



## **We and the Environment**

by

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**I** consider it as a great honour, to be called upon, to pay homage to our Late Guru Prof. S.K. Bose, the first Professor of Mining in this our great reputed Alma Mator, The Indian School of Mines, in the form of a Memorial Lecture in his memory. I am grateful to Prof. T Kumar, Director - Indian School of Mines and Prof. Gurdeep Singh for providing me this opportunity. The Institute of Gurudom, as it is called today, has played the most important role in the lives of our ancestors as can be referred to any of our religious scriptures. Sadly, it is loosening its hold in the Global Modern Material World dominated by secular and commercial considerations - devoid of spiritualism which has been the life and soul of our Bharat as repeatedly said by Gandhiji and Swami Vivekanand.

Man is the only unique and privileged species on this planet; one among the billions-bestowed by God with living conditions; which has the power of thinking, speech and decision making. Yet, man right from the day one, when born, needs support, training and development, unlike the other rest of 84 lakh species. Human brain has over 100 billion cells, 26 billion neurons with 1000 connections and cross connections between each. It is like a Vast Universe - Our Rishis and now scientists confirm that this man's Microcosm is same as Macrocosm of Universe. The whole life is a learning process and we need teaching, guidance and role models to follow for every new activity. There are 3 main stages in our life equally important, where our Teacher – The Guru plays very vital role. First is the Mother till the child grows up to 13 years, considered important impressionable age. In our society divided in 4 Ashram's and 3 Gunas - Brahamacharya - which means life of discipline and self control, is the age of learning and if given proper attention and devotion influences the rest of life. Our Teacher- Guru at this stage of education and training is very important so that Brahamacharya can happily pass on to householder's Grahast Ashram which in fact materially supports all other Ashrams. Third stage is when we complete our Grahast

Ashram responsibilities to enter Sanyas and we need a spiritual Master for this purpose.

## **Salutations**

Prof. S.K Bose was our Guru at the most important stage of our studies and I salute this great man with the Traditional Indian saying “Guru-Brahama; - Guru Vishnu; Gurur Deva Maheshwara; Guru Sakhshat Par Brahma – Tasmai Guru Dev Namah” I am doubly devoted to Prof. Bose as he had been in Bengal Coal Company which I joined in 1955 after graduation from Dhanbad.

The subject chosen for the Memorial Lecture is Environment. I have broadened the scope as I want to treat it from holistic and not narrow - divisional angle. “We are as we think”. Our mind can make or mar anything. A stable and devoted mind with faith can move mountains. Science and Technology has made tremendous progress in our material world but not in our inner world. No one, therefore, knows how to tame the mind and thus our environment - which greatly depends on our mental set up. The great world scientist Einstein also could not comprehend the mind and treated it separate from matter in his famous equation  $E = mc^2$ . Being a Jew, having suffered at the hands of Hitler, he helped America make the Atomic Bomb but regretted this as most painful irony of history when Hiroshima Explosion brought first havoc of science on the mankind. Our minds need to be trained to pay more attention towards environment than time and effort spent in enjoying benefits of industrialization. A trained and stable mind helps to develop our attitude into a habit. If we succeed in this, we automatically care for environment as our ancestors did in the past by worshipping the 5 natural elements - called Panchbhootas. I can cite any number of examples in my life starting from (1) Coal Mining- annual safety weeks with housekeeping as one of the items. (2) Bailadila Mines in the thick reserve forests of Bastar - getting best Environment Award in 1972- from Late PM Smt. Indira Gandhi (3) Master Plan for Kudremukh in Western Ghats in 1970 (4) Rehabilitation of Kiribaru Mines in Saranda forests now in Jharkhand in 1973 / 74 (5) 10 years plan with 2 million tree planting every year at Neyveli in Tamilnadu - now a model for others; all these were before environment became a serious issue.

## **Introduction**

Environment as defined by “COLLINS COBUILD ENGLISH LANGUAGE DICTIONARY” means (1.1) all the circumstances, people, things and events around them that influence their life (1.2) the particular surroundings in which they live or exist, especially a region that has particulation land, sea, or weather conditions (1.3) is the natural world of land, sea, air, plants and animals that exists around towns and cities.

By the same dictionary – Environment word is, therefore, used in several different ways e.g. A child can easily adjust to changes in its environment; Could the college provide a stimulating environment? It was alien to plunge her into such a totally alien environment and culture; Are we influenced more by environment or society? There could scarcely be a less promising environment for an amphibian than the desert; Science offers us total mastery over our environment and over our destiny; we are fighting pollutions to protect the environment; The secretary of state for environment.

Common in all the above statements are the two factors; 1. We and 2. Environment. We are therefore always influenced by the environment which depends on the region, time and the society. We, in turn, also influence the society and environment of the region. We and environment, therefore, are intimately interlinked or some call it inseparable. To understand the implications we must study their basics.

## **Earth – The Unique Planet**

Evolution of the world started with a Big Bang. Let us not worry now at the various theories and explanations of the cycles of evolution, dissolution and involution. In the process of entropy, the Universe is still expanding and will continue to do so till it dissolves. Among the billions of planets and galaxies, Solar System with Earth is one which has some stability. Planet Earth is the only oxidizing island in the anoxic Universe and for keeping it oxygenated, iron plays and will also play the crucial role. The increase of iron abundance (also Ferrous: Ferric ratio) from surface downward is an indication that ours is an oxygen deficient planet and seclusion of oxygen hungry element like iron in the deeper region is a blessing to the oxic life.

In science, “Environment” is defined as the subtotal of physics and chemistry of air (atmosphere), water (hydrosphere) and soil (pedosphere of lithosphere), where living things live. For humans, it also includes economic,

social and cultural factors. Environment is a bandwagon with scope and space for all. The Natural Scientists, Basic Scientists, Technologists, Artists and Humanists, Economists, Politicians and even film stars, each of them views the environment through his looking glass, tinted with respective experiences, convictions and opportunities it can provide. Thus Global Warming (for Physicists), Pollution for Contamination (for Chemists), Industrial Effluent Treatment (for Chemical Engineers), Endangered Species (for Biologists), Deforestation (for Geoscientists), Soil Salinization (for Agriculturists) and Resources Crunch (for Economists) are the typical issues that dominate modern environmental scenario.

Environmental problems are normally faced with three standard measures (i) Curative (ii) Preventive & (iii) Symbiotic. (i) Curative measures are temporary and subject to checks and balances of Nature (ii) Preventive measures such as population control and basic education are long lasting but can be subjected to interference from human choice and freedom (iii) Symbiotic measure of co-existence and sharing responsibilities among the planetary partners (man, animals, plants) are beneficial and long lasting – sectoral (anthropocentric) approach leads to skewed developments, aggravates environmental problems and defies solution, while holistic (eco-centric) approach heals and harbours sustainability. On this, E.M Foster lamented, “How can Man get into harmony with the surroundings when he is constantly altering them?”

