus environmentalism alone can not sufficiently address sustainability
(also not in a sustainable consumption context), and even less so can a focus on
eco efficiency this has two prominent implication: first- that environment “;
limits” in the quest for sustainable on social organization and technology and
that needs must be met, i.e. that there is only maximum for sustainable
consumption, but also a minimum to resource availability necessary for leading
a dignified life.

11 – विश्वामित्र कूचाकल्ते। रिपोर्ट 9/63/5
12-Ramajois seeds of modern public law in ancient India, jurisprudence lledn.200/at 173.[quoted]
13-Kumar,s.b. environmental problem ad Gandhian solution 2002 at -44.
14-Brundtland report of the Wcsd [united nation, 1987] at 43,
secondly- as for the environment and for biodiversity as a part of it, it does not matter how much wealth has been created while destroying it: what counts is absolute, not relative impacts constituting the need for either a decrease of consumption or an absolute decoupling of consumption and environmental impacts\textsuperscript{15}

Doctor Joachim h. has suggested strong environment biases as under\textsuperscript{16} –

i efficiency – do not waste

ii sufficiency- do not squander

iii consistency – do not disturb

He clarifies that sustainable production is most often focused on efficiency sustainable consumption most often refers to sufficiency. Biodiversity is most affected by consistency, but also by sufficiency for the latter aspect, a contribution of changing consumption patterns to biodiversity preservation could be a focus on least entropy consumption”, including a reduced size of material flow cycle\textsuperscript{17}.

Sustainable consumption is considered in various ways post modernist call it the latest middle class moralize neo- Marxists call it a bourgeois green herring that diverts attention from where the real conflict lies in production. Socialists views it as essential for solving the dilemma of balancing economic prosperity with ecologic vitality and social justice.

\textsuperscript{15} -Spangenberg Joachim. [Dr.] Biodiversity and sustainable consumption: a qualified analysis and unqualified suggestions a publication of the northern alliance for sustainability, ANPRD, jan 2008 at 4-5
\textsuperscript{16} - ibid at- 5
\textsuperscript{17} -ibid
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On the subject of "sustainable consumption and society" at small working conference sponsored by research committee 24 on environment and society (RC 24) of the international sociological association and co sponsored by the department of rural sociology and the agro ecology programme at university of Wisconsin – medicine RC 24 organized this conference in testament to the growing interest in sustainable consumption among social scientist. The conference was held or june 2-3, 2006.

This conference has four themes. These four themes are enumerated elaborately 18 in fourth chapter.

(C) SUSTAINABILITY:

The term sustainability originates from the Latin word ‘sustinere’ which means ‘to hold up’, ‘to endure’.

The Oxford Reference Dictionary (1986) refers sustain as ‘endure without giving way”, “to support especially for a long period:

The meaning given by Collins Dictionary (1979) is ‘to maintain’, ‘to support’.

Similarly, Webster’s New Collegiate Dictionary (1975) describes sustainability as “to give support’, ‘to keep up’, ‘prolong’.

From these one can infer that the general meaning of sustainability is to maintain or support a programme / project for a long period.

The term ‘sustainability’ describes the ability of a project to maintain an
acceptable level of benefit flows through its economic life. While this may

often be expressed in quantitative terms involving the internal economic or financial rates of return, benefits may also be qualitatively assessed. For projects in the productive sector, such as industry, the principle measure of performance is output, generally expressed in terms of capacity utilization, but the Bank supported projects normally have technology transfer and institution building, which must be assessed qualitatively.\(^{19}\)

Moreover sustainability is a relative concept which must be assessed in terms of a set of indicators which combine different quantitative and qualitative aspects of project performance.

Bambeger and Cheema are of the view that “project sustainability is the capacity of a project to continue to deliver its intended benefits over a long period of time”.\(^ {20}\)

The degree of sustainability of a project has been defined by Honalde and Van Sant, “as the percentage of project initiated goods and services that is still delivered and maintained five years past the termination of donor resources, the continuation of local action stimulated by the project and the generation of success or services and initiatives as a result of project built local capacity”.\(^ {21}\) They further state that one should visit the project site five years after its termination to determine the magnitude and nature of the inheritance

\(^{19}\) The World Bank, Operations Evaluation Department, Washington D.C., The World Bank, 1986

\(^{20}\) M. Bamberger and S. Cheema, Case Studies or Project Sustainability: Implications for Policy and Operation from Asian Experiences, Washington D.C., EDI, World Bank, 1990

left behind.

Conway defines sustainability as "the ability of a system to maintain productivity inspite of a major disturbance such as that caused by intensive (maintained) stresses or large perturbation ... Satisfactory methods of measuring sustainability have still to be found, however, lack of sustainability may be indicated by declining productivity but, equally, collapse may come suddenly and without warning". 22

Pearce defines sustainability as "leaving the same or improved resources endowment as a bequest to the future ... (that is) the total stock of all forms of wealth (including environmental wealth) must not be depleted." 23

The World Conservation Strategy (1980) defined sustainability as "the management of the human use of the biosphere so that it may yield the greatest sustainable development to present generations while maintaining the potential to meet the needs and aspirations of future generations" 24.

While discussing the factors affecting project sustainability's Bamberger and Cheema view that "the sustainability of any project is defined as being affected by three broad groups of factors: (i) how the project is designed; and implemented; (ii) how the project is organized; and (iii) the external factors operating at the local national and international levels" 25. They are also of the

24. Quoted by Bamberger and Cheema, op. cit.
25. Bamberger and Cheema, op. cit
opinion that focusing sustainability on individual projects and ignoring the impact of the projects on broader development objectives would be misleading and any meaningful analysis must focus on the broader issues of sustainable development.
(i) DEVELOPMENT:

Development describes the growth of humans throughout the lifespan, from conception to death. This includes all aspects of human growth, including physical, emotional, intellectual, social, perpetual and personality development.

Development means "improvement in a country’s economic and social conditions", more specifically it refers to improvements in ways of managing an area’s natural and human resources in order to create wealth and improve people’s lives.

Development is a multi-dimensional phenomenon. It involves a progressive transformation of economy and society. The satisfaction of human needs and aspirations is the major objective of development. In 1950s and 1960s development was regarded as the concept of growth in an economic framework and confined to economic aspects only. Development was treated in a branch of science of economics. The 1970s gave rise to a new concept of development where the environmental issue is not seen in a separate sector but as an inherent aspect of development\(^{26}\). Now it is fully realized in national governments and multilateral institutions that it is impossible to separate economic developments issues from environmental issues as many forms of development rode the environmental resources upon which they must be based and environmental degradation can undermine economic development.

Many present development trends leave increasing numbers of people

poor and vulnerable while at the same time degrading environment. How can such development serve next century’s world of twice as many people relying on the same environment? This realization broadened the concept of development. And thus development came to be seen not in its restricted context of economic growth in developing countries but as one that sustained human progress.

(ii) ENVIRONMENT AND DEVELOPMENT

The relationship between environment and development has been under discussion since the beginning of the 1970s. Previously, it was thought that environmental problems were confined to the need to reduce pollution, while development was equated with an increase in GNP. Since then it has been realized that environmental and developmental objectives and strategies are not incompatible; what is required is a firm resolve to plan and organize efforts to develop and protect the environment on a comprehensive integrated basis, in order to satisfy basic human needs, improve living conditions and ensure the national management of resources and the environment. It follows from this realization that countries do not have to choose between development and the environment, but should choose the quality or type of development that suits them; the environment is an aspect to be borne in mind when the development model is selected.

