2.1 Understanding Environment

We used to talk a lot about Environment in different modes as Business environment, political environment, social environment, legal environment, psychological environment etc. etc. But in actual what this term environment means. As many people as many ideas or definitions. Sociologists, anthropologists and psychologists called environment the social milieu that surrounds and has an impact on human activities, while natural scientists, biologists used this word to signify natural system independent on humans and surrounding a living being or an animal or plant population. Now environment can be considered rather is being considered today to be an organised dynamic and evolving system of natural (physical, chemical, biological) human (economic, political, social, cultural) factor in which living organisms operate on human activities take place and which has a direct or indirect immediate or long term effect or influence on these living beings or on human actions at a given time and in a circumscribed area.¹

In German, it is called umwelt which means surrounding world and include the material and object which make up the surface of Earth.² Word environment suggest different meaning to different persons. To a meteorologist and climatologist, it usually means atmosphere, to environment engineer it usually means environment in an enclosed space such as a factor, office block or hospital, which the engineer has to
maintain in a safe, healthy and comfortable state. To ecologist the environment is synonymous with the term habitat within which plants and animal lives. It also refers to entire range of external influences, natural and man made that can impinge on the life support systems essential for health and survival.

One definition says that Environment is derived from French word *Environ* or *Environner* means around; round about, to surround; to encompass, these in turn originate from old French (archaic) *virer* and *viron*, which means a circle around, country around or circuit.³

Gro Harlem Brundtland in her report to World Commission on Environment and Development, “Our Common Future” has given its definition as the environment is where we all live.⁴ So we can conclude by saying in a Layman style that environment includes air, water, soil around us.

Second question which get birth is this that, How it is polluted? Clearly by air pollution, water pollution, soil pollution. Air is one of the most used and abused parts of biosphere. Industrial, automotive and domestic activities have resulted in increasingly outrageous insults to atmosphere, yet air is finite. It cannot be manufactured and replenished as the need for it increases. Out of our most fragile and precious resource, its abuse is a health hazard and a threat to life, damaging both plants and animals in areas polluted with poisonous fumes, dust smoke, motor
vehicles, air conditioners, refrigeration industry and power plants. Major air pollutants are carbon monoxide (CO), odourless poisoning gas created largely by automobiles, carbon dioxide, sulphur dioxides released mainly as industrial effluents, by burning of fossil fuel, furnaces, petroleum refineries, hydrogen toxicity same as cyanide emitted by tannery wastes, mining operations etc. Aerosol, a suspension of finely divided solid particles or droplets of liquid in air e.g. smoke, fog, dust, nitrogen oxides released by cigarettes, cigar, hydrocarbons emitted by automobiles, exhaust from incomplete combustion, solvents, plant thinner, lead released by automobiles, smog etc.

Such Air pollution specially by smog has the memoirs of it forever. In Autumn of 1909 the Glasgow Scotland when 1063, deaths were attributed to Smog. In 1930, in Meuse Valley of Belgium, a large number of people were made sick and many were killed by Smog as areas was highly industrialised with blast furnaces of steel mills. On December 5 to December 9, 1966 best known episode of air pollution in London began on Thursday because of extensive use of Coal as fuel for space heating and electric production, till Saturday claims 4000 lives, in 1966 in New York, 168 deaths due to SO$_2$; Bhopal Gas leak of India on 3$^{rd}$ December, 1984 claims 2000 to 5000 lives in estimates by Methyl isocyanate (MIO)$^5$.

Pollution causes Asthma, Bronchitis, Lung cancer, Allergies, Headaches, Affect eyes, skin etc. etc. Water which has given life to all lung
creatures, whether mammals or plants about which (Guru Granth Sahib) "The eleventh Nanak" says,

"Pehla panii jiyo Hai jit Hariya Sab Koyé" means first is the water which gives birth/ life to every creature, fresh water which is needed for bathing, drinking, which often serve as elixir in drought to give life to victims which is next to Air in importance is largely polluted by detergents, oil accident, chemical waste, fertilisers, cleansing agents, results in killing of mammals as well as of plants.

Soil pollution which often come into existence by pesticides and herbicides used to control unwanted organism affecting food, or other things essential to mankind or used to eliminate unwanted plants in agriculture or horticulture e.g. DDT, Urea, DAP etc. and which often results in aghast circumstances leading to a disease forever e.g., eye weakness, baldness, arthritis. In 1975, hundreds of people in India’s Karnataka State’s District Shimoga were struck by mysterious attack of arthritis, which wastes away Limbs and brings about dwarfism as pesticides that were sprayed in fields were ingested by crabs which in turn were eaten by farmers. This human body takes its power from soil in shape of food and at the end of life. It submerges into it as 3000 years ago. Mosses has said, "Dust thou art and unto dust shalt thou return" emphasising the fact that one of dust, the food is produced which goes to build our body and after death, body slowly decomposes and become part of this soil. It could be very well imagined that day will be there when it
(soil) will refuse to entertain our dead bodies due to pollution and soil degradation.

Besides these two more pollution we can talk of first is noise pollution i.e., slow poison. Second is nuclear pollution, which results in increased radioactivity which in turn results in mutation of DNA resulted into odd physical structures and cancerous body parts. Best examples are dropping of bombs over Hiroshima and Nagasaki in 1945 by USA and Nuclear tests conducted by different countries, which results into disfiguring of future generations of affected people. Till date the affects of nuclear drop can be envisaged. Now what the results of this pollution leads to?

2.2 Results of degradation

A layer of ozone gas known as ozone layer lies in Stratosphere which plays a crucial role in protecting living organism from harmful effects of Ultraviolet rays coming directly from Sun. This layer is concentrated at 6 to 31 miles from Surface of Earth. Its protection is decreasing because of its destruction by Chloro-fluoro-carbons and other air pollutants which is resulting in skin cancer and mutation of genes. Most dramatic evidence of ozone destruction has occurred over Antarctica where a massive hole in ozone layer appears each winter and spring. Data says thinning of Ozone layer could cause some 12 millions cases of Skin cancer; 2,00,000 of which could be fatal (only in America) what whole of the
world could see, just imagine, and if it continues to deplete then in 21st
century, 155 million cases of skin cancer and 3.2 million deaths have to be
seen.