Let us not forget that Earth in this Universe is a rare object and we are also a privileged species to be here. Present form of life in this planet is considered possible because of:

- (i) Ideal distance from Sun with protective shields which keeps a narrow temperature range (average 15°C), and Ultra Violet Rays within limits.
- (ii) Gravity field and daily rotation within limits.
- (iii) Unique differentiation of matter by natural selection giving rise to Core (hot), Mantle (fluid) and Crust (lithosphere) thin enough to quench and other requirements
- (iv) Hydrosphere and (v) Atmosphere with Ozone protective layer serving unique purposes.

## **Evolution of Life**

Evolution of Organic World took long period by Natural Selection through a series of Geological events of Diastrophism – prominent one the elimination of Mesozoic reptiles by massive meteorite bombardment, about 65 million years ago which resulted in mammalian evolution leading to the appearance of man.

In long 4000 million years history of earth, 3000 million years of inanimate differentiation followed by 1000 million years of organic evolution, the earliest hominid is known to appear 3-5 million years ago and the modern man only 15000 years ago.

Our scriptures Vedas-Upanishads explain very meticulously the evolution of this Universe and the life and our planet – which is now being acknowledged by the scientists – in Quantum Physics. All the 84 lakh species and the entire Universe including our planet are made out of 5 elements called Panch Bhutas comprising of Space, Air, Agni (fire), Water and Earth by a process called Panchikaran. Man among the 84 lakh species is the only which has been bestowed with (1) Power of discrimination called Vivek to plan, select or reject (2) Power of speech (3) Power of thinking and its application (4) Faith.

## **Human Being – A Unique Species**

Science now accepts what our Scriptures say – starting with Copernican discovery treating man as the centre of the creation and that man will continue to decide future of life on earth. Swami Vivekananda has espoused our ancient scriptures that mankind has divinity in him. God made man in his own image – gave him his full potential but left him free. It is, therefore, man's choice to rise to the heights of Saint-respected society leader or dive down to depths of wretched life of a terrorist and destroy the creation of God which bestowed kindness on him.

## **Evolution of mankind**

The evolution of man, one among the 84 lakh species, has been a gradual process starting from a cave life. Stone Age and Agriculture; security, safety and creation of basic needs received his first attention. Basic needs varied with the regions and timing of the year. In the lands of West with harsh climates, barren lands devoid of water and other natural handicaps, man had to face lot of hardships and all attention was focused on

his surroundings – The Environment i.e. the outside world. Science and later technology were the main tools used to improve their life and living standards. From life of pagan and worship of nature – religions also took birth but west was and is even today ruled by two Monotheist religions. As discussion, freedom of expression and analysis was available only with one Monotheist religion - Christianity - science and technology progressed in Europe with growing renowned scientists and technologists. Their focus was however entirely on the material outside world devoid of spiritualism.

In the East mainly India and China, surrounding environment was easier and less harsh. India (Bharat) appears to be favourite of Almighty, bestowed with fertile lands, rains and perennial rivers, long costal lines, six against 4 seasons and protective high mountains in the north, plenty of sun and wind etc. Attention for creating basic needs therefore did not require full time and special focus. Our elders noticed that happiness and peace of mind does not come with material wealth alone. Attention therefore was directed to inside world leading to spiritualism i.e. science of life. Our saints and Rishis with spiritual life based on meditation were able to realize God – self knowledge, leading to creation of Vedas, Upanishads, Holy Geeta and other scriptures.

In West, based on Agri Economy, several civilizations thrived raising man's life style and living standards from cave to well built houses and luxurious life for the ruling class. Prominent civilizations like Egyptian, Greek, Ottoman, Persian, however got destroyed and eclipsed by regular struggles and wars by Islamic Jihads and Christian Crusades.

In East, China and India flourished by India's Vedic culture. Harappa – Mohenjodaro and Indus civilization over the period, also got destroyed by periodic attacks from west by greedy and cruel raiders mainly Islamic. Indian basic culture of spiritualism however withstood these onslaughts and in spite of large scale massacres, destruction of religious plakhes, absorbed those raiders who stayed back. Multi-culture not new to India therefore, lasted over monotheism which is still struggling among themselves and against other cultures. Change in environment with the passage of time has been tremendously influenced by the man both in East and West because of different beliefs, greed/ego and urge to rule over others resulting in exploitation by one section of Universe over the others.

## **Science and Progress of Man**

Origin of Modern World Environment problems is due to development and advancement of science and technology. Science received a big boost when in 1543, Polish astronomer Nicholas Copernicus revolutionized the old astronomy by stating that it is the Sun not Earth, which is the centre of our Universe. Galileo began with a band in this new cycle of scientific experiments. He invalidated Aristotle's theories of falling bodies. Copernican and Galilean discoveries were changed by the work of Isaac Newton who emerged as the very foundation of modern science.

As discussion, analysis and free expression was taboo in Islam, science and technology development remained restricted to Christian Scientists. Discoveries by free thinking and scientific experiments interfered with Orthodox Christianity mainly Catholics headed by Pope of Vatican. As Orthodox Christianity, being Monotheist was based on one book Bible which has been written and rewritten several times and One Prophet Christ – time and space made several beliefs invalid and inconsistent. To avoid serious conflict between the Pope and the modern thinking states with new scientific ideas, the word Secularism was coined to keep state separate from the influence of Pope. Science and Technology then started flourishing with great speed.

Invention of steam engines based on solid fuels, electricity and electromagnetic devices gave a big boost bringing a change in agricultural economy to industrial society with better implements and armaments. As this was mainly happening in Europe, urge came to move to other unknown plakhes of the planet like Africa, Americas and Far East. Religion played an important role as in regular conflicts between Islam and Christianity, the mood was to discover new plakhes for spread of their faiths and for exploitation using the latest armaments. India being too tolerant with multi faiths and spiritual base, did not believe in violent struggles to spread religious beliefs to other lands by force and further exploitation. Major part of our planet came under the influence of Christian rulers with the help of religion, scientific and technological expertise and their missionary zeal and entrepreneur spirit. As Swami Bhodanand Saraswaty of Sambodh foundation said while delivering lecture recently on "Developing Global Mindset" "When Europeans went to Africa they just had the Bible and Africans had the land. They ceased the opportunity and they had the land and Africans had the Bible."

## **Industrialisation and its Adverse Impact**

European rulers in their own countries mainly Europe and USA, started extensive industrialization based on raw materials from their client states which included India, and expertise they developed and kept on improving. Major disparities in living standards, life styles, income and consumption levels developed all over the Globe – reflecting clear differences and discrimination which one can see between a master and his servant, ruler and the ruled and a rich and poor man. Change started occurring only after end of 2<sup>nd</sup> World War and emergence of two major power blocks – one led by USA and the other by USSR. Nation after nation in Asia, Africa and America got freedom and independence from their European Masters.