It is probably however that development with the advance of science and technology will have a profound impact on the environment. It will, therefore, be necessary to take remedial action which within the framework of planned development, should take account of the interaction between social life and the
bio-physical environment in order to preserve and strengthening the balances essential to constant improvement of living conditions.

Development and environment are not two conflicting concepts. It is perfectly feasible to establish a complementary relationship between them. The environment is a constraint to be borne in mind, but it is first and foremost a potential to be developed imaginative and rationally. A development process in which the environmental factor is taken into consideration should satisfy the fundamental needs of the people. Such an approach rejects economic growth for the sole benefit of a privileged sector of the World’s population and avoids misusing ecosystems and inflicting harm on others.

Development is essential for socio-economic upliftment and progress. We have been engaged in development without examining its repercussions on environment and thus we could not be successful in our mission. The proper environmental management requires that society and man’s demands should be so regulated that natural environment is able to sustain the need for development.

Development without regard to environmental consequences cannot be sustained and defeats the very purpose of development by aggravating poverty and unemployment. Development without regard for ethics and environment has produced many harmful effects.27

27 Manas Chatterji, *Environment and Health in Developing Countries*, 1993, p. 3
(iii) CONCEPT OF SUSTAINABLE DEVELOPMENT

The world is currently exploring the concept of sustainable development, an approach that will permit continuing improvements in the present quality of life, at a lower intensity of resource use, thereby leaving behind for future generations an undiminished or even enhanced stock of natural resources and other assets. While no universally acceptable practice definition of sustainable development exists as yet there is increasing agreement that it should incorporate three critical elements, economic, social and environmental in a balanced manner.

The economic approach to sustainability is based on the concept of the maximum flow of income that could be generated while at least maintaining the stock of assets (or capital) which yields these benefits. There is an understanding concept of optimality and economic efficiency applied to the use of scarce resources. Problems of interpretation arise in identifying the kinds of capital to be maintained (for example, manufactured, natural and human capital) and their substitutability, as well as in valuing these assets, particularly ecological resources. The issues of uncertainty, irreversibility and catastrophic collapse pose additional difficulties.

The social concept of sustainability is people oriented and seeks to maintain the resilience of social and cultural systems and their ability to withstand shocks. Greater equity and the reduction of destructive conflicts are important aspects of his approach. Preservation of cultural diversity and

28 Ibid.
29 Ibid. at p. 4
cultural capital across the globe, and the better use of knowledge concerning sustainable practices embedded in less dominant cultures, are desirable. Modern society would need to encourage and incorporate pluralism and grass roots participation into a more effective decision making framework for socially sustainable development.

The environmental view of sustainable development focuses on the resilience of biological and physical systems. Of particular importance is the viability of subsystems that are critical to the global stability of the overall ecosystem. Furthermore "natural" systems and habitats may be interpreted broadly to also include man made environments like cities. The emphasis is on preserving the resilience and dynamic ability of such system to adapt to change rather than conservation of some ideal static state. Natural resource degradation, pollution and loss of biodiversity reduce system resilience.

Reconciling these various concepts and operationalizing them as a means to achieve sustainable development is a formidable task since all three elements of sustainable development must be given balanced consideration. The interfaces among the three approaches are also important. Thus the economic and social elements interact to give rise to issues such as intragenerational equity (income distribution) and targeted relief for the poor. The economic environmental interface has yielded new ideas on valuation and internalization environmental impacts. Finally the social environmental linkage has led to renewed interest in areas like inter generational equity (rights of future generations) and grassroots participation.

In seeking to integrate the three approaches in a practical way, it is useful to recognize that most development decisions continue to be based on
the economic efficiency criteria. For example, economists, attempt to incorporate environmental concerns into decision making by valuing environmental resources in monetary terms and ensuring that resource prices reflect their scarcity values. Similarly, economists have addressed social equity concerns by placing special emphasis on costs and benefits accruing to the poor by ensuring that those who impose costs on others pay commensurate charges, and more recently, by seeking to protect productive assets for future generations.

Sustainable development was put forth as an approach to grapple with the increasing environmental problems. Although it was the World Commission on Environment and Development (WCED) which brought the concept to limelight, it was espoused earlier in the world of conservation strategy. The WCED perhaps engineered the needed international endorsement for the approach. According to WCED (1987) sustainable development implies meeting the needs of the present without compromising the ability of the future generations to meet their own needs.

Sustainable development is a process in which development can be sustained for generations. It means improving the quality of human life while at the same time living in harmony with nature and maintaining the carrying capacity of the life supporting ecosystem. Development means increasing the society’s ability to meet human needs. Economic growth is an important component but cannot be a goal in itself. The real aim must be to improve the quality of human existence to ensure people to enjoy long, healthy and fulfilling lives.
Sustainable development focuses at integration of development and environmental imperatives. It modifies the previously unqualified development concept. To be sustainable, development must possess both economic and ecological sustainability the concept of sustainable development indicate the way in which development planning should approached.

The concept of Sustainable Development emerged as an important theme in 1987. The Brundtland Commission on Environment and Development in its report our common future called for all development initiatives. "In order for development to be sustainable, it must meet the needs of the present without compromising the ability of future generations to meet their own needs", said the Commission.

This definition is highly generalized and hence has been subjected to a variety of interpretations. Broadly speaking, developed countries lay emphasis on economic and technological aspects. How to integrate environmental costs into economic decision making competitiveness and employment opportunities. The general feeling is that the current development / growth processes can continue provided the technological innovations are rapid and appropriate enough to reduce environmental side effects.

In contrast, the perspectives of developing countries are understandably different. In their view poverty is the greater polluter of environment and hence they must accelerate economic growth to meet the basic needs of the people. And if the industrialized rich countries are really serious about environment, they should realize that it is they who have created the present environmental crisis and not the poor countries, and hence they should assist the latter with
finance and latest environment friendly technological knowhow to promote economic growth\(^{30}\)

Interestingly, both sides have a firm faith in economic growth and all that goes with it, such as industrialization, urbanization, and environmental determination. Both pin their hopes in science and technology to solve the emerging problems. It is simply the question of access to resources particularly finances and technology. One wants to maintain the status quo, i.e. its economic and technological superiority and competitiveness; the other wants it more egalitarian. The means for achieving the goals are the same.

Sustainable development is defined by UNDP in its Human Development Reports 1991 as,

"Development that improves health care, education and social well being. Such human development is now recognized as critical to economic development is now recognized as critical to economic development and to early stabilization of population. It further states that "men, women and children must be the centre of attention with development woven around people, and not people around development"\(^{31}\)


Goodland and Ledece stress that “using renewable natural resources in a manner that does not eliminate or degrade them or otherwise diminish their ‘renewable’ usefulness for future generation as sustainable development”.  

Barbier while defining sustainable development, focuses on “optimal resource management, by concentrating on maximizing the net benefits of economic development, subject to maintaining the services and quality of natural resources”.

World Conservation Union defines sustainable development as “improving the quality of human life while living within the carrying capacity of supporting eco-systems.” This report focuses on sustainable development as a process requiring simultaneous global progress in a variety of dimensions: economic, human, environmental and technological.

The 1992 UNDP Report states: “Sustainable development is a process in which economic, fiscal, trade, energy, agriculture and industrial policies are all designed to bring about a development that is economically, socially and ecologically sustainable”.

[D] ORIGIN OF SUSTAINABLE DEVELOPMENT

India has a long tradition of protecting and worshipping the nature. India has a very rich tradition of concern for and protection of environment. The environment includes all parts of nature necessary for health and happiness of man. Nature reserves immense potential to maintain ecological balance. Not

34 United Nations Development Report
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only the beauty but the very existence of life depends on nature\(^{35}\). Our ancestors were worshipping the five elements of nature (Fire, Air, Earth, Sky and Water) as panchabhutas, because worship was a form of the greatest admiration for them in nature\(^{36}\).