Secondly, Greenhouse effect of as called Global Warming, as these
dust particles and pollutants in air don’t allow sun rays to retreat but traps it
in earth surfaces, which results into more heat insertion to Earth
atmosphere and less heat escape into space resulting in increase in
temperature of earth. Most easing predictable consequence is rising of sea
level. One degree increases in temperature contribute to 4-8 inch rise in
mean sea level. This could lead to severe and frequent storm damage,
flooding, disappearance of Wetland, Cowlands, Coastal erosion, loss of
beaches, low islands, wildlife extinction, increased salinity of rivers, bays,
acquifiers. Top six warmest year of average global temperature were 1983,
cost America with 9900 more assaults, deaths by violence each year due to
irritation.”8

Acid rain is another dangerous result due to deposition of airborne
pollutants on land and in bodies of water this causes damage to forests as
well as lakes, streams and vegetation decline in biological productivity of
lakes as an estimate 24% of lakes of adirondack region of New York are
devoid of fish due to acid disposition. 16% of lakes lost one or more
species of fish due to this phenomenon.9 So how to get rid of such
environment degradation which is resulting in our destruction.
Extraordinary development of man’s brain lessens his dependence on animal instinct but it is still at the root of his creativity and of his destructions. He can modify drastically the conditions he find unsuitable and unsustainable for him and if and when he get failure at his first experiment, he is at the liberty to carry out and try something new but he can also carry out his experiments to disastrous points from where there is no return. Once René Descartes says, “Je Pense donc Je Suis” which means I think So I am, so our existence is due to our thinking which leads us to construction as well as towards destruction both. Destruction is easy and is clear from present environmental scenario but construction is the second name of development rather positive development which moreover we can say sustainable development.

2.3 Sustainable Development: A Concept

Since 1987, over the last 13 years term sustainable development has dominated the environment domain, policy and politics. This concept is new in the common currency throughout world of policies and in players of environment areas. Never before in human history, common destiny has beckoned us to redefine our priorities and to seek a new beginning, such as sustainable development. Sustainable development is a concept given by Gro Harlem Brundtland, Norwegian Prime Minister in her report “Our Common Future” submitted to World Conference on Environment and Development which says, It is a development that meets the need of
present without comprising the ability of future generations to meet their own needs. It contains within two key concepts:

- Concept of need in particular the essential needs of world’s poor, to which overriding priority should be given

- Idea of limitations imposed by state of technology and social organisation on environmental ability to meet present and future needs.\(^{10}\)

Dictionary meaning of sustainable is everlasting or to keep in existence and development involves a progressive transformation of economy and society. To attain physical sustainability, development policy must pay attention to consideration as changes in access to resource in distribution of costs and benefits.

Satisfaction of human needs is the major objective of development. It will be sustainable only when it fulfils the needs gradually and continuously without any break.

According to definition given by Caring for the Earth, It is improving the quality of life while living within the carrying capacity of supporting ecosystems.\(^{11}\)

Some pessimists consider it a contestable concept having a mistaken view of nature and function of political view.\(^{12}\)

One definition says food for everybody, shelter for every family, clothes for everyone and security of life is sustainable development as 60%
of world's population lack in one or two of above facilities. Different persons have different interpretations and for this purpose, we have a lot of conventions, conferences on these necessities. Few of them elaborate this concept of sustainable development very cleanly and precisely and to protect our environment.

Concept of Global Common had been introduced to give a compact view of what we include in our environment also Global commons are defined as: area outside the jurisdiction of any nation or group of nations. This definition has applied to plethora of environment including the High Seas, Outer space, the Atmosphere, Deep Sea Beds, Parts of Antarctica. Idea behind this concept is this that these areas are for benefit of all nations and every nation share a common interest in them. Global Common become a target for over exploitation. To save these global commons from over exploitation, there are some treaties and conventions specially to use these commons in a sustainable way. We can very well set our age on Antarctic treaty 1959, the Space Treaty, 1967 and United Nations convention on law of the Sea, 1982. Convention on biological diversity, 1992 which overall in gist says that conservation of these resources and sustainable use of these commons or common heritage of mankind are crucial to meeting the needs of present and future generations.13

2.3.1 United Nations Conference on Human Environment

Very first instance which encouraged the concept of sustainable development was United Nations Conference on Human Environment in
1972 from June 5-16 better known as Stockholm declaration and was attended by 113 States. Principle 2 visualises the concept of sustainable development by saying that natural resources of earth, including the air, water, land, flora, fauna and especially representative samples of natural ecosystems were to be safeguarded for the benefit of present and future generations through careful planning or management as appropriate principle, 3 says about maintenance, restoration and improvisation of capacity of Earth to produce vital renewable resources on mankind to safeguard heritage of wildlife.