Major part of the Globe comprising vast majority of countries had remained undeveloped and thus poor, now got the chance to start their own development and economic upliftment. Within two decades, consumption levels of fuels mainly solid i.e. coal, oil and gas had big jumps which started pollution problems for their surrounding environments. Polluting gases like CO<sub>2</sub>, CO, Nitrous & Sulphur based, along with dumping of chemical and other wastes, caused widespread degradation of atmosphere and water streams. Pressure of population growth and lakh of commercial fuel for rural areas resulted in deforestation and depletion of forests at alarming rates, causing global concern.

There is a global concern over loss of diversity, and extinction of important species, - arising from the reports that if current rate of extinction continues, 24% of mammal species and 12% of bird species will disappear in the near future. Loss of tropical forests is a major cause behind the loss of diversity.

## **Global Concern**

The developed rich nations (earlier rulers) though are responsible for major degradation and pollution of the World's atmosphere, including damage to the protective ozone layer, felt concerned due to addition of pollution problems from the under-developed and undeveloped countries. Atmospheric-Air has no boundaries and scientists have confirmed that activities in any one part of the Globe can affect the entire Universe. Various scientific theories such as “Bootstrap” of Geophrey Chew; “Implicate Order” by David Bohm; “Bells Theorem” by Clauster and Freedman have all arrived at the vision espoused by our Upanishads and propagated by Swami

Vivekananda in the West towards end of Nineteenth Century, of Holistic Universe where every particle is connected with every other particle even at the farthest end of the Universe. Rich developed countries were thus shaken seeing the dangers which could engulf them as they could not enjoy the World in isolation. Environment as such received a worldwide concern.

First World conference on environment was held under the auspices of UN at Stockholm in 1972 on Human Environment. Our Indian constitution of 1950 did not have any provision relating to Environment. Forty Second Constitution Amendment Act of 1976 introduced Article 48-A (Protection and improvement of environment and safeguarding forests and wildlife) and Article 51 A (g) (Fundamental duty which led to a spate of environment laws in the later years. First major Act was (1) Water Act, 1974 (The Water Prevention and Control of Pollution Act, followed by (2) Air Act, 1981 (Prevention and Control of Pollution Act, (3) Public Liability Insurance Act, 1991, (4) Environment (Protection) Act, 1986, National Environment Tribunal Act, 1995, (5) National Environment Appellate Authority Act, 1997. Several laws on forests, wildlife and mines in addition to updating of Indian Statute Book on environment regulation have been enacted.

Alarmed by the likely pollution from the developing countries, rich – developed countries started showing concern by arranging International Meets. In the U.N Conference on Human Environment at Stockholm on 14<sup>th</sup> June -1972, our Late Prime Minister Smt. Indira Gandhi Observed, “It is sad that in country after country, progress should become synonymous with an assault on nature. We, who are part of nature and dependent on her for every need, speak constantly about “exploiting” nature. The inherent conflict is not between conservation and development, but between environment and reckless exploitation of man and earth in the name of efficiency.”

Indian philosophy of Environment was summed up as follows by our Late Prime Minister on 6<sup>th</sup> March, 1980 while launching World Conservation Strategy. “The interest in conservation is not a sentimental one but the rediscovery of truth well known to our ancient sages. The Indian tradition teaches us that all forms of life - human, animal and plant - are so closely interlinked that disturbance in one gives rise to imbalance in the other”.

### **International Meets and Kyoto Protocol**

Damage to the global environment by depletion of protective Ozone layer was pointed out by Sherwood Rowland, a chemist, due to some industrial case-particularly on chlorofluorocarbons (CFCs). His warning led

to UN –Sponsored Montreal Protocol which sought International intervention to control damage to global environment. Earth Summit was held at Rio de Janeiro in 1992 which was a pioneering conference on Green issues and it led to UN Framework Convention on Climate Change (UNFCCC) an action plan termed Agenda –21, though with 13 sticking points yet to be discussed and settled. In 1995 (COP-1) was held and called for protocol with a schedule for reduction of emissions. In December 1997 (COP-3) World countries met 3<sup>rd</sup> time under UN Framework convention in Kyoto, Japan and agreed on a plan called Kyoto Protocol which was signed by 180 countries. Under this protocol 38 industrialized countries have committed to cut their emissions of greenhouse gases to levels that are 5.2 percent below 1990 levels, between 2008 to 2012. USA, the world’s biggest producer of greenhouse gas pollutant, accounting for a quarter of the total carbon dioxide emissions, did not sign along with some others like Russia, Canada, and Australia and threatened to withdraw from the protocol. The fundamental objection of USA was that protocol concentrates on emissions from industrialized countries but does not seek to limit pollution from developing nations like India and China which are soon likely to match those of industrialized countries. The protocol was to enter into force 90 days after being ratified by 55 Governments, including developing countries representing at least 55% of that group’s 1990 carbon-dioxide emissions.

Along with USA – Australia –Canada –USSR and later some oil producing countries like Saudi Arabia and Kuwait etc. raised objections to Kyoto Protocol norms and did not agree to ratify. Relaxing little bit USA delegate did not object to its inclusion in the Marrakesh Accord and even the Johannesburg Document in September 2002. USA also raised the issue, yet to be decided, of Carbon dioxide soaked forests as USA was already working towards cutting greenhouse gases (GHG) intensity by 18% over the next 10 years. “GHG intensity is the ratio of greenhouse gas emissions to economic output.” and USA goal was to reduce it to 151 tons per million dollars of GDP in 2012 from 183 tons per million dollars in 2002.

### **WSSD meet at Johanesberg**

World Summit on Sustainable Development (WSSD) held at Johannesburg (South Africa) from August 26 to September 4, 2005 was attended by over 21,000 Government representatives and 60,000 non-officials delegates from 103 countries and estimated to cost \$ 50 million. Though major issues remained to be discussed in further meets – some small achievements in the form of concrete plans were;

- (1) Water and Sanitation targets were set for 2015 though without any legal binding.
- (2) A 10-year work plan to reduce production and consumption patterns was agreed and developed countries inclined to compensate the developing countries to help them achieve the same goal.
- (3) A World Solidarity Fund has been set up; all countries can make voluntary contributions for encouraging sustainable development.

Some other small gains were like Canada agreeing to support 1997 Kyoto Protocol.

### **Delhi Declaration**

23<sup>rd</sup> October to 1st November, 2005, Eight Conference of Parties (CoP-8) to the UN Frame work convention on climate change, was held in Delhi for 10 days attended by over 500 delegates from 170 nations. A consensus on 13-points giving “new directions” to tackle climate change was arrived at unanimously by the name “Delhi–Declaration”. It was also decided to hold the Ninth UN meet on climate change in Italy next year. There was significant head-way progress and Canada-China adopted cooperative attitudes. Some of the agreements related to (i) Approval of clean Development Mechanism (CDM) report of CDM Executive Board established at Marrakesh CoP-7 meet (ii) To build and enhance scientific and technological capabilities at all levels with R&D and inter-governmental support. (iii) Use of renewable energy towards initiation and adaptation to raise awareness about the Renewable Energy Efficiency Project (REEP) and consolidation of WSSD declaration on renewable energy. (iv) Legal–Financial, Convention issue and other common issues. At Montreal meet December - 2005 the first annual climate conference since Kyoto Protocol came in force, more than 150 nations including nearly every industrialized country except USA, agreed to negotiate a second phase of mandatory cuts in greenhouse gas emissions beyond 2102 which include carbon dioxide, methane and other gases accumulating in the atmosphere from fossil fuel burning. A new working group was formed to discuss future commitments for developed countries and will start working from May 2006. A dialogue on strategic approaches for long term global co-operation was also launched. Industrialised countries committed US\$ 13 million in 2006-07 to fund the clean development mechanism.