Nature and its resources have the adequate capacity to feed and bear the burden of the requirements of the mankind. Once these resources are overburdened due to the undue pressure of human activities, it disturbs the equilibrium relationship between the man and the nature necessary for human existence. Consequently it gives rise to the problem of environmental pollution\(^{37}\). It is really depressing to note that the water we drink, the air we breathe all are polluted.

Environmental protection during the last few years has become not only a matter of national concern but of global importance. In India, there is also show a great concern for environment degradation since the Vedic era. Sustainable environment was an in built phenomenon ever since the Vedic times.

The history of the evolution of law to handle pollution and other environmental problems in India can be studied under these following periods:

(i) Environmental Protection in Ancient India

Nature is God and God is nature. That's how our ancient sages and wisemen

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treated our natural environment in all her glory. Ancient civilization have never been sacrificed nature to speculation, but holding it as divine, have honoured her natural beauties by the erection of works of art. Solace of nature is what they had uppermost in there minds, which we too despite the fast pace of modern life, should aim to imbibe.

Since Vedic time the main purpose of social life was to ‘live in harmony with nature’. Sages, Saints and Gurus of India lived in forest, meditated and expressed themselves in the form of Vedas, Upanishads, Smritis and Dharmas. In olden times, people attitude towards plants, trees, mother earth, sky, air, water, and animals and to keep a benevolent attitude towards them. Trees, animals, hills, mountains, rivers are worshipped as symbols of reverence to these representative samples of nature. Therefore cutting of trees, polluting air, water, land were regarded as sins as elements of nature were to be respected and regarded as gods and goddesses. Rigveda\textsuperscript{38}, Manusmriti\textsuperscript{39}, Charak Samhita\textsuperscript{40} have emphasized on the purity of water and healing and medical value of water. Similarly, trees and plants have been regarded as indispensable in the life of human beings. Rigveda devoted one entire hymn to the praise of healing properties of trees\textsuperscript{41}. Several Hindu Gods and Goddesses have animals and birds as their mounts. Due to such extraordinary awareness regarding the nature and ecological equilibrium India was the most advanced country of the world at that time. It was considered to be a part of our traditions and cultural values not only to protect the environment but also maintain the ecological equilibrium.

\textsuperscript{38} Rigveda VII, 42
\textsuperscript{39} Manusmriti IV, 56
\textsuperscript{40} Charak Samhita VI Manusthana III 6 (1)
\textsuperscript{41} Rigveda X, 97
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Therefore, from the foregoing discussions, it is evident that the people of India had a very close relationship with plants and trees, the forests have a profound contribution in the diurnal life of a human being. Hence plants and trees must be treated as a part of one’s family.

(ii) Environmental Protection in Medieval India

It is noteworthy that the Indian peninsula suffered substantial ecological loss due to destruction of forests resulting from political instability that prevailed in the country for over nine centuries that elapsed between the fall of Gupta dynasty in the latter years of the seventh century and the consolidation of the Moghul empire by Akbar about the close of the sixteenth century.

During the Moghul period environment conservation did not receive much attention. The Moghul emperors, though were great lovers of nature and took delight in spending their spare time in the lap of natural environment, made no attempts on forest conservation\textsuperscript{42}. They did not even realize the need. To Moghul ruler, forests meant no more than wooded lands where they could hunt. To their governors the forest were properties which yielded some revenue. A few species of trees were specified in their reign, as ‘royal trees’ and enjoyed patronage from being cut except upon a fee. There was, however, no restriction on cutting of other trees. In the absence of any protective management, forests during this period shrank steadily in size on account of fellings made for cultivation both shifting and settled.

From environment conservation point of view, a significant contribution

\textsuperscript{42} Washid Hussain, Administration of Justice during the Muslim rule in India
of Moghul emperors has been the establishment of magnificent gardens, fruit orchards and green parks, round about their palaces, central and provincial headquarters, public places, on the banks of the rivers and in the valley and dales which they used as holiday resorts or places of retreat or temporary headquarters during the summer season. The famous Moghul gardens which do every nook and corner of the country even today are thus a pleasant cultural heritage of the Imperial Moghals. Additionally, the religious policy of Akbar based on principle of complete tolerance also reflects concern for protection for birds and beasts in so much so as endeavours were taken during his reign to stop their unnecessary killing. The religious policy of Akbar was pursued in principle though sometimes differing in details, by Jahangir and Shah Jahan.

As regards the position of forest economy during the Moghul empire the rural communities by and large, enjoyed untrammeled use of forests and wastes in their vicinity. The waste and forest lands were treated as open access resources. The native rulers, however, did subject the produce of the forests (such as medicinal plants) to a small cess as and when these were exported. The products of the forests conserved by the local people themselves were exempted from cess. Untrammeled use of forests and other natural resources, however, did not mean that they could be used or misused by one and all without any restraints. Rather they were quite effectively managed with the help of a complex range of rules and regulations woven around the socio-cultural features as well as the economic activities of local communities.

(iii) Environmental Protection during the British Period

The environmental policy in pre-independence era is principally reflected in the resource conservation, particularly, the forest conservation and
the wildlife.

The British Government declared its first Forest Policy be a resolution on the 19th October 1884. The policy statement had the following objectives:

1. Promoting the general well being of the people in the country;
2. Preserving climatic and physical conditions in the country; and
3. Fulfilling the need of the people.

The policy also suggested a rough functional classification of forest into the following four categories:

1. Forests, the preservation of which was essential on climatic or physical grounds;
2. Forests which offered a supply of valuable timber for commercial purposes;
3. Minor forests which produced only the inferior sorts of timber; and
4. Pastures which were forests only in name.

To implement the Forest Policy of 1884, the Forest Act of 1927 was enacted. This Act was very comprehensive and contained all the major provisions of the earlier Act and the Amendments made thereto including those relating to the duty on timber.

In 1935, the British Parliament through the Government of India Act 1935 created provincial legislatures and the subject of the forest as included in the provincial legislative list. Thereafter, several provinces made their own laws to regulate forests. Most of these laws were within the framework laid
down in the 1927 Act.

Apart from the management of forest resources the British Government also concentrated on certain other areas like water pollution, air pollution, wildlife and land use by enacting numerous legislations.

The Shore Nuisance (Bombay and Kolaba Act of 1353, Oriental Gas Company Act, 1857, the Indian Penal Code, 1860. the Indian Easement Act of 1862, the Indian Fisheries Act. 1897 were some of the important legislations made by the British Government. These legislations contained provision for the regulation of water provision and also prescribed punishments for the violation of these legislations.

The British Government for controlling Air Pollution enacted the Bengal Smoke Nuisance Act of 1905, and the Bombay Smoke Nuisance Act of 1912.

Likewise, for protection of wildlife the British Government made certain legislations. In 1873, the then Madras Government enacted the first wild life statute for the protection of wild elephants. The Elephants Preservation Act of 1879, The Wild Birds and Animals Protection Act 1912 and the Forest Act 1927 were other legislations which aimed at conservation of bio-diversity.

From the above it is clear that legislative measures were taken by the British Government or prevention of pollution and for conservation of natural resources. Though the critics point out that the British enacted these legislations not with the object of protecting the environment but with the aim of earning revenue for themselves, it should be regarded as the first step towards conservation of natural resources. Though made with ulterior motives these legislations have contributed significantly the growth of environmental
(iv) Environmental Protection during the Post-independence Era

The post independence era witnessed a lot of changes in the policies and attitudes of the Governments with respect to environmental protection. The Constitution of India, which came into force on 26th January 1950, had few provisions regarding environmental management.