Principle 5 gives an idea of to employ non-renewable resources of earth in such a way to guard against the danger of their future exhaustion and to ensure the benefit from such employment be shared by whole of mankind. Principle 11 lays down that environment policies of states should enhance and not adversely affect the present and future development of potential of developing countries.¹⁴

Next step which can be visualised in regard to sustainable development is ASEAN Agreement of 9 July, 1985 which contracting parties make themselves bound by virtue of Article 1 to preserve biodiversity and to guarantee the continuing productivity of workable natural resources under their jurisdiction in accordance with scientific principles and with goal of sustainable development.¹⁵
2.3.2 Brundtland Report

Then another impetus of this by whose description this idea/ concept of sustainable development comes into existence in form of words as well as physically is Gro Harlem Brundtland’s (the Prime Minister of Norway) report appalled as “Our Common Future” in 1987 submitted to World Commission on Environment and Development, which give a clear cut definition to the Concept of sustainable development. It says, sustainable development is to meet the needs of present generations without compromising the ability of future generations to meet their own needs. It elaborates the concept of sustainable development does imply limits – not absolute limits. But limitations imposed by present state of technology and social organisation on environmental resources and by the ability of biosphere to absorb the effect of human activities and technology and social organisation can be both managed and improved to make way for economic growth. It gives an idea to pursue sustainable development by making relation of population size and growth, harmonious with changing productive potential of ecosystem and finally sustainable development must rest on political will. It gives policy directions to achieve sustainable development by:

1. reducing population growth

2. reusing human resources and their righteous and proper use
3. attaining food security by growing enough food with high technology by using limited land.

4. Controlling species extinction and ecosystem safety by stopping deforestation

5. Equitable distribution of energy

6. Tightening the control over industrial waste and agricultural chemicals

7. Reducing the risk of urbanisation

And it further says that these aims can be attained by:

1. guaranteeing the positive role of International economy

2. by managing the commons

3. by attaining peace and security

4. by effective legal channelization

5. by reasonable and equitable use of resources

6. by imposing strict liability

7. by exchange of information regarding technologies

8. by prior assessment and modification of impact on environment

9. by peaceful settlement of disputes
It gives a list of General principles, rights and responsibilities for environment protection and sustainable development, which are:

1. All Human beings have Fundamental Rights to an environment adequate for their health and well being.

2. State shall use and conserve the environment and natural resources for benefit of present and future generations.

3. State shall conserve, preserve ecosystem, biological diversity and observe principle of optimum sustainable yield, the in use of living resources and ecosystems.

4. State shall establish adequate environment protection standards and shall monitor changes.

5. It put responsibilities on states to make prior environmental assessments of proposed activities.

6. Prior notification access and due process in judicial and administrative proceeding is necessary for affected person.

7. Conservation shall be an integral part of planning and implementation of developing activities.

8. State shall co-operate in good faith with other states regarding implementation of these issues.¹⁶
2.3.3 Rio-Declaration

One step ahead goes in proving the concept of sustainable development was United Nations Conference on Environment and Development (better known as Earth Summit) held in Rio de Janeiro (means river of the month of January) Brazil in June 1992. Where more than 176 states and 1500 Non-Government Organisations and 35 inter Government organisations participated. It resulted in a declaration on environment and development containing 27 principles whose principle 1 put Human beings at the centre of concerns of sustainable development which means for human, humanity and human kind, sustainability of development is must.

Principle 3 ensures to fulfil right to development by having a deep concern over the needs of present and future generations. Principle 4 imposes environment protection as an integral part of development process. Principle 8 commands states to reduce eliminate unsustainable patterns of production and consumption so as to achieve sustainability in development. Principle 9 puts emphasis on state co-operations in transferring scientific knowledge and technology. Principle 10 deals with participation of people concerned. Principle 15 incorporates in itself the concept of precautionary principle to avoid serious and irreversible damage to environment. Precautionary principle is the base of energy developments as risk should be avoided, certainty should be brought in for development.
Second installation of this conference was Agenda 21 whose Section I deals with social and economic dimensions to promote sustainable development through trade liberalisation, by making trade environmentally supportive, providing adequate financial resources to developing countries and to encourage macro-economic policies for environment and development. Section II deals with conservation and management of resources for development and include four programme areas:

1. Improving the scientific basis for decision making
2. Promoting sustainable development
3. Preventing stratosphere ozone depletion
4. Preventing transboundary atmosphere pollution

Section III talks of strengthening the role of various groups in implementing its objectives and policies. Finally Section IV discuss means of financing its programmes.

Another non-legally binding authoritative statement of principles for a global conserves on management, conservation and sustainable development of all type of forest were finalised.

It also results in two legally binding conventions, i.e., convention on climate change and convention on bio-diversity.

As a result of this conference, in Feb 16, 1993 U.N. Commission on sustainable development was installed as a Functional Commission of UN
Economic and Social Council. With a main task of effective implementation of RIO conference. Earth Summit +5 a special session of UN General Assembly at New York on environment was held in June 1997 to find out “How far the committed nations had gone from Rio”\(^{17}\) and It was found that “Planet’s ocean, forests and atmosphere are still in trouble and its population of poor people is growing.\(^{18}\) Extreme disappointment was realized. Global warming is still on rise with 112 million loves carbons released in air in past 5 years.\(^{19}\) Deforestation rose from 11000 sq. km to 15000 sq. km a year.\(^{20}\)

Same consideration of sustainable development was raised in Earth charter prepared by Non-Governmental Organisations gathered together in Rio de Janeiro whose General Principle 4 secure earth’s abundance and beauty for present and future generations accepting the challenge before each generations to conserve improve and expand their natural and cultural heritage and to transmit it safely to future generations. Its second Benchmark draft of 18 March 1997 during Rio Second +5 forum oath for caring, protecting and restoring the diversity, integrity and beauty of planet’s ecosystems and to take precautionary principle in case of risk of irreversible loss/damage to environment and to safeguard human rights and regenerative capacities of Earth and to share equitably benefits of natural resource use and a healthy environment among nations, between rich and poor, between males and females, between present and future generations. Earth charter’s II Benchmark draft of 11 April, 1999 gives an idea to act
with restraint and efficiency when using energy and other resources and reduce, reuse and recycled materials and to rely increasingly on renewable energy sources such as sun, the wind, the biomass and hydrogen.

All this is needed for Humanity which can live on our lively planet only by adopting the mode of sustainable development.