## **Kyoto Protocol Comes into Force**

After long meets – recriminations by few and years of delays Kyoto Protocol on curbing human emissions of heat trapping gases by 2012 took effect on Wednesday the 16<sup>th</sup> February, 2005 amid muted celebrations including a ceremony in the ancient Japanese city of Kyoto where the pact was signed in 1997. UN Secy. General Kofi Annan hailed it as, "Climate Change is a global problem and it requires a global response". Environment group Greenpeace flew a hot air balloon over Kyoto emblazoned with the message "New dawn for the climate." Supporters of 141-nation pact say it is a first step to slow global warming. Only USA and Australia refused to sign blaming the pact too tight and unfair as it did not include some major developing countries like India, China and Brazil which according to them contribute over one-fifth of the emissions.

After 33 years of the first UN conference on Human Environment at Stockholm in June-1972, Kyoto Protocol in its present form is certainly a small first step. If fully implemented it is likely to cut a projected temperature rise just by 0.1<sup>0</sup>C by 2100, according to UN figures. While over 30 gases contribute to global warming and consequent climate; only six of these greenhouse gases are covered by Kyoto Protocol, which are: (i) Carbon dioxide, (ii) Methane, (iii) Nitrous Oxide, (iv) Two hydrocarbons (HFC & PFC) and (v) Sulphur Hexafluoride.

## **Clean Development Mechanism (CDM)**

One of the important steps agreed at Marrakesh was to adopt CDM to reduce GHGs. CDM a Clean Development Mechanism is a scheme under which companies in developing countries can win investments in developed countries for projects based on green technologies which help to reduce greenhouse gas emissions. While developed countries are major contributors to GHGs the relative costs of reducing emission levels are far higher there. Global warming being all pervasive; Kyoto Protocol allows by CDM mechanism, developed countries to meet their commitments of reducing their emissions by an average of 5.2% with reference to 1990 levels during 2008-2012, by acquiring emission reduction credits from outside. The greenhouse benefit of each project is measured and quantified in "Certified Emission Reduction" – CERs, expressed in tonnes of CO<sub>2</sub> emission avoided. The industrialized countries are estimated to need about 2-2.5 billion ton of CO<sub>2</sub> emission reductions to meet their Protocol targets by 2012.

Apart from Substantial Financial gains, CDM offers other advantages also. For this purpose, our Government set up a National CDM Authority in 2003 and a CDM Stock Holder Association – Indian Carbon Market was also formed. According to India's first National Communication (2004), the energy sector contributes about 61% of total GHG emissions.

National Strategy Study on CDM estimates the GHG mitigation potential in key sectors till 2012 as 417 million CER's . There is a vast scope to tap into this new resource as country embarks on the road to repaid industrial development. Because of the CDM, new plants can employ superior technology, and have very low carbon emissions. This provides Indian entrepreneurs with opportunities to enter into bilateral arrangements with developed country partners to gain full advantage of the CER's that are created from their CDM projects. Many projects based on renewable power, transport, waste-management sectors and other areas can come with new technological and financial support. GHG mitigation potential in the power sector lies in adoption of cutting edge technologies such as Super-Critical Power Plant Technology; IGCC (Integrated Gasification Combined Cycle), and through renovation and modernisation of old power plants. CDM is therefore expected to bring both technological and financial resources. CDM is not a magic bullet. At current process of about \$7 per ton of CO<sub>2</sub> emission reduction, it makes relatively limited difference to many socially important clean-energy projects such as, solar lighting, biogas plants and improved cooking stores etc. Yet, it does make the crucial difference between private sector interest, or disinterest in many other clean-energy projects, leading the dice in their favour.

Under the terms of UN Treaty on Climate Change, the signatories, virtually the whole world are to meet each year to discuss Treaty's implementation. World's economy depends on fossil fuels and developing countries will need to use more-not less-which when burned, release carbon dioxide, the key source of rising green house gases into the atmosphere. Problems to be faced and tackled therefore are:

- (i) Fossil Fuels are plentiful, but harmful;
- (ii) Renewable sources like wind and biomass are good but not plentiful;
- (iii) Solar energy is plentiful but not cheap;
- (iv) Nuclear Energy is plentiful but not yet considered quite safe.

Canadian Environ Minister, Stephane Dion was host to the 11<sup>th</sup> UN Environmental Conference attended by about 8000 environment scientists and Government experts from 190 countries, held at Montreal between November 28 - 9<sup>th</sup> December 2005. The Montreal meeting agreed to all but one of the 22 sections of the rules for limiting emissions of greenhouse gases under the UN's Kyoto Protocol, but Saudi Arabia – World's biggest oil exporter and an ally of USA, held up a key section on policing the accord. Jennifer Morgan, climate policy expert at the WWF Environment Group said Saudi Arabia opposed any discussion of what to do after 2012, for its dislike of a scheme likely to force a shift away from oil toward cleaner energies. Developing countries have no targets for emissions under Kyoto's first period lasting until 2012.

### **Flexible Clean Climate Mechanisms**

In addition to Clean Development Mechanism(CDM) and Carbon Trade or Emission Trading to check the rising emissions of GHGs, there is another mechanism under the three flexibility mechanisms called Joint Implementation (JI), also designed to achieve the same goal in a cost effective manner. Projects under JI can be implemented under two or more countries specified in Annex-I of KP with the earnings of Emissions Reduction Units (ERU's). CDM and JI have the benefit of cheaper cost of compliance for the Annex-I countries and transfer of cleaner and more efficient technologies to the developing countries.

Improved technologies can offer a way out of this bind but it requires time, foresight and co-operative effort of all stakeholders. There are two main kinds of technologies, first- the energy conservation-through more fuel efficient vehicles and new hybrid automobiles-hydrogen based vehicles and other gadgets. Second Technology relates to "Carbon Capotes and Storage" involving capture of Carbon dioxide emitted in power plants and other big factories where fuels are used, thereby preventing it from entering the atmosphere. Captured carbon is then pumped into underground storage sites such as empty oil and coal fields and other suitable locations. Some other "Flexibility mechanisms" were introduced in Kyoto intended to make the targets more attainable. The Kyoto talks agreed that countries could meet some targets by encouraging the natural environment to soak up more CO<sub>2</sub> rather than by cutting emissions. Top of the list of these so called "Carbon Sinks" was forest planting. Countries could qualify for carbon credits by planting forests that soaked up CO<sub>2</sub>. They could offset these credits against higher emissions.