At commencement of Indian Constitution, Constitution Assembly did not pay any specific attention towards the protection of environment. In the entire debates one finds hardly any specific reference of balancing ecosystem with the development process. There were provisions which may be said to have relation with environment. The fundamental right to carry on any trade or business or to hold property or the right to property may seem to be an antithesis to maintain the natural environment. But the state had the power to balance them in the public interest.43

The issue of environment and development did not receive any significant recognition in the planning process until 1968. The year 1972, marks a watershed in the history of environmental management in India. Prior to 1972, environmental concerns such as sewage disposal, sanitation and public health were dealt with by different ministries of the Government of India and each pursued these objectives without any proper co-ordination system established at the federal or the inter governmental level.

43 P. Leela Krishnan, Law and Environment, 1992, p. 7
In pursuance of 24th U.N. General Assembly Conference on Human Environment in 1972, India setup a Committee on Human Environment under the Chairmanship of Pitambar Pant, member of the Planning Commission, to prepare the reports on the state of the Environment. The reports indicated the need for establishing greater coordination and integration in environmental policies and programmes, so in February 1972 a National Committee on Environmental Planning (NCEP) was established in Department of Science and Technology. The NCEPC was an apex advisory body in all matters relating to environmental protection and improvement.

Until the fifth general election of 1977, none of the political parties India considered environmental problems worthy of inclusion in their election platforms. Since then, a number of environmental controversies viz. Silent valley, Mathura Refinery and acid rain on Taj Mahal have raised public concern. Gradually environmental problems are acquiring status.

When Congress-I came to power after Jan. 1980 general election immediately set up a committee chaired by N.D. Tiwari to recommend legislative measures and administrative machinery to ensure environmental protection. It recommended the creation of a Department of Environment and the center that could explicitly recognises pivotal role of environmental conservation in sustainable national development.

On the basis of the recommendations of Tiwari Committee, a separate, Department of Environment was established on November 1, 1980.

Also on the recommendation of the Tiwari Committee the NCEP has been replaced by a National Committee on Environmental Planning (NCEP) similar to its predecessor.
The NCEP was formed in April, 1981 with authority to prepare an annual "State of Environment" report; to arrange public hearing of conferences on significant environmental issues, and to establish a nation wide Environmental Information and Communication System to propagate environmental awareness through mass media. Since these issues in addition to its management functions, overlap in some respects with Department of Environment, there is the possibility of one agency being relegated to a subservient role.

[E] ELEMENTS OF SUSTAINABLE DEVELOPMENT

The concept of sustainable development has taken a concrete stage because natural resource base is continually under a state of stress and degradation. The concept of sustainability lies in maintaining harmony between meeting basic human needs along with emphasis on protection and conservation of natural resources. The World Commission on Environment and Development (1987) considered sustainable development as the ability to meet the needs of the present generation without compromising the ability of future generations to meet their needs. In fact, any economic activity that continues without a healthy balance between the natural resources, its ecology and environment shall result in sustainable development. Hence, the earth, ecology and environment are the three central concerns of sustainable development. Now-a-days, challenges before us are not only how to exploit our natural resources but also how to conserve and sustain our environment.

As a result of unprincipled use of natural resources, the component of environment is getting impaired raising thereat to survival of human being. Soil is impoverished, water and air are polluted and there is an increase in intensity of genetic erosion in plants and animals. Even the climate is getting
irreversibly altered due to global warming and greenhouse effect. The fundamental changes in the 21\textsuperscript{st} century are to find ways for sustainable development and that are environmentally sound.\textsuperscript{44}

Human beings are increasingly anxious about this life-support systems and about the quality of their environment, the side effects of resources used are now far more widely acknowledged than a generation ago. The state of environment and the use of environmental resources have become political issues at local, national and international levels \textsuperscript{45}.

The concept of sustainable development emphasizes a balanced relationship between ecology, economy and social life for current and future generations. Sustainable development the easiest approach is that we, the present generation, have inherited a certain amount of ecology and environmental surrounding in terms of land, water and air, when we leave it to the next generation, we should leave it at least in the same condition.

Sustainable development can be defined, most broadly as development that meets the economic environmental and social needs of the present while protecting the ability of future generations to meet their own needs. It demands that policy makers consider the consequences of their actions in an integrated fashion over the long term, so that current economic development does not come about at the expense of environmental and social capital that will be expensive, difficult, or impossible to replace.

\textsuperscript{44} Employment News, 29\textsuperscript{th} August – 4\textsuperscript{th} Sept., 1998
\textsuperscript{45} Employment News, October 9, 1998
"Sustainable development, therefore, depends upon accepting a duty to seek harmony with other people and with nature", according to caring for the Earth: A Strategy for Sustainable Living. And the guiding rules are:

(i) People must share with each other and care for the earth.

(ii) Humanity must take no more from nature than man can replenish; and

(iii) People must adopt life styles and development paths that respect and work within nature’s limits.

We must change our ways of living and agree to simpler economy. It follows naturally that sustainable development must be based on minimum use of energy and raw materials and consequently, minimum waste and pollution. This principle recognizes the duty of the present generation to pass on an environment no less healthy, in terms of the quality of air, water, soil and forests, than what we have inherited from the generation before us.

The ecological realities indicate that if the present generation continues to consume and deplete resources at unsustainable rates, future generations will suffer the consequences. Our children and grand children will be left without forests, without vital and productive agricultural land, without water suitable for either drinking or aquatic life, proponents of intergenerational equity maintain that the present generation has a moral obligation to manage the earth in a manner that will not jeopardize the aesthetic and economic welfare of the generations that follow. From this moral premise flow certain ecological obligations, not to cut down trees, for example, there is a breach of equity if we pass on to future generation a less robust planet or unequal resources for sustainable human development. Intergenerational equity and distributive
justice are the guiding principles with which poverty can be minimized at least if not altogether eliminated.\textsuperscript{46}

It is widely held that sustainable development cannot be achieved as long as hundreds of millions of poor are forced to scratch out a living by overgrazing land and plundering forests; nor as long as the rich consume resources as if they were unlimited — for they are not. Changes must, therefore, begin with what the UN Population Fund (UNFPA) has called the two groups:

“Responsible for a disproportionate share of environmental degradation: the world’s top billion richest and the bottom billion poorest” the first for choice, and the second for need.

All countries have a “common but differentiated” responsibility, according to UNCTAD VIII’s Cartagena commitment.

Industrialized countries currently emit the largest quantity of pollutants into the global environment and are the major users of the resources. At the same time, they are the best placed to contribute to solutions to environmental problems by implementing relevant policy measures and mobilizing the necessary financial and technological means.

It goes on:

Developing countries are concerned with local environmental problems including soil erosion, desertification and rapid urbanization ... These countries are, however, also vulnerable to global environmental problems. Their contribution to the solution of these problems is essential. The additional

\textsuperscript{46} R.K. Nayak, “Conservation of Humanity and Environmental Consumerism”, p. 68
burden involved should be underpinned by appropriate additional international support.

Yet sustainable development is not a fixed state of harmony, but rather a process of change in which exploitation of resources, the direction of investments, the orientation of technological development and institutional change are made consistent with future as well as present needs. The process is not very easy and straight forward, painful choices have to be made. Thus, in the final analysis, sustainable development must rest on political will.

**Elements of the Concept of Sustainable Development**

The principle of sustainable development consists of many elements. Sustainable development contains both substantive and procedural elements. The substantive elements are mainly set out in Principles 3-8 of the Rio Declaration (1992). They include the sustainable utilization of natural resources: the integration of environmental protection and economic development; the right to development and the pursuit of equity in the allocation of resources both within the present generation and between present and future generations.