While talking in favour of integrated assembled and common approach of different nations towards sustainable development such as these steps taken by Worldly Community, though it is praiseworthy to talk of these steps, still we can’t boast of complete effectiveness of these efforts as if we will watch latest concerns about environment. only one phrase will be enough to conclude i.e. "increase in polite efforts means decrease in effectiveness of steps taken and result is triumph of loosing target".

2.3.4 Subjects of concern for Sustainable Development

Therefore, sustainable development, is a concept so vast and vague that every other concept can fell into the domain. We need sustainability in development for what? "To survive or to live". People often talk the sustainability in terms of survival. Life is not to survive. Life is to enjoy, to live but we are still surviving. If this is the sustainable development, then we have already achieved this goal. But if it is not, then goals have yet to be achieved.
To come out triumphantly what we need is a rational, clear and progressive approach about few subjects, which have a direct and concomitant relation with environment, though there are lot of subjects regarding this phenomenon but we can concentrate on few.

2.3.4.1 Population

T.R. Malthus describe that throughout the animal and vegetable kingdoms nature has scattered the seeds of life abroad with most profuse and liberal hands, but has been comparatively sparing in room and nourishment necessarily to near them. The germs of existence contained in this earth, if they could freely develop themselves would fill millions of worlds in the course of few thousand years.\(^{21}\)

Same have Ehrlich explained with an example of multi-implication of human population in course of time. He denotes doubling time of world population has been 1,000,000 years, 1000 years, 200 years, 80 years and 37 years. Conclusion is clear: population of growth can no longer be sustained.\(^{22}\)

According to Malthus population has various positive checks whether arising from nice or misery which in any degree contribute to shorten the natural duration of human life. He enumerated it as unwholesome occupations, severe labour and exposure to seasons, extreme poverty and nursing of children, large towns, excess of all kinds, whole train of common diseases and epidemics, wars, plague and famines. He
also give a concept of preventive check by way of restraint from marriage.  

According to Malthus one way out of dilemma of over population is birth control and not a higher yield of agriculture product whereas according to Ehrlich for a sustainable future birth control and a sharp increase in level of food production is the only solution to overpopulation.  

Writers like Rachel Carson argued that while most alarming assault by man on environment is contamination of air, earth rivers and sea with dangerous and even lethal material, pollution is for the most part irrevocable, chain of evil it initiates not only in world that must support life but in living tissues is for the most part irreversible.  

In universal contamination of environment chemicals are sinisters and little recognised partners of radiation in changing the very nature of world, the very nature of life. Chemical sprayed on croplands or forests or gardens lie long in soil entering into living organisms passing from one to another in chain of poisoning and death.  

Chemical war is never won and all life is caught in the violent crossfire. She advocated that methods employed in controlling such pollution should be such that they do not destroy us along with insects. Disease carrying insects become important where human beings are crowded together, especially under conditions of extreme poverty and
deprivation, where sanitation is poor, as in time of natural disaster or war. She declared that chemicals had been used and are being used with little or no advance investigation of their effects on soil, water, wildlife and man himself.

Future generations are unlikely to condone our lack of prudent concern for integrity of natural world that supports all life. She left it on general public to want a wish to continue our present road or not.²⁵

She rejected the concept of mere food production impliedly which is now-a-days by using chemical fertilizers and rather draw a line towards sustainable use of chemicals for a sustainable future of mankind.

Now it can be very clearly realised that root of most of the problems rather it will not be wrong to say all of the problems is human beings when he is in excess. By controlling population not only by Thomas Malthus way of late marriages or restraint of marriage but by imposing legal obligations, wanted results of sustainability of future can be gathered.

Other synonym of this word when it become in excess is *curse*. Malthusian theory of population increases geometrically whereas natural resources increase arithmetically. Can prove it as a curse rather it is proving specially for third world or for South Asia. Development has direct relation with population increase.

More the population, less the development, because energy is wasted in fulfilling basic needs of growing population. How the policies
can work for the development. How life would be improved. How a better quality of life can bequeath for the posterity as well as for present generations.

Recent situation visualised the world population as 6 billion persons and is still growing at the ratio of 1.3% per year with an average annual addition of 78 million persons during 1995-2000. It will reach 7.2 billion by year 2015 million persons per year during 2010-2015 according to medium variant projections. In 2050, population is expected to reach 8.9 billions and could be 10.7 billions according to high variant projections.

1/5th of world population lives in more developed regions including Australia/New Zealand, Europe, Japan and North America. Remaining 80% live in developing countries of Africa 1.3% Asia and Oceania (33%) and Latin America and Caribbean 8%. Less developed regions are expected to absorb 98% of population growth between 1999 and 2015.

What it will and is resulting into? Poverty and income inequity! World Bank defines poverty as an income of less than 1 US $ per day using exchange rates adjusted to local currency. By this measure the absolute number of people living in poverty increased from 1.2 billion to 1.3 billion with a decrease of such ratio in East Asia. But an increase in Latin America, Middle East, South Asia and Sub-Saharan Africa as according to Data's of 1987-1993.
It also results into growing gap between rich and poor. Disparities have widened at international level. Poorest 20% of World’s population now claims just 1.1% of global income while the richest 20% claims 86%.

Emergence of Second Question give us an idea that How it affects the Health of Human Beings. In Africa where total population (According to figures of 1998) is 778,484,000 people, life expectancy is 53.8 years; total fertility rate is 5.3 children/ woman, infant mortality 86/1000 live births whereas in Asia whose total population is 3,528,877,000 people, life expectancy is 66.2 year, total fertility rate 2.7 children/ woman, infant mortality rate 56/1000 live birth.

But in Europe where total population is 729,406,000 people, life expectancy 72.6 years, total fertility rate 1.5 children/ woman, infant mortality rate 12/1000 live births and in North America total population 304,078,000 people, life expectancy 76.9 years, total fertility rate 1.9 children per women, infant mortality 7.1000 live births.