## **Adverse Impacts on Environment**

While concern; serious, muted and indifference shown by various World countries has materialized in Kyoto Protocol in February 2005- a first small step, after 33 years of first world conference at Stockholm, warning bells for, “Climate Change” which is much more than “Global Warming”, have started ringing all over the globe. The 10 warmest years on record have all occurred since 1990. In the recent year’s world has got the taste of many kinds of dangers that lie ahead: more severe hurricanes, tsunamis, earthquakes, massive droughts, heavy floods, forest fires, spreading diseases etc. Some of the forecasts and ground realities of serious concern are as follow:

1. A hole in the protective Ozone layer of the size of USA over Antarctica will provide lesser protection to the earth from the damaging rays of the sun-melting polar ice-caps causing a rise in the sea level.
2. Based on scientific studies of the possible impact of Climate Change, officials of the Inter-Governmental Panel on Climate Change (IPCC) are of the view that a 40 centimeter sea level rise likely by 2080 could lead to an annual flooding of 55 million people in South East Asia, as against only 3 million in the rest of the world.
3. Agriculture in tropical countries is particularly vulnerable to climate change according to IPCC officials.
4. Global Temperature was projected to increase by 1.4 to 5.8<sup>0</sup>C over the next 200 years which will change regional climates, physical and biological systems in many parts of the world. Numerous Antarctic species like the huge sea speeders and gooseberries face extinction as waters of southern ocean warm up by two to three degrees in the next century. Antarctic is continentised ice sheet and mid mass roughly of the size of USA and an average 2.3 Km thick relatively supposed to be stable. If the shrinking continues at the current rate, year round average sea ice coverage may drop by 20 percent by 2050 and Arctic may virtually be ice free during the summer days. Open water should also be warm more than ice- covered ocean, because it absorbs upwards 80 percentage (%) of sunlight that hit sit, while ice reflects around 80%.

Qullccaya glakhiers in the Peruvian Andes (South America) has retreated from 3 mts a year between 1970 and 1990 to 30 mts since 1990. In Europe, Alps glakhial area has shrunk by 40% since 1850. In the next half century, all these ancient glakhiers may vanish. Himalayan glakhiers are shrinking alarmingly. Indian Gangotri Glakhiers the source

of Ganga, is disturbingly reducing. Do Kriani Bamak, another Indian Glakhier which retreated 16 mts. between 1992-97, rolled back by a further 20 mts. in 1998 alone. If the massive Himalayan ice sheet continues to melt, it will largely affect the water supply to greater parts of Asia. All major rivers like Indus, Ganga, Mekong, Yongtze and Yellow, originate in the Himalayas. Ice melting could affect the hydrology of a string of Asian nations including India, Pakistan, Bangladesh, Thailand, Vietnam and China.

5. Incompatibility between our planet Earth and the Universe appears to be increasing. While the Earth is becoming warmer, the Universe is growing colder according to a Nobel Laureate. The Universe is expanding and the pace of Universe is forever accelerating. The expansion of Universe is becoming faster and faster and the Universe is destined to grow colder as it's expands.

### **Constitution of IPCC**

In 1988, two UN Agencies established Inter-Governmental Panel on Climate Change (IPCC). The IPCC is a vast network of scientists, approximately 3000, in dozens of countries, devoted to assessing the scientific knowledge about climate change, and the links of climate change to human society. Starting from 1990 every five years, IPCC prepares a report for the global political leadership, known as Assessment Report Three major Assessment Reports and several special reports in the field of climate change have already been prepared and fourth Assessment Report is to be completed in 2007. In addition, to assess various options for stabilisation of concentration of Green House Gases (GHGs) in Earth's atmosphere; estimate for costs of stabilization at different levels have also been made. For instance, if the concentration of CO<sub>2</sub> is to be stabilised at 450 ppm by 2050, it would cost the world approximatley 4% of total GDP.

Carbon dioxide (CO<sub>2</sub>) in the atmosphere was 280 ppm in 1780 when steam engine was invented by James Watt. After 150 years it rose to 315 ppm. In 20<sup>th</sup> century the concentration reached 330 ppm by mid 1970s; 360 ppm by 1990s and is reported to be 380 ppm today. If the current trend continues, by about 2050 the level may reach by 500 ppm. Rapid increase in CO<sub>2</sub> concentration is thus a matter of serious concern. Thomas Stocker of Physics Institute of University of Bern, Switzerland says in an article in "Science" that present levels of 380 ppm are the highest recorded during the last 6,50,000 years. It is further stated that when GHGs levels were 500 ppm

some 20-40 million years ago, sea levels were around 100 mts higher than to-day. Global Geological Scientists have found that ocean levels are rising twice as fast as they were 150 years ago.

Scientific evidence on human induced change is now overwhelmingly and generally accepted across the World. Human society has, therefore, no choice but to put in place both adaptive and mitigation measures to reduce and avoid if possible, the inevitability of impacts that would affect human health, availability of water resources, threat to coastal areas around the world and loss of bio diversity to name a few.

### **Doubts on Kyoto Protocol**

There is lot of skepticism even on a small step, called Kyoto Protocol, taken after 33 years of first World meet in Stockholm in 1972. Harvard Professor Rob Stavins says, “It is too-little, too fast.” USA—the largest polluter (1/4<sup>th</sup>), Australia and important developing countries like India, China, and Brazil etc. with over half of GHG emissions are not included. For developing countries and even for others there is no clear thinking beyond 2012. Some say Kyoto Protocol was a way of getting the ball rolling. Some other say, “It was a waking up the world to the seriousness of the problem.” While European Union has taken their Kyoto targets seriously and is confident to achieve better results and much earlier, USA does not appear to be. Response of US President Sr. George Bush at the 1992 Earth summit was astonishing and disappointing. US President said, “American way of life is not up for negotiation.” His son President George W. Bushes sided with his Vice President Dick Cheney, in denying that a global warming problem ever exists disagreeing with his treasury secretary, Paul O Neill and his administrator of Environment Protection Agency, Christine Whiteman who says that - There is definite link between the two. A dithering Japanese Government was forced to accept the KP because of strong anti-GHG public opinion. Whether American people can also force their Government is a billion dollar question?

Adverse effects of Environmental degradation linked to consumption are manifesting in different parts of the world, where dithering continues even on a small step of reducing GHG emission rates. Conference of Parties (CoP) of the United Nations Framework Convention on Climate Change (UNFCCC) is the highest body constituted (but without any legal authority) which negotiates climate- change related issues and commitment of nations to deal with them.