Procedural elements are found in Principles 10 and 17 dealing with public participation in decision making and environmental impact assessment.

Sands has identified the four elements of the concept of sustainable development as reflected in international agreement dealing with principle of Inter-generational Equity. Sustainable use of natural resources, equitable use of natural resources (inter-generational equity), integration of environment and
development. None of these concepts is new, but the Rio Declaration brings them together in a more systematic form than hitherto and never before have they secured such widespread support across the international community.

The elements of sustainable development are as follows:

(i) **Inter-generational Equity**

The theory of inter generational equity has been advanced to explain the optimum basis for the relationship between one generation and the next. The theory requires each generation to use and develop its natural and cultural heritage in such a manner that it can be passed on to future generations in no worse condition than it was received. Central to this idea is the need to conserve options for the future use of resources, including their quality, and that of the natural environment.

Sustainable development rests on commitment of future generations to equity. This ethical and philosophical commitment constrains, the inclination to take advantage of our temporary control over the earth’s resources in order to use them for our own benefit without careful regard for what we leave for our children or for their descendents. Concerns about equity are central in the legal tradition. Law and philosophy provide a basis for analysing the normative relationship among generations and the instruments for transforming normative values into rights and obligations.

Intergenerational equity implies intergenerational fairness and mandates that the present generation should not look at the earth and its resources as

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mere investment opportunity but as a trust passed on to them by the ancestors, to be enjoyed and passed on to the future generations for their use. Each generation holds the earth and its resources as a steward or in trust for future generation. Earth and the resources constitute a planetary trust.

The theory of intergenerational equity stipulates that we, the human species, hold the natural environment of our planet in common with all members of our species: past generations, the present generation, and future generations. As members of the present generation, we hold the earth in trust for future generations. At the same time, we are beneficiaries entitled to use and benefit from it. Thus, the present generation being trustee, has the right to benefit from the use of the natural resources which constitute trust property.

The present generation also has the corresponding duty to maintain the quality of the natural system. All generations are inherently linked to other generations, past and future, in using the common patrimony of the earth. The theory of intergenerational equity stipulates that all generations have an equal place in relation to the natural system. There is no basis for preferring the present generation over future generations in their use of the planet. Each generation should use the natural system to improve the human condition. Improvements should be conserved for the future generations. This requires each generation to pass the planet on in no worse condition than that in which it received it and to provide equitable access to its resources and benefits. Thus, each generation is both a trustee, for the planet with an obligation to take care for it, and a beneficiary with tights to use it.
(a) International Law and Intergenerational Equity

The theory of intergenerational equity has a deep basis in international law. The United Nations Charter, the preamble to the Universal Declaration of Human Rights of 1948, the international Covenant on Civil and Political Rights of 1966 and many other human rights documents reveal a fundamental belief in the dignity and equality of rights of all members of human society. The grant of licence to the present generation to exploit the natural and cultural resources at the expense of the well-being of future generations, would contradict the purposes of the United Nations Charter and the International Human Rights Documents.

Since the World War II, states have begun to express concern in international legal instrument for the welfare of future generations and to set forth principles and obligation, intended to protect and enhance the welfare of both present and future generations. Even the United Nations Charter, drafted in the aftermath of World War II, affirms the universal concern for the welfare of future generations in the opening words of its preamble:

We, the peoples of the United Nations determined to save succeeding generations from the scourge of war...\(^{48}\)

The Universal Declaration of Human Rights also states in its preamble:

whereas recognition of die inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world....\(^{49}\)

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\(^{48}\) United Nations Charter, 26 June 1945, Preamble

\(^{49}\) Universal Declaration of Human Rights, 10 December 1948, Preamble
The term 'human family' has temporal element and includes dead, living and the unborn persons. In the same vein, the International Covenant on Civil and Political Rights as well as the International Covenant on Social, Political and Cultural Rights of 1966 recognises that:

the inherent dignity and the equal and inalienable rights of all members of human family constitute foundation of freedom, justice and peace in the world...\textsuperscript{50}

Concern for justice to future generations regarding the natural environment emerged in the preparatory meetings of the UN Conference on Human Environment, 1972. The preamble to the Stockholm Declaration on the Human Environment expressly refers to the objective of protecting the well-being of future generations:

to defend and improve the environment for present and future generations has become an imperative goal for mankind.\textsuperscript{51}

The World Charter for Nature 1982, while not a binding agreement, explicitly refers to the requirement to protect species and ecosystems for future generations.

The Earth Summit held at Rio de Janeiro, Brazil from 3-14 June 1992 was aimed at integration of environment and development. Principle 3 of the Rio Declaration is based upon intergenerational equity. It provides that the tight to development must be fulfilled so as to equitably meet development and

\textsuperscript{50} International Covenant on Civil and Political Rights, Preamble; International Covenant on Economic, Social and Cultural Rights 1966, Preamble

\textsuperscript{51} UN Conference on Human Environment, Stockholm 1972, Preamble
environmental needs of the present and the future generations. The component of intergenerational equity is inherent in the concept of sustainable development.

(b) Three Principles of Intergenerational Equity

Three principles frame inter-generational equity. First, each generation should be required to conserve the diversity of the natural and cultural resource base so that it does not unduly restrict the options available to future generations in solving their problems and satisfying their own values, and it should also be entitled to diversity comparable to that enjoyed by previous generations. This principle is called ‘conservation of options’.

Secondly, each generation should be required to maintain the quality of the planet so that it is passed on in no worse condition than that in which it was received, and it should also be entitled to planetary quality comparable to that enjoyed by previous generations. This is the principle of ‘conservation of quality.’

Thirdly, each generation should provide its members with equitable right of access to the legacy of past generations and should conserve this access for future generations. This is the principle of ‘conservation of access’. It means that the members of the present generation have a nondiscriminatory right to use the resources of the planet to improve their own economic and social well-being provided they do not unreasonably interfere with the access of other

52 UN Conference on Environment and Development, Brazil 1992, Principle 3
members of their generation to do so as well.

Four criteria guide the development of the principles of inter-generational equity. Firstly, the principles should encourage quality among generations, neither authorizing the present generation to exploit resources to the exclusion of future generations nor imposing unreasonable burdens on the present generation to meet indeterminate future needs. Secondly, they should not require one generation to predict the values of future generations. They must give future generations flexibility to achieve their goals according to their own values. Thirdly, they should be reasonably clear in their application to foreseeable situations. Fourthly, they should be generally shared by different cultural traditions and be generally acceptable to different economic and political systems.

(c) **Planetary Rights and Obligations**

Planetary intergenerational rights and obligations are integrally linked. The rights are always associated with obligations. These are rights of each generation to receive the planet in no worse condition than did the previous generation, to inherit comparable diversity in the natural and cultural resource bases, and to have equitable access to the use and benefits of the legacy.

Intergenerational planetary rights may be regarded as group rights, distinct from individual rights, in the sense that generations hold these rights as groups in relation to other generations — past, present and future. They exist regardless of the number and identity of individuals forming each generation. When held by members of the present generation, they may acquire attributes of individual rights in the sense that they are identifiable interests of the individuals protected by rights.
Enforcement of the intergenerational rights is accomplished by a guardian or representative of the future generations as a group, not of future individuals, who are indeterminate. While the holder of the rights may lack the capacity to bring grievances forward and is dependent upon the representative’s decision to do so, this inability does not affect the existence of the right or the obligation associated with it.