We have the grounds to compare the human development in Africa and Asia with Europe and America. Survival rate of infants are more in latter than in former. Only reason the facilities are disposable in latter because of less population than in former. More the population, less the facilities. Land area of Africa and Asia is 2,963,468,000 hectares and 3,085,414,000 hectares respectively whereas of Europe and America is
2,260,320,000. 1,838,009,000 hectares and whole of American continent has land area of 3,855,869,000 hectares.

2.3.4.2 Deforestation

In respect of population and area the comparability rather gets triumph in favour of Europe and America. More population more is the need of food. For food more land is called for. Result is deforestation, over the past 8000 years nearly one-half of the forests that covered the earth have been converted into farms, pastures and other uses but human impact on forests didn’t stop there.

Most of the forests were heavily and vigorously altered by humans. One data says that earth has only 1/5th of its original forests remain which is called as frontier forests\(^{29}\) (Original forests). Frontier forests differ significantly from dissected, human modified forests that dominate the planet today. These forests are invaluable for bio-diversity and these are the homes of 50% to 90% of terrestrial species plants and animals that have provided much of food and other basics to human need to survive.

Recent studies favour an idea that these forests store approximately 430 billion metric tons of carbon.\(^{30}\) World Resource institute suggests that World has only total of 39% of frontier forest which is under threat of human activities out of which In Africa 77%of its frontier forest is under such threat of logging, mining, agricultural cleaning and excessive vegetation removal etc.\(^{31}\)
Cutting of forest is going at a speed of light as Africa’s total timber production is 583.5 million cubic meters, Europe produces 478.2 million cubic meters, Central and South America, 71.1 million cubic meters and 392.0 million cubic meters respectively. Asia gets a leading position by producing timber 1,146.6 million cubic meters.

It can very well be assumed that deforestation become a leading issue in species extinction as 27,000 plants, insects animal species are doomed to extinction each year with in rain forests alone. This amounts to 75 species a day. It is 10,000 times of natural extinction rate for planet. World watch report of 1990 gives data of destruction of forest equal to size of Washington state each year which means 1.3 acre each second.

If this trend will go on with the speed then after 5 mass extinction happened on this blue planet (First 225 millions year ago which destroy 90% species latest 65 millions year ago which destroy 60% to 80% species). There will be another mass extinction in which human species itself will extinct by the grace of human activities itself.

2.3.4.3 Access to Health Services

Population crisis give birth to lack of access to health services. Access to health services means to be able to reach appropriate local health services by local means of transport in no more than one hour and is measured as a percentage of population.
In Africa nearly 40% of countries have access to health services whose ratio is below 50% in least developed countries 49% have less than 50% access to health service though ratio rises in Asia and Oceania, Latin America and Caribbean where only 10% countries have less than 50% access to health services.

In least developed countries percentage of infants with low birth weight is 22%, 88% and 79% respectively are immunised against Tuberculosis and measles. In Sub-Saharan Africa 15% infants get birth with low birth weight, 81% and 61% is immunisation rate against Tuberculosis and measles.

East Asia boasts of 9% infants with low birth weight and 96% and 96% immunising rate against Tuberculosis and measles, South Asia has 32% infants with low birth weight and 95% and 80% immunisation against Tuberculosis and measles. Latin America and Caribbean have 9% infant low birth weight and 96% and 89% immunisation against Tuberculosis and measles respectively. In total, world has 17% infants with low birth weight and 89% and 80% immunisation against Tuberculosis and measles.36

2.3.4.4 Education/ Literacy

In pre-school children under weight less developed regions have 27% of countries where 30% or more pre-school children are under weight due to poverty, disease inadequate dietary intake, among least developed countries, 56% have more than 30% of such children due to such cause
Africa has 31% countries with same results. Asia and Oceania have their place with 39% countries in such queue.\textsuperscript{37}

Curse of over population also leads to a major draconian phenomenon i.e. of lack of education. If we consider the data's on base of gross enrolment for primary and secondary school combined what we will find is this that in more developed religions 80% of countries has 90% or more enrolment in schools which means 680 million children.

In less developed regions only 21% countries has enrolment upto 90% or more and 23% continue have less than 50% even which means 240 million children. In least developed countries only 2% countries has enrolment and upto 90% and 57% countries has enrolment level less than 50%.

In Africa ratio of countries having 90% or more enrolment is 13 and almost half of African countries i.e. 48% have less than 50% enrolment in schools. Asia and Oceania stands with 22% countries having 90% or more enrolment and 8% countries than 50% or less enrolment level. Latin America and Caribbean can boast of 35% countries with 90% or more enrolment ratio and 4% countries with 50% or less enrolment ratio.\textsuperscript{38}

Population curse can be reduced by educating people, but what a concept. Illiteracy itself is due to over population. Genesis of adult literacy rate lies in the strength of population, \textit{number of people v/s number of facilities}. Grand is the number of people, more is the lack in facilities,
worst will be the administration and bad will be the results. Population had shown its functional aspect as adult literacy rate has been declining in all countries particularly during past few decades.

It is estimated that overall literacy ratio in World had fallen to 23% in 1995 and projected to reach 21% in first few years of 21st century. UNESCO had created a havoc when it assigned that there were absolute number of illiterate adults in world at its peak in 1990s. Present available data shows that 23% of less developed regions have 50% countries or less literacy rate. Ratio of countries which have literacy rate less than 50% arose upto 61% in least developed countries.

Africa has 40% countries having 50% or less than its adult literacy rate. Asia and others boast of 15% countries in such ratio where Latin America and Caribbean will be in leading capacity by having only 4% of its countries in same queue.39

Can we imagine even, that without literacy, sustainable development is possible? Rather concept of sustainable development has its roots in literacy level without educating people about their right, without primary or secondary education, without proper guidance to improve psychological level to make people aware to make knowledgeable, can we even dream of development which will sustain. No proper education, no proper guidance results into improper, irrational, psychological dilemma, which results into the convictions rather predicaments.
Great peccadillos are there if we don’t consider illiteracy a major obstacle in attaining the goal of sustainable development. Still at this moment though concept is working but if I will talk of South Asia, this concept has no recognition here.