## **Environment a Holistic Subject**

Indian Union HRD and Science & Technology Minister said at Eighth Conference of Parties (CoP-8), A purely economic and technological solution to unsustainable forms of production and consumption is an impossibility because production and consumption are social acts and unsustainability is primarily a social problem. The phenomenon of climate change encompasses a vast range of extremely inter-connected issues and developing countries should build their scientific and technological capacities to ensure that products left over chemicals and affluents could be used in other processes as raw materials. We need quantum jump in energy efficiency and a shift from non – renewable to renewable sources by applying the principle of decarbonisation. A new Environment sustainability Index has been developed on 21 elements of environmental sustainability, a holistic list which factored in not only environmental pollution and health but Government management efforts, contributing to protection of global natural resources, and a country's capacity to meet environmental challenges overtime. Among 146 countries India ranked 101<sup>st</sup> - USA - 45<sup>th</sup> and UK - 46<sup>th</sup>. On this clean and Green Index Top 5 clean were Finland, Norway, Uruguay, Sweden and Iceland while bottom 5 were Uzbekistan, Iraq, Turkmenstan, Taiwan and North Korea.

## **Ethical Living vs. Overexploitation**

It requires ordinary common sense to summarise with disappointment that God's unique and special species " Human Being", having power of thinking; discrimination, planning, decision making : power of speech and to meditate with faith; unlike the remaining 84 lakh species – is out to shorten the life of this Special and Unique Earth Planet. The first mantra of the first Upanishad Ishavasya, states that "God has given enough on this planet for the needs of every species – particularly the human being. If man consumes without greed and stealing other's share- there will be no scarcity and man can live happily and peacefully for 100 years". Gandhiji frequently used to refer to this Upanishad stating that there is enough for every one's needs but not for his greed. If man was also devoid of these special powers- bestowed by God – Our planet would look like a big jungle where survival of the fittest- The powerful will be the general rule. Now if human being – The powerful greedy and clever, start ignoring the natural laws and ethics laid by our Spiritual Masters and eat away other's shares - what is the great difference between man and animals. It can be termed as exploitation of

simple, weak, poor honest sections of the society. How long Nature can allow this to happen? Is any body's guess?

Ground realities suggest that perhaps human beings are "Eating Up" the Planet Earth fast. World Wide Fund for Nature (WWF) report on the state of World's Ecology says that, "Humans are consuming 20% more natural resources than the Earth's biological capacity to produce them. According to the Living Planet Report 2002, humanity has been running on "Ecological Deficit" and by 2050, we would be using 80% to 120% more resources than the Earth's capacity to produce, which means resources equal to two Earths will be needed to sustain humanity 50 years from now. For assessing consumption levels of various countries, concept of "Ecological Footprint" has been used. A country's "Ecological Footprint" is the total area required to produce food and fibre it consumes, sustain its energy consumption and provide space for its infrastructure. Assessment made in 1999 suggests world average of 2.28 hectares per person. UAE topped the list with 10.13 hectares followed by USA at 9.7 hectares per person while average Indian consumed only 0.28 hectares. On this basis Global Ecological footprint covered 13.7 billion hectares while the Earth's productive capacity was only 11.4 billion hectares. Consumption levels of developing countries with large population rising still further, and poor economics are bound to rise rapidly and substantially. As rich – developed countries are reluctant to reduce their consumptions, the deficit between productive capacity and actual consumption will increase with the passage time. The deficit of 20% at 1999 level will therefore rises substantially and planet Earth's degradation will hasten than presently estimated.

### **Role of Human Being in the Questionable Future**

Facing the World Scenario as it is- we have to ask certain basic Questions like: - (1) Can we check further degradation of Global Environment? (2) Is it possible to match Global Ecological Footprint with Earth's Global productive capacity by reducing both individual consumption levels and a drastic reduction in human population? If not (3) what is the likely future of our Planet Earth? There can be many more questions.

There will be difference in opinions, interpretations, explanations solutions and suggestions to face the various problems. We must, however, remember that time does not wait for any one and Nature does not spare anyone. No two human beings are similar unlike the similar behavior of other 84 lakh species. The World has become small, may call it a Global

Village - but desires and aspirations to become happy are increasing – not decreasing. World has changed and transformed based on scientific and technological achievements much more, in the past 50 years than in the past 20 centuries. While outer-world - our environment - the material world is totally transformed, what about the change in the Inner world of Human beings which controls the thinking process, behavior and actions? Human being is a unique species - the only one which requires support, education, and training at every step afresh from the time of birth of every single child. As Swami Partha Sarthy, Head of famous Vetanthic Institute, says, “Hardware of all species is fixed but software of human being alone is dissimilar and changeable unlike rest of the 84 lakh species whose software is predetermined by the God.” Human software which controls the thinking process, behavior and actions is controlled by the society in which he is born and brought up. God has given the privilege of creating environment as per requirements, only to the human species and no one else among the other 84 lakh species. Eastern Spiritual Masters firmly believe that God – The Unknown Universe force also called conscious- Atma, Parmatma is present every where and in every species. The privileged Human species therefore, can create the environment which can turn into heaven or hell or in any other form. God, however, requires his natural laws to be followed strictly and violations get punished as per Karma Law of Holy Geeta. In our prayers we all chant three times our “Shanti Mantra”, which is one for the Godly natural forces, one for the outside world and one for our inner world - i.e. for our peace of mind”. Recognised by Science, Human beings and the entire Universe along with 84 lakh species are made of 5 elements called in our ancient Scriptures as “Punchbhootas”, which are Space, Air, Fire, Water and Earth. Living species in addition to the gross body have a mind and limited elements of intellect. The Human Beings- God’s special and Unique Species has in addition to gross body - subtle mind and subtler intellect and Vassans (past accumulations of impressions and perceptions). Human beings have 5 Sense Organs (Gyan Indriyas) which are Eyes, Ears, Nose, Tongue and Skin which guide the functioning of 5 action organs called (Karm Indriyas) which are Hands, Feet, Mouth, Productive and Excreting parts. Functioning energy is provided by 5 Praan Indriyas, which are Praan, Apan, Samaan, Vuyvan and Udaan. Human body is thus a complex unique entity called by some as a Mobile Chemical Factory with unmatched energy, computers, communications and self repair systems. Unlike other 84 lakh species human beings evolution- development and dissolution is always a continuous cycle process starting from zero. Evolution and devolvement of human from its inception has been slow – gradual and tedious depending upon the

environment in which he is born and the stage of development of the society where he is born. As mentioned earlier in West due to harsher climates man devoted most of his attention and efforts to improve his living conditions and life style. There is thus a direct link between the knowledge and techniques which got developed over time and the man's living conditions and his life style such as- Cave Man in Stone Age to Agriculture- Industry – Electricity and Oil Age – Computer – Communication related life and now the ongoing knowledge society.