The Brundtland report recommended the countries to appoint an ombudsman for future generations at the national level.53

Future generations need to be effectively represented in decision making today, but they are not. This requires an understanding of the fundamental entitlement correctly. Future generations have an equal right with the present generation to use and benefit from the natural environment. International community of sovereign states faces the undaunting task of elaboration and codification of the inter-generational rights and obligations to correctly determine the generational entitlements.

(d) Codification of Intergenerational Rights and Obligations

The codification of intergenerational rights and obligations encourages co-operation between countries and amongst communities to fulfill the obligations of future generations. Codification reduces ambiguities about the behaviour that is expected of parties. It also leads to the creation of

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53 The World Commission on Environment and Development, Our Common Future 1987, (Brundtland Report), 332
international institutions to manage or to co-ordinate measures for managing particular natural or cultural resources or activities affecting these resources. Such institutions facilitate the development of new norms.

(ii) Intra-generational Equity

Intra-generational equity signifies equity within and between the countries. It underlies inter-generational equity and is a condition precedent to achieve inter-generational equity. The problem of inter-generational equity must be approached in the light of different economic, environmental, cultural and political circumstances prevailing within and between the countries. The inequality between people as a result of greed and the mal-distribution of power is a major obstacle in achieving sustainability. Unsustainable behaviour of the poor people is almost always due to factors such as loss of land, growing indebtedness, or loss of access to markets that leave them unable to support themselves properly. When wealthier people appropriate resources for themselves at costs far below their value for production poor people who lose by such appropriations are powerless to hold the wealthy accountable. Having no resource, they place greater stress on their environment by moving deeper into the forest, occupying marginal land unsuitable for agriculture or herding or adopting some other way of staying alive.

The Brundtland Report also recognises the inequalities between countries and stresses that several problems arise from inequalities and access to these resources. The Report maintains that inequitable land ownership structures can lead to over-exploitation of resources in the smallest holdings with harmful effects on both environment and development. Accordingly, the Brundtland Report asserts that the future cannot be common in the sense of
being equal, fair and just when the economic and ecological situation of lower and higher income countries are compared. Undoubtedly, the inability of the mankind to promote the common interest in sustainable development is often a product of the relative neglect of economic and social justice within and amongst nations. Thus, the Brundtland Report emphasizes that the reduction of poverty is a precondition for environmentally sound development in lower income countries.

Intra-generational equity requires that the developed countries should provide environmentally friendly technology and funds to the developing countries to build their capacities to protect the environment. The developing countries are entitled to the funds as well as technology on the basis of intra-generational equity which is an essential component of sustainable development. Accordingly, international treaties and conventions concerning protection of the environment effectuate intra-generational equity by providing transfer of technology and funds by the developed countries to the developing countries. International funding mechanisms for building the capacities of the developing Countries to protect the environment aim at the fulfillment of the entitlements of the developing countries based on intra-generational equity. Intra-generational equity mandates recourse to capacity building measures.

The developed and the developing countries have common but differentiated responsibilities to protect the environment. The responsibilities are differentiated due to the difference in the economies. The concept of intra-generational equity is based on the realization that we have two planets, two worlds, two humanites and two economies. The responsibilities of the states to protect the environment are proportionate to their respective economies.
(iii) Integration of Environmental Protection and Economic Development

Principle 4 of the Rio Declaration provides that ‘environmental protection shall constitute an integral part of the development process and cannot be considered in isolation from it. The purpose of Principle 4 of to ensure that development decisions do not disregard environmental considerations. Integration of these competing values is fundamental to the concept of sustainable development and has implications across a broad range of national and international policy, as can be seen from Agenda 21, which refers to the ‘more systematic consideration of the environment when decisions are made on economic, social, fiscal, energy, agricultural, transportation, trade and other policies.

The purpose of Principle 4 can be seen from Agenda 21, which refers to the ‘more systematic consideration of the environment when decisions are made on economic, social, fiscal, energy, agricultural, transportation, trade and other policies’. Since 1989 the World Bank and other multilateral development banks have sought to integrate environmental assessment into the lending policies. The integration of environmental considerations is also an issue affecting international trade, although here, there remains significant scope for improvement. While Principle 12 of the Rio Declaration reflects the concerns of free trade advocates that environmental restrictions should not constitute disguised or arbitrary interference with free trade, WTO has been slower to take full account of the needs of environmental protection. The relationship between environmental protection and GATT is considered further in Chapter fourteen.
Integration is a well established and intrinsic feature of international environmental regulation and of most developed economies. To this extent the real implications of Principle 4 are more to be found in its impact on developing countries, where environmental considerations have historically not been prominent in development planning, and in the World Bank and other development agencies.

(iv) The Right to Development

Principle 3 of the Rio Declaration is the first occasion on which the international community has fully endorsed the previously controversial concept of a 'right to development'. Critics have argued that this is not a right at all and point to its uncertain character in the 'Declaration on the Right to Development' adopted by the General Assembly in 1986, and reiterated in the 1993 Vienna Declaration on Human Rights. Composed of an amalgam of interstate obligations, collective rights, and individual human rights, the right to development is sometimes referred to as a 'third generation' human right; others see it as unnecessary and unhelpful to the promotion either of development or of human rights. Although partly drawn from existing UN General Assembly resolutions and conventions on economic and social rights, the legal status of the right to development has been and remains doubtful. Its inclusion in the Rio Declaration represents a success for developing country advocates, and reflect concerns that environmental protection should not outweigh their need for economic development. It was thus intended as a counterweight to Principle 4. At the same time, Principle 3 does introduce the further important limitation that the right to development must be expressed 'equitably' so as to meet both developmental and environmental needs of present and future generations. Clearly, it is not an absolute right but one
whose scope is defined only in relation to other competing factors. This may help explain why the USA continues to assert that development is not a right at all but only a ‘goal’. Moreover, as we saw earlier, the right to develop requires ‘full respect for the principles of international law concerning friendly relations and co-operation among states in accordance with the Charter of the United Nations’. To that extent if cannot override, but must be integrated with, existing international law concerning protection of the environment.

(v) Sustainable Utilization and Conservation of Natural Resources

In order to meet the needs on sustainable basis, it is absolutely necessary to use the Earth’s natural resources carefully and natural resource base must be conserved and enhanced. It is the part of our moral obligation to other living beings and future generations that the resources must be conserved and enhanced to meet the needs of growing populations. The idea that for the benefit of future generations, the present generations should be modest in their exploitation of natural resources has found widespread international approval since Maltese proposal at the UN General Assembly of 1967 which contended that there was a common heritage of mankind and this also required legal protection by the international community.

Principle 23 of the Rio Declaration specifically asserts that environment and natural resources of people under oppression, dominations and occupation shall be protected. Similar is the Principle 8 of Rio Declaration which says that to achieve sustainable development and a high quality of life for all people, states should reduce and eliminate unsustainable pattern of production and consumption. It is thus obvious that use and conservation of natural resources

54 Our Common Future – The World Commission on Environment and Development, 43 (1987) at 57
is an essential principle of sustainable development. International law now imposes on states a general obligation of conservation and sustainable use of natural resources.

(vi) The “Polluter Pays” Principle

Remediation of the damaged environment is part of the process of “Sustainable development” and as such the polluter is liable to pay the cost to the individual suffers as well as the cost of reversing the damaged ecology. Under this principle it is not role of government to meet the costs involved in either prevention of such damage, or in carrying out remedial action, because the effect of this would be to shift the financial burden of the pollution incident to the tax payer.

The ‘polluter pays’ principle is essentially an economic policy for allocating the costs of pollution or environmental damage borne by public authorities, but it also has implications for the development of international and national law on liability for damage.