Only lot of news is there about lack of basic facilities for people and when needs are not contemplated How there will be sustainable development? This concept gets commencement only when basic needs are fulfilled about which at least in South Asia cannot boast. Reason being Limited Earth, Limited Resources, unlimited population as South Asians contribute at least 60%-70% to World’s population.

2.3.4.5 Access to Drinking Water

This again results to lack in access to drinking water, the basic need of human beings. Latest as 45% of Delhi ground water is polluted. Report/survey of Central Ground Water Board speaks of this.40 A capital of a nation has such sort of signs. Despite of this that international drinking water supply and sanitation decade (1981-1990) envisaged as its primary goal the attainment of full access to water supply and to sanitation by all inhabitants in developing countries by year 1990.

Yet a large proportion of world’s population still live without access to water on which health and productive capacity defend. In less developed regions majority of population lack access to safe water in 25%. In around 42% of African countries, majority of population live without access to...
safe water. In Asia and Oceania 17% countries lack of access to safe water. In the least developed countries the ratio goes up to 49% and in Latin America and Caribbean only one country “Haiti” has access below 50% to safe water and three quarters of countries have 70% access to safe water.\textsuperscript{41}

2.3.4.6 Sanitation

Same problem lies in access to sanitation which means percentage of population with access to a sanitary facility for disposal of human excreta in the users dwelling or located within a convenient distance of user’s dwelling access hereby means actual use by population.

Data speaks that in more than $1/3^{rd}$ of countries (out of 117 countries whose data had been taken), majority of population don’t have access to sanitation, as compared to access to safe water, lack here is more. In 76% of least developed countries, most people lack in such access. In Asia and Oceania many countries have low or moderate level of access and around one third have near 90% or more access to sanitation. Africa has 76% countries falling in same channel.

If we distribute the data by less developed regions the mode of population than 2.5 billion persons are without access to proper sanitation. What a best example of implementation of World’s development forces.\textsuperscript{42}
2.3.4.7 Adequate Shelter

One more question which gets emergence here whether development includes adequate shelter which means more than a roof over one’s head. It also means adequate privacy: adequate space, physical accessibility, adequate lighting, heating, ventilation, basic infrastructure such as water supply sanitation and water management facilities. In more developed regions, about 60% of countries are with an area per person of 20 square meters or larger.

In case of less developed regions, only 10% of countries do so. For all African countries and three quarter of Asian and Pacific countries floor area per person is less than 20 square meters. In Asia and Pacific only Israel and Philippines report floor area per person of 20 square meters. Chile report less than 20 square meters (This data is available of 37 countries only).43

2.3.4.8 Human Development

Despite of these data we can’t say that international policies haven’t done anything regarding development of human personality. If we compare the data regarding various fields we will find lot of disparities in relation to Human development, e.g. In 1970, when High human development rate was 70.6 year in terms of life expectancy.
It is now 77.0 years. Medium human development in terms of life expectancy at birth was 57.3 in 1970 and low human development in same terms was 42.8 years. But in 1997 both raise to a level of 66.6 years and 50.6 years. Least developing countries shall have a rate of 51.7 years as compared to 1970 which was 43.4 years.44

In terms of Food Security and Nutrition where High Human Development of Only per capital supply of calories of Daily per capita supply of calories has increased from 3,000 in 1970 to 3347 in 1996, low human development has shown a sign of decline with 2,147 in 1970 to 2,145 in 1996.45 Obvious reasons are population increase and due to this, increased Environment Degradation.

In terms of development, if we compare the data’s of carbon-di-oxide emissions from fossil fuel consumption of 1970 which is 14890 million metric tons with data of 1995 which is 23,838 million metric tons. It could be said that there is development but with what effect it is degrading our environment. It can be estimated with increase of earth temperature, respiratory disease, skin cancers etc. etc.

Atmospheric concentration of Greenhouse and Ozone depleting gases have increased from 325.5 ppm (parts per million) to 362.6 ppm and other Green houses gases if combined will be 6264 parts per trillion.46

Outdoor air pollution causes 2%-3% of all urban deaths in Czech republic, Poland and United States. Particulates above tiny particles in
black smog kill 24,000 Britons each year. Nearly 5% deaths and 4% disabilities are attributed to Air pollution in Hungry. More than 70% of deaths by outdoor pollution are in developing countries. In Mexico city, particulars kill 6,400 residents a year.

Air pollution causes more than 175,000 premature deaths in China in 1995 and nearly 2 million cases of chronic bronchitis. Damage to health and building may cast Bangkok $1 billion in 1995 with chronic bronchitis accounting for $40 billions. Besides this Air Pollution causes economic losses. Germany loses an estimate of $4.7 billion in agriculture every year as a result of air pollution, Poland $2.7 billion, Italy $1.8 billion and Sweden $1.5 billion and adverse effect from crop damage hit the floor particularly hard.\(^{47}\)

2.4 Voices of Dissent

Now after this much of knowledge of present scenario issue raised is whether this development which has invited this curse of pollution is sustainable development or whether we can say in other words that there is any need of sustainable and if it is there whether sustaining the current system with its resource exploitation ecological destruction and social problems will be possible.

If this trend of degrading the environment at present rate will go on and we will procrastinate this sacrosanct issue of degradation, day is not far when there will be dooms day. What we will give to our posterity a
perturbed, destructed, mined and so much degraded planet which will not be able to feed our future generation. Sixth mass extinction will result into change of this blue planet (rather grey planet as it can be quoted now) into black planet and Dynamism of this Life Giving Planet will change into a dead corporation.