### **Impact of Religious Beliefs on Environment**

Human societies are guided by their Leaders- Spiritual, Political, Administrative and Business, developing their own way of life and civilisations. People go by their role models as Holy Geeta says, "People at lower levels do what their seniors and leaders do." With the evolution of man from Stone Age to Agriculture, and so on- Western countries were influenced by mainly three religions all from "Abraham" starting with Jews, then Christianity and later Islam. All these were, however, Monotheist with one book and one Prophet - and their own do's and don'ts. Taboo list due to rigidity and lack of tolerance, rivalries and conflicts were quite common, thus vitiating environments for stable developments. Jewish the oldest did not believe in proselytisation and have suffered severely several times at the hands of despots and cruel Dictators. Only Hindustan could provide them safe and peaceful shelter when they were persecuted in various western countries. Parsis when persecuted by Islamic fundamentalists also found safe heaven in Bharat. The other two Monotheists, Christians and Islam, have a long history of Jehads and counter crusades. During the last 10 years life of Prophet Mohammed, Saudi Arabia was completely taken over by Islam through 82 Jehads. After his death his followers led by Khalifas spread over Europe- Africa and series of attacks towards East into Bharat causing wide spread destruction and uprooting of old societies and civilizations. From 10<sup>th</sup> century onwards, Christians also started counter crusades and the enmity between them continues till today. We can imagine the adverse impact on environment which existed and these conflicts created, Stability in any form was the natural calamity.

As open dialogue, discussion and analysis of religion is a taboo in Islam – its followers - Muslims in spite of conquering several countries - could not progress beyond Agri- society with the consequential impacts on the environments, they created and lived. Christianity however saw a big change. With the coming of Pope based in Rome (Italy); other countries

mainly Germany, England, France etc. had their own Scholars, Philosophers, Intellectuals and Scientists who could not agree and remain tied to rigidities parted from Vatican Pope's Catholic controls. Secular word originated when Pope's influence was separated from the Government Administration. The freedom gained resulted in quick development and progress of science and technology upgrading their living conditions and life styles from Agri to Machine Age, Electric, Oil Gas and now Knowledge Society. These religions dependent to one Prophet and one book generally missed Spiritual and universal brotherhood elements.

In the East, India - China and others- spiritualism, multi religious, Universal brotherhood and one Eternal God i.e. Sanatana Dharma formed the base of faiths and religions which believed in tolerance and respect for others feelings. Hinduism as Dr. Ambedkar called it, "Common Wealth of Religions," formed the base of Hindus, Buddhists, Jains, Sikhs and several other faiths and sects; and Taoism, Shintoism with several common concepts prevalent in India, China, Japan and other countries. As tolerance was built in these religions- major wars and conflicts were far and few. Very few - almost nil - attempts were made by them to attack other countries and force their religions on other societies. East had therefore more stable societies and thus better all-round environment.

### **Happiness and Spiritualism**

Happiness is the most common objective of all human beings. In India and other Eastern Countries, climate and living conditions were easier and people had not to struggle much to meet their basic needs. Religion based on spiritualism and presence of God assumed every where (omnipresent-omnipotent and omniscient), people respected and worshiped nature and even animals like cow on which their daily life and survival existed. Requiring very little time for outdoor activities people particularly our Saints-Rishi called as "Life Scientists", spent most of the time on in-ward research. Questions asked were- "Whom am I? What is our Goal"? Why God has created this world of our unique planet Earth? The whole world was considered as one entity with divinity present everywhere; Inner research gave rise to Vedas, Upanishads, Holy Geeta and other spiritual scriptures the essence being; (1) "Ayatma Brahman" – Our Atma is Brahman (God) (2) "Aham Brahmasmi" – I am Brahman i.e. Divine is within me. (3) "Tat's Asmi" -You are Brahman and (4) "Pragyam Brahman" – Whole Universe is Brahman; our Maha Vakyas.

Relevant to our subject of environment is man's basic Dharma i.e. to live in harmony with Nature. In India, nature's 5 elements- Space, Air, Sun, Water and Earth were given the stature of Gods for worship. Destruction of environment was considered crime and protection of all environmental elements was built in the faiths. This culture has continued for centuries in spite of frequent raids by Islamic and others from West and European (UK mainly) rule over India till 1947. Country's forest cover was approx 40% and environment in general was satisfactory.

### **Disparities and Ideological Environment**

In the West particularly, Europe and Americas, after the chance discovery of those vast Lands by Columbus, scientific research and technological advancement brought a big change in their living conditions and life styles. For raw materials and cheap labour European countries entered India, Africa and other countries using Trade as the front face and newly developed armaments for forcible occupations wherever necessary. Church was also used for conversions to build up their own followers and clientele. Europeans including Russia also fought between themselves to enlarge their own share of Kingdoms viz first world war in 1914-18 and 2<sup>nd</sup> in 1939-45. Most of these countries became rich by ruling other countries when they had the full liberty of exploiting slaves' resources for their own benefits. These countries became the largest polluters and consumers due to the Wealth, Industries, Science and Technology they had at their command. Clash of interest started after countries all over the world started gaining freedom from foreign rule after World War II. These rich developed countries got affected as development of under - developed nations added their polluting share to the already polluted world. Monotheist religions do not believe in rebirth. There are umpteen attractions in our modern World to enjoy them as one can in this life. Youth and rich all over the world have now plenty of opportunities and enjoyment gadgets. In spite of economic prosperity there is a great disparity between rich and poor. Rich in Towers by luxurious life styles are polluting the environment; while poor living in adjoining slums pollute the environment by living in unhealthy conditions. Poverty is a curse while richness is an opportunity depending on how it is exploited. Can this disparity be reduced and eliminated? It needs efforts from both sides. Unfortunately Ideologies political systems and human personal whims are so different that there are no easy solutions. Amount spent on Armament Industries is significantly more than it is spent on development schemes and poverty eradication. To bring the world closer

where every one shows concern for the environment keeping others requirements and interests, Conflict resolution is essential. – But how do you achieve that? Man is led by his 5 sense organs and a desire has no limits. Some changes in Islamic scriptures to remove doubts, adverse feelings and actions against other faiths are desirable. Conversions and incentives to increase followings and prosperity at the cost of others by different religions, particularly Monotheists, needs to be banned. Every human being has the birth right to profess, express and worship. The way it satisfies his mind and intellect. Organized religions with rigid dogmas of do's and don'ts should not be allowed to exploit the poverty and innocence in the name of God, who cannot be a monopoly of one book and one prophet at a particular space and time of the History, which has seen sea changes since then. The only constant in this universe is the change and that if respected can create healthy environment and stable societies.

## **Happiness and Environment**

Evolution of Our Universe is assumed to have started with a Big Bang which involves continuous cyclic process of Evolution, Dissolution and Involution with Blakkk Holes and Grey Holes. World's great Powers with enormous material wealth and armaments must understand that this Unique Planet with living species is a mere spec in the universe, one among billions – bestowed by God with privileges of living conditions. Man with false ego and pride of power and wealth is nothing more than a mad animal harming himself and others.