Polluter Pays Principle (PPP) has been developed by the Organization of Economic Cooperation and Development (OECD) as one of the principles for allocation of entitlements. The Council of OBCD has adopted a number of recommendations relating to the environment. Since recommendations are only soft law texts, the OECD member states are not bound by theme Nevertheless, they have a considerable impact on the latter’s policy. On 28 May 1972, the Council of OECD adopted a recommendation wherein it was recommended that the polluter pays principle should be used to allocate the costs of pollution
prevention and control measures\textsuperscript{55}, On 14 November 1974, the Council of OECD adopted a recommendation on ‘The Implementation of the Polluter Pays Principle’\textsuperscript{56}. Thus, the credit for popularising for the first time ‘Polluter Pays Principle’ goes to OECD\textsuperscript{57}. The principle basically means that the producer of goods or other items should be responsible for the costs of preventing or dealing with pollution which the process causes. This includes environmental costs as the direct costs to people or property. The costs include full environmental costs, not just those which are immediately tangible. There is a very strong link between the principle and the idea that the prevention is better than cure.

The application of the principle has sometimes resulted in confusion. There have been disputes over its exact scope, especially over limits on payments for damage caused. The principle is essentially a guide to desirable courses of action.

The Brundtland Report of 1987 insisted on internalisation of the environmental cost of economic activities\textsuperscript{58}. The principle of internalisation of the environmental cost of the economic activities effectuates the spirit of the polluter pays principle. It encourages the developers to invest in preventive, restorative or compensatory measures,


\textsuperscript{55} Rec. C (72) 128, OECD and the Environment 25-28
\textsuperscript{56} Rec. C (74) 223, OECD and the Environment 28-30
\textsuperscript{57} OECD, The Polluter Pays Principle, 1975
\textsuperscript{58} ibid. at p. 220-221
endeavour to promote the internalisation of environmental costs and the use of economic instruments, taking into account the approach that the polluter should, in principle, bear the cost of pollution, with due regard to the public interest and without distorting international trade and investment.

‘Polluter Pays Principle’ exposes the polluter to two fold liability, namely compensation to the victims of pollution and ecological restoration. The principle is a source of liability and compensation for pollution. Like ‘Sustainable Development’ and the ‘Precautionary Principle’, ‘Polluter Pays Principle’ has also acquired the status of customary international law.

(vii) The Precautionary Principle

‘Precautionary Principle’ plays a significant role in determining whether developmental process is sustainable or not. ‘Precautionary principle’ underlies sustainable development which requires that the developmental activity must be stopped and prevented if it causes serious and irreversible environmental damage.

The emergence of precautionary principle marks a shift in the international environmental jurisprudence - a shift from assimilative capacity principle to precautionary principle.

• Assimilative Capacity Principle

Assimilative capacity principle underlies earlier legal measures to protect the environment: In 1972, the UN Conference on Human Environment was held at Stockholm which resulted in the adoption of Stockholm Declaration containing 26 principles. Principle 6 of the Stockholm Declaration
contains assimilative capacity principle which assumes that science could provide the policy makers with the necessary information and means to avoid encroaching upon the capacity of the environment to assimilate impacts and it presumes that relevant technical expertise would be available when environmental harm is predicted and there would be sufficient time to act in order to avoid such harm.

The assimilative capacity principle is based on the belief that scientific theories are certain and adequate to provide the remedies for ecological restoration whenever pollution occurs. The principle is built on the foundation of scientific certainties and adequacies.

Assimilative capacity principle suffered setback when inadequacies and uncertainties of science became visible in environmental context. It has been revealed that the inadequacies of science result from identification of adverse effects of a hazard and then working backwards to find causes. Uncertainty resulting from inadequate data, ignorance and indeterminacy are an inherent part of science. Uncertainty becomes a problem when scientific knowledge is institutionalised as policy making or used as a basis for decision making by agencies and courts. Scientists may refine, modify or discard variables or models when more information is available. However, agencies and courts must make choices based on existing scientific knowledge. In addition, agency decision making evidence is generally presented in a scientific form that cannot be tested and therefore, inadequacies in the record due to scientific


60 Brian Wyne, Uncertainty and Environmental Learning, 2 Global Environmental Change (1992) at 111
uncertainty and insufficient knowledge may not be properly considered.\textsuperscript{61}

- **Assimilative Capacity to Precautionary Principle — A Shift**

  The uncertainty of scientific proof and its changing frontiers from time to time have led to great changes in the environmental concepts during the period between the Stockholm Conference of 1972 and the Rio Conference of 1992. A basic shift to the approach to environmental protection occurred initially between 1972 and 1982. Earlier the concept was based on the assimilative capacity rule as revealed from principle 6 of the Stockholm Declaration. The emphasis shifted to ‘precautionary principle’ in the principle 11 of the World Charter for Nature adopted on 28 October 1982 by the UN General Assembly by a majority of 111 votes with 18 abstentions and one negative vote casted by the United States. The developing countries overwhelmingly endorsed the Charter. The former pre-1989 Soviet Block found the Charter, an inexpensive and convenient way to demonstrate the fraternity with the isolation of United States in the General Assembly.

  The World Charter for Nature proclaims that activities which are likely to cause irreversible damage to the nature shall be avoided.\textsuperscript{62} In cases, where the potential adverse effects of the activities are not fully understood, the activities shall not proceed.\textsuperscript{63} In case the activities that may disturb the nature are to be undertaken, such activities shall be planned and carried out so as to

\textsuperscript{61} Charmian Barto, 22 Harvard International Law Review (1998) at 509

\textsuperscript{62} World Charter for Nature 1982, Article 11(a)

\textsuperscript{63} Ibid., Article 11(b)
minimize potential adverse effects\textsuperscript{64}.

\begin{itemize}
  \item \textbf{Conceptualization}
\end{itemize}

Environmental measures must anticipate, prevent and attack the causes of environmental degradation. Where there are threats of serious or irreversible environmental damage, lack of scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. The implication of this duty is that the developers must assume from the fact of development activity that harm to environment may occur and that they should take necessary action to prevent that harm. This principle is known as ‘precautionary principle’ and is recognized in major international documents. It is this ‘precautionary principle’ which ensures that a substance or activity posing a threat to the environment is prevented from adversely affecting it, even if there is no conclusive scientific proof linking that particular substance or activity to the environmental damage. The words ‘substance’ and ‘activity’ imply substance or activity introduced as a result of human intervention. They allow the principle to be used in relation to all aspects of environmental degradation, and to extend it to the area of sustainability. As a matter of fact, environmental protection policies must be based on precautionary principle in order to achieve sustainable development.

The \textit{Caring for the Earth} document emphasises that precautionary principle be made the basis of decisions on environment and development\textsuperscript{65}.

\textsuperscript{64} \textit{Ibid.}, Article 11(c)
\textsuperscript{65} Caring for the Earth (IUCN, UNEP, WWF) (1990) at 16
The principle has been given utmost importance in the United Nations Conference on Environment and Development held at Rio in 1992. Although there was scientific uncertainty on various environmental issues, e.g. causes and effects of global warming, Climate Change Convention was concluded which was supplemented by the Kyoto Protocol adopted in 1997. It was unanimously agreed that scientific uncertainty would not be allowed to become an excuse for deferring environmental protection measures. Principle 15 of the Rio Declaration contains precautionary principle which provides as follows:

In order to protect the environment, the precautionary approach shall be widely applied by the States according to their capabilities. Where there are threats of serious or irreversible environmental damage, lack of scientific certainty shall not be used as reason for postponing cost-effective measures to prevent environmental degradation.

Inadequacies of science is the real basis that has led to the emergence of precautionary principle. The principle is based on the theory that it is better to err on the side of caution and prevent environmental harm which may indeed become irreversible. While referring to the causes for the emergence of the precautionary principle.

The precautionary principle forms the basis for the adoption of all the instruments at the Rio Conference including the UN Convention on Biodiversity of 1992, which has later been supplemented wits the adoption of a Cartagena Protocol on Biosafety on 29 January 2000. The Protocol seeks to protect the biodiversity from the potential risk posed by living modified organisms of modern biotechnology. It establishes a procedure for ensuring that countries are provided with the information necessary to make informed
decisions before agreeing to the import of such organisms into their territory. The Biosafety Protocol is a breakthrough, in that it enshrines the ‘precautionary principle’ as a principle of international environmental law. The Protocol establishes a ‘Biosafety clearing house’ to facilitate the exchange of information on living modified organisms and to assist countries in the implementation of the Protocol.

The principle has acquired the status of customary international law after meeting both the requirements for the existence of international custom, namely uniform practice of states and opino juris sive necessitatis, i.e. the belief of the states that such practice is binding on them.

(vii) Environment Impact Assessment

Environment Impact Assessment is a procedural element which is found in principle 17 of the Rio Declaration (1992).

Principle 17 is described as,

“Environmental impact assessment, as a national instrument, shall be undertaken for proposed activities that are likely to have a significant adverse effect impact on the environment and are subject to a decision of a competent national authority”.

Environmental Impact Assessment (EIA) is a technique to ensure that the likely effects of developmental activity on the environment will be taken into consideration before the developmental activity is authorised to proceed. EIA requires the developer to give to the deciding agency, a statement of the environmental effects on the developmental activity to be considered in the
decision making process. EIA gives a chance to adopt or modify a scheme to mitigate adverse environmental consequences, and for taking the environmental dimension into account in project decisions.

European Community law requires that certain major projects are subject to process in which the likely environmental effects must be considered before the permission is granted for them. As a result, environmental factors are considered as an integral part of the decision making process, rather than as objections to be thought about after tentative decision has been made. Accordingly, developers have to consider environmental impact on their projects as a part of the process of planning. The process of EIA effectively has three stages:

1. The developer must submit Environmental Impact Statement to the competent authority. This statement should identify the potential environmental effects, (i.e. direct and indirect impacts on human beings, flora and fauna, soil, water, air, climate and landscape; the interaction between these factors; and the effects on material assets and the cultural heritage and the steps that are envisaged to avoid, reduce or remedy these effects. It may also include further information, including the alternatives that have been considered.

2. The competent authority must then consult the public bodies, environmental organisations and other institutions concerned with the protection and improvement of the environment. There must also be an opportunity for the public to express opinion. The developers

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67 Stuart Bell *et al.*, Id., at 348-73
Environment Impact Assessment must be made publicly available and copies must be sent to the consultees.

3. The competent authority must prepare an environmental assessment of the proposal before deciding whether it may go ahead. The EIA prepared by the competent authority should take into account the views of the public and the consultees.

The technique of EIA finds its origin from the ‘precautionary principle’ which requires refusal of consent or approval of the developmental activity by the competent authority, if such project poses threat of serious or irreversible environmental damage. To determine the serious or irreversible nature of the environmental effects on the developmental activity, EIA is necessary. The ‘precautionary principle’ mandates that the EIA should be made obligatory for developmental activities which are likely to have significant adverse effect on the environment. In case EIA reveals that the developmental activity poses threat of serious or irreversible environmental damage, the competent authority must withhold the consent for approval or permission to such activity.

The ‘precautionary principle’ mandates that EIA should be carried out not only at the time of commencement of the developmental project but even during the operation of the project. EIA involves continuing assessment and evaluation of the environmental effects on the developmental projects as long as the project is in operation and is not confined to pre-project evaluation of possible environmental effects. EIA is a continual process and is focused on the continuing monitoring of the environmental consequences of the developmental activity, because it is not possible to anticipate all the
developmental activity, because it is not possible to anticipate all the
environmental consequences of the developmental activity at the time of its
commencement. The 'precautionary principle' insists upon the continuing
features of the EIA as long as developmental activity continues. The continual
environmental assessment is the mandate of the precautionary principle.

Thus conceptually and empirically, as brought our above, that
sustainable development, in the ultimate analysis, is premised on the idea of
inter generational equity, responsibility and justice. The present generation
does not have an absolute right to exclusively exploit and indiscriminately use,
rather, misuse, natural resources at the expense of future generations. It is
legally as well as morally obliged to preserve, conserve and save the
environment for posterity. Future generations like the present one, have the
right to inherit from their predecessors an ecologically sound and healthy
environment. A careful reading of national, regional and international
instruments on the human environment in vogue reveals that the present
generation has to be fair and just to itself, its unborn children and to Mother
earth.

The definition of sustainable development given by the Brundtland
Commission that sustainable development is a integration of environmental
protection and economic development which meets the needs of present
generation without compromising the ability of future generations to meet their
own needs. But it fails to explain either the nature of sustainability or of
development, and gives us no criteria of determining the parameters and the
ultimate objective of this integration of development and environment. Nor
does it tells us what the needs of future generations will be.
Sustainable Consumption And Development: Nature, Scope And Origin

The scope of sustainable development and its effectiveness is also limited in use because we cannot assume that science is capable to know all adverse effects of the developmental programmes on environment. Sustainable development may also be seeking the impossible; perhaps it is an illusion that we can have development, equity and a sound environment all in one package. Sustainable development almost seems to deny that there are tradeoffs among these goals. For others, however, this tripartite goal of economy, ecology and social justice is the very challenge. For them the question is not whether sustainable development is achievable, but how it can be achieved. Even if we fail, striving for sustainable development may hold out the prospect of a better world for longer than conventional development policies could achieve. But there are prior steps to be taken before we can formulate policies for sustainable development. A fundamental step is finding indicators to measure sustainable development, for otherwise it will not be possible to say whether an economy is on or off a sustainable path of economic development.

The principle of sustainable development reflects a range of substantive and procedural commitments and obligations. It accepts that development is essential but it should be ecofriendly. It is true that it is a concept towards realism from idealism. But this crucial concept does not have a solid core of meaning. Does the content of sustainable development include a policy of no growth of zero growth. May zero growth be unsustainable?

Accepting the principle of sustainable development as a customary rule of international is also full of difficulties. For instance, what are its substantive contents? How ill it be interpreted? And, if not followed, by any state, then how will it be enforced? What will be the sanctions? The definition of
sustainable development given by WCED fails to explain either the nature of sustainability or of development and gives us not criteria for determining the parameters and the ultimate objective of integration of development and environment. Nor does it tell us as to what will be the needs of the future generations?

Sustainable development is continuing concept like human rights which is still growing. It is mainly a political principle which is trying to settle itself within the four walls of law. But it is doubtful that the principle of sustainable development has achieved the status of *jus cogens*.

Sustainable development has made some normative progress. But Birnie and Boyle have taken the view that it cannot yet be said to be a norm of international law. However, they do recognize the widespread international endorsement of sustainable development as the central concept of international law.\(^{68}\) Whereas Sands is of the view that the concept of sustainable development is now established in international law, even if its meaning and effect are uncertain. It is a legal term which refers to processes, principles and objectives, as well as to the large body of international agreements on environment, economics and political rights.\(^{69}\)

The principle of sustainable development has not yet assumed the definite status of an established rule of international law. But sustainable development is potentially a tool of great power in the hands of decision-
makers. They need not wait on state practice and *opinio juris* to develop the concept of sustainable development in the way that a primary rule of international law would be developed. So, states must take initiative by themselves. There is an immense need of integration of legal, economic, technological, social, political, cooperative attitudes of states for realization of more and more sustainable development to meet the modern challenges.