We will have no answer when it will be required by nymph of nature that what results we have shown because of liberty of utilising the resource as given by nature. We have freedoms as given by nature. Rousseau’s natural man has everything in its command because nature gives us all free of costs. Resources are free of cost given to us by nature. Only cost is of producing it for useable purposes.

Without having any sustainable rather intelligent use of resources we will have to face dire straits those dark paths sustainable forever for our off-springs. Here is and will remain be a need of using everything available on this planet Earth by virtue of Nature’s love. With a great caution, with having a deep sight on our future generations needs, aspirations and even survival.

For this we must develop the vision of society that is both physically and socially sustainable, that is able to accommodate the ethnic and cultural spectrum of human kind in all its diversity and that moreover permits change and human development indefinitely. This we can say the central issue of concept of sustainable development. We should know How
these resources as available should be used in a sustainable future. This spectacle reaches from supporting a small population in luxury to providing a large population with bare essentials.

Sustainability therefore has physical, material, ecological, social, cultural, psychological and ethnical dimensions. A continuation of present trends where a small minority lives in luxury, partly at expense of an underprivileged majority would be socially and ethnically unsustainable in long run.

Human society can be sustainable only. If it is sustainable on all these counts. A sustainable society will have to allow development without physical growth (e.g. population). Its population must eventually remain below a certain limit that is probably less than today’s global population. Steps should be taken to make our development sustainable.

2.5 What could be done?

We can make our resource load compatible with regenerative potential. There can be no sustainability if the regenerative potential of environment for renewable resources, clean air and water and waste and pollution absorption is continuously overused, degraded and destroyed. What absorbed in a large area may lead to inevitable destruction in smaller area. Population must be accommodated within the susceptibility constrains of environment.
In free global market, there is a competitive struggle. For many, it is a struggle for survival and they have no choice. But to sacrifice whatever is available to them to gain a competitive edge, to stay in the game under more difficult conditions e.g. spread of poverty, population growth. This results in a diminishing style. The ecological degradation, resource overuse, unemployment, income loss, sacrifice in health, welfare and human rights.

Only way out is to make an affirmation and protection of diversity of region, to reduce dependence between regions and make regions able to support themselves without withdrawing into isolation. Dynamics of free global market would cause exploitation of potentials of one region after another, until the last regional supply is exhausted and whole global system collapses simultaneously because of its interdependence.

Sustainability is not possible unless resources and waste flows are adjusted to those that a region can support. This constrains population growth as well as per capita income. Focus should be in efficient and sustainable use of renewable and recyclable resources. One more way to attain sustainability is to institutionalised participation of informed and responsible citizens for the innovative potential of society and to increase respect for human dignity and integrity to shape the future responsibility.

Fundamental concepts of systems and environmental science must be further developed in higher education. Individual should have basic
competence in these issues, allowing them to make informed decisions concerning issues of sustainable development system science and environment sciences department should be introduced in collages and universities and should conduct research in all aspects of sustainable development. Government should have its own research institution to prepare long term policy options and decisions concerning sustainable development.

Media should be aware of their crucial role in true and comprehensive information and educating people on all issues of sustainable development. Crucial and important role of Non-Government Organisations in innovative and adaptive response to change should be recognised. Non-Government Organisations should be supported financially. Special consideration has to be given for removal of bureaucratic red tape, outmoded regulations.

Legislation regarding control of population should be strict as apparent in China, which by latest has targeted zero population growth rules stipulating punishment for violators of strict family planning norms in a bid to control its population. It will keep average population birth rate under 1.5% a year according to a decision jointly by ruling party and council. China population is at present 1.259 billion. To reduce population growth it encourages late marriage and child bearing on concept of one child one couple. Strict International regulations with punitive measures to control populations growth should be taken.
Only need is of spirit to do so we can do it if we put our minds to it and we all stand to win spirit is being shown by the instinct of Germans where cycling rate has risen by 50% between 1981-91 cities such as Copenhagen, Freinburg and Groningen have shown through extensive provisions of trams, buses and cycle lanes, pedestrianization and sensible planning policy that it is possible to arrange matter differently to avoid or even reverse car dependency.

In Freinburg, 60% of journeys in 1976 were made by car, by 1992 this had fallen to 46% walking and cycling has increased from 18% to 25%\(^4\) in development is to introduce environment taxes e.g. Commercial and industrial energy tax, fuel taxes, carbon emission tax, over population (where there is more than one child to a couple as in China) tax etc. etc.

2.6 Overview

Concept of sustainability originated first in 1980 with the world conservation strategy of International Union for Conservation of Nature and Natural resources. Its advance sustainability as a strategic approach to integration of conservation and development consistent with objective of ecosystem maintenance. Preservation of genetic diversity and sustainability utilisation resources.

This concept was further elaborated in a language obfuscatory which corrugated the idea of environment as not just the biophysical, natural domain but also socio-political, human components that constitute a
global environment for which there is an independent, world ecology, and an idea of development as not just an economic activity but as a process of qualitative and equitable growth and society as an interdependent world community reliant upon a single biosphere. Wherein global economic growth cannot succeed. With an uneven distribution of wealth and currency the idea of linkages among poverty, inequality and environmental degradation.

Control idea concludes is that development can occur only if and when there is recognition of need to sustain and expand the environmental resource base and economic growth in and itself is insufficient for purpose of development. As a concept sustainability implies that there is an inherent contradiction in the pursuit of basic goal of development through a reliance upon approaches to economic growth that may instead actually result in human suffering.

For many growth is synonymous with increasing wealth. But it can make inequality up to grade not possible to cope with. Concept of sustainable development give us idea that global problems no longer be divorced from a consideration of threatened future. Present trends of resource distribution, gross national product, industrial power trade and trans-national corporation all act to reinforce an uneven distribution of development. This unbalance is mirrored by prevailing fatten of world inequality indicated by measures of poverty, debt, starvation, public health as hereby explained in this chapter.
Concern is not simply one of short term development and prosperity versus poverty but involves deeper issues of distribution and allocation relative to future. As all communities and societies must share the same Earth with each other whatever their difference and inequalities, the threats posed by environment impacts in different parts of globe are threats that affect the future of whole globe.