Morals and ethics, set by our Spiritual Masters in the initial stages of Evolution of human beings; and Natures Universal laws if ignored can only hasten the destruction of our planet and mankind. Material wealth alone does not give happiness. We need both wealth and spiritualism for the ultimate happiness. Mankind in the Yester - Agri society; and even today people who have contended mind, discipline and self control, are more happy and peaceful minds than the powerful greedy, egoist and arrogant rich people. You do not require a heavy bank balance, more number of cars and palatial buildings to give you happiness and peace of mind. If you have enough for a decent respectable life and can share the extra wealth with others, that really gives the satisfactory happiness one hankers for. Swami Vivekananda repeatedly exhorted a blend of Eastern Spiritualism and Western Science and Technology. How do you achieve this and is such an environment at all possible?

## **Western Science faulted as Universe is one Entity**

Scientists today are coming to the same conclusion what our Rishis found through their inward research, that there is a single force which pervades everywhere and is both the cause and effect - you may call it "God" "Parmatma", "Brahamaan", "Consciousness" – or by any other name. Starting with revolutionary discovery by Polish astronomer Nicolaus Copernicus that it is sun and not earth which is the centre of Universe, Newton in mid 19<sup>th</sup> century proposed a three dimensional world and mechanomorphic God. Einstein with his general and special Theories of relativity and with equation  $E= mc^2$  proved that waves were also particles and matter is a form of energy. Space and Time was found to be another important 4<sup>th</sup> dimension and Electricity with Electro-magnetic sources and the Light traveled as waves and not in straight line. Einstein however faulted when he continued to treat-Mind and Matter as separate and not emerging from one single force. Niels Bohr and Max Plank brought The Quantum Theory which states that atoms further are constituted of sub-atomic particles (200 discovered till now), move not like continuous waves but in discontinuous waves, as discreet quanta of energy. Heisenberg in 1927 supported by Schrödinger showed that Fundamental particles like Electron will remain eternally unknowable to man through his theory of Uncertainty. Quantum Physics and the modern reputed Scientist Stephen Hawking- now believe in a fifth dimension to the Universe – which our spiritual Masters thousands of years back called as "Spirit - or Atma or Brahmaan or God. Scientists in their efforts to know the mortar and bricks of universe now find that it is difficult to measure the sub-atomics as they are moving so fast and have such a short life, that no human made instrument can ever position them. In fact these small quanta particles called" Quarks" etc are 99.9999% vacuum with extremely fast moving energetic unknown substance which differs from one species to another. The entire Universe is made of these small cells which are interconnected to every part near or far. Two similar Quanta particles at different parts of the universe are interconnected, which supports our theory of telepathy-practiced so often by our ancient Rishis. We are all and every thing else in this universe is made of these basic cells. Our spirituals Master said - God conscious is in every one of us. We are all in fact packs of such Quanta particles with different dresses and addresses or forms and names. Our rebirth cycle law thus believes that we never die – but we only change our body, form and plakhe. Science has recognized now that (i) An atom is same as Universe. (ii) Microcosm is Macrocosm (iii) Micro body is Macro body (iv) Micro-mind is macro mind.

People who enjoy the benefits of advances in science and technology have moral obligation to ensure that environment is not disturbed and degraded. Lester Brown- a reputed Naturalist has summed up in one sentence total human Wisdom, “We have not inherited this earth from our fore-fathers but we have borrowed it from our children.” So we are morally obliged to return to our future generations in a better shape without damage and destruction. Swami Chinmayananda used to say, “This body is a gift to us from the God. What we give him back is our gift to God.” Heaven promised by the Monotheist religions for which so many sacrifices are made, will never be better than the Heaven we can create to day on our planet earth, with the modern goods and services available becoming better and attractive everyday. Teachings of the religions would have been different if we put back the clocks in space and time there by avoiding conflicts, Jehads and crusades. Sita would not have been abducted and Hanuman would not be required to fly to Sri Lanka if today’s mobile phones were available.

## **Our Planet can be a Paradise 2**

Heaven and Hell are creation of our own mind. Atharva Veda says,” Man’s paradise is on Earth. This living world is the beloved plakhe of all; it has the blessing of Nature’s bounties; Living in a lovely spirit.” Problems have arisen because science and technology has progressed purely on material world and the material which is gross as science needs proof before final acceptance. Our body is gross matter but our mind is subtle matter, intellect still subtle matter. Anger, feelings, thoughts, ideas, love, hate are all products of mind and intellect falling in the category of subtle matter which is also energy according to Einstein’s equation  $E= mc^2$ . The mistake Einstem made was that he plakhed mind separate from matter and considered light as the fastest speed element. The Quanta particle’s energy is so fast much more than light that it can never be measured by the man. Yudhistar in Mahabharata rightly answered to Yamraj that mind is faster than light and the fastest a man can think.

Einstein again made a serious mistake when he insisted that “God does not plakhe dice,” – Which means there cannot be any uncertainty anywhere in our knowledge of the world which is ruled according to Einstein by Spinoza’s God of harmony. Niels Bohr gave him the celebrated reply, “Nor is it our business to prescribe to God how he should run the God.” Einstein would say “God is a mystery, but a comprehensible mystery.” Vedanta says “How is it possible to comprehend God, the Infinite without finite intellect and still more finite sense knowledge.” Kena Upanishad says,” Who can

know the knower.” Max Plank also supported Niel’s Bohr in his reply to Einstein for “God who plays dice.” He further said “To understand certain happenings beyond our control- referable to “Divine providence,” We must have a faith. Faith is a must, reason is not enough. Vivekananda said, “Faith’s not belief, it is a grasp on the ultimate.”

God does play dice in our favour or against depending on our faith and actions. Geeta’s Law of Karma recognised by Science as, “Every action has a reaction”, plays a very important role in our life. Degradation of Environment cannot go unpunished. Science has not yet been able to predict even weather, accurately beyond 2 to 3 days. There is always a butterfly effect and there are any number of violent hurricanes, cyclones, storms and tsunamis. People fear that nature may be striking back. They are not mere coincidences as miracles and calamities in such major disasters including earthquakes come to light frequently. It is the God’s will- the way he plays dice through Natural happenings. Dr. Deepak Chopra calls such happenings and coincidences of miracles or calamities as synchro - density. Faith in God and the way we think and act influence to a great extend our future and destroy.

### **Harmony With Nature – The Key to Healthy Environment**

It should be now very clear that making or unmaking of environment is purely in our hands, depending upon our relations with each other in this worldly life. Our ancestors in the early phases of man’s evolutions have lived happily in Stone- Agri and even Machine ages without causing damage to their environments. Trembles started with heavy industrialization when European powers ruled over rest of the world. After Second World War, conditions have starting worsening with newly freed countries joining the bandwagon of consumerism. Greed breeds more greed and there is no end to it. Unless Eastern spiritualism mix is ensured with Western materialism proper equity in environment cannot be ensured. By worshiping Panchbhootas- the five elements which make this universe, full protection to environment was provided. Our Vedas prohibited wasting or polluting water and natural resources. Trees and forests were given special emphasis to