Poverty can generate a misuse of resources. Immediate survival often promotes an emphasis upon exploitation and over consumption of local resources base that in longer term, only serve to build external dependence. Environment stress leaves areas more prone to natural disasters, exacerbates having reliance upon resource exports and intensify dependency on world markets.

Modern technology has permitted an era of unprecedented growth since 1950 explosion in world population leads to urbanisation, industrialisation and a parallel increase in famine and pollution. Resulting environmental impacts are irreparable e.g. Greenhouse effects, ozone depletion, acid rain, global climate change, marine pollution, toxic waste, desertification and loss of forests which not only result in species extinction habitat loss and reduction of ecological diversity and resiliency, but also contribute to world economic crisis, inflation debt and starvation.

Economic and environmental problems are a function of social and political factors rendering only legal as well technical solutions to
environmental problems. Brundtland report summarised this situation and called for a reconsideration of future decision making based on a balanced attention to environment development and society. "In essence sustainable development is a process of change in which the exploitation of resources, direction of investments, the orientation of technological development and institutional change are all in the harmony and enhance both current and future potential to meet human needs and aspirations."

It also gives an idea that sustainability rests on the tenets that technology and social organisation can be both managed and improved to make way for a new era of economic growth.

Major drawback which can be assumed is lack of correct data. Sustainable development is roused only when we have exact data to compare our growth in positive terms by having a glance on canker prosperity. A monitoring process which should be effective is needed.

Secondly, the basis of energy growth is flow positive is it in relation to future of human prosperity. Law has to regulate the conduct of positive development for securing the right and wanted development by making strict implementation of effectively controllable legislation so that this concept shouldn’t be eloquent only in academics but also in practical way and walk of that precious human life which we have got only once.

Questions arise, Are we moving towards a sustainable future? Are we leaving the polluting society on the threshold of a new ecological
society. Still not, we have to work hard to reach a sustainable future. All existing policies work done by all government, work done by industry and non-governmental organisations and individuals are not enough to reach sustainability, they can only be considered first steps which are important. We have to accelerate transformation process, to elaborate the policy strategy and instruments in favour of sustainable future. It is important to re-emphasise that actions from all kinds of actors are needed. It is sometimes realised that government has to play a crucial role in developing environmental policies of course role of governments at different levels is necessary and important but government actions will be successful if implemented well by participation of citizens, private institutions and by obedience of law. It is only effective implementation with merger if people’s will can make sustainability a truth.

As environmental problems are global in nature. These are not restricted to one nation boundaries, so second step after National Government is step taken at International Level Multifacet and ensembled efforts are needed at international level. Inter-government institutions have to co-operate with government institutions to develop and realise the sustainability. Rio 1992 has emphasised the importance of international co-operation not only between national governments but also particularity between governments and societal groups. Sustainability gave us a normative component of shared responsibilities. In fifth European action programme for sustainable future make realised the responsibilities of state
for future of mankind and planet. Responsibility is not only of Governments alone but also shared by individuals e.g. citizens, consumers, transporters, agriculturists, industrialists etc. Share responsibility here draw a contour that everybody has the opportunity to contribute to a sustainable future, must not hesitate or fail to do so.

In conclusion we need a strict regulations which must curb existing unsustainable aspects of society in direction of a sustainable society by means of focussed programme and actions. Secondly, business also needs to get involved; they cannot stay out of debate on the major world issues of environment and development. Business must take sides they must actively work for a lasting future and be compelled to do this in order to stay in business. These actions must not be isolated actions by government and business but join ventures, co-productions.

There is joint responsibility therefore the need for a joint action which otherwise is rare as Rio de Janeiro conference shows e.g. Attitude of U.S.A. in particularly was heavily criticised because of delaying climatological negotiations and treaty of bio-diversity. Non-Government Organisations named U.S.A. the most environmentally hostile nation on planet. Despite of these leakages, bond of such efforts are still hopeful of a bright and safe future as never before had there been such an opportunity to make an inventory of problems and possible solutions, to analyse and prepare them for political decision making. It was a need of finishing touch
but that didn’t because the issues to disappear from political agenda – we should see this conference intermediate stage in long run ahead.

Mankind is entering in a new stage of development in which a reformulation of relation between society and environment is taking place. These are signs of hope that can be seen as the first indications of new era. Though sign of despair are numerous than sign of hope but sign of hope are also indicators of social reconstruction which is taking place. Social reconstruction implies a redefinition and remodelling of all that was seen as a normal and usual as it was normal to think that growth could last forever and natural resources could be used without limits. Now careless use of energy is anti-social. Emission of environmentally polluting substances become deviant behaviour and this has an impact on all the aspects of life. In last as change is the law of nature, we can hope and act for a positive change for a positive future which would be sustainable.

In totality, sustainable development has a deep relation with environment. If Environment is the body sustainable development is its soul without proper caring for environment we are making our own sarcophagus which will be enough to prove this that age of strife is going on. To get sustainable development we have to firstly control over population. Which if is properly arranged means a boon and benediction but otherwise is a burden and a curse without any solution.
Every other measure to get development has firstly to pass through the chin of population. Secondly policies of sustainable development based on exact, accurate, scientific, original and sociological data regarding factors deteriorating environment. Data will play the primary role in making policies. Thirdly, though at international level, efforts to make and implement policies have been emancipated from core of every heart. But still it lacks in a force of certain type to make policies implemented, without whose no sustainable development is possible.

To make policies more effective we need an effective implementing machinery with strict punitive, measures physical punishments. Law can play the game of effectiveness only when it has appropriate force and energy in form of appropriate punishments.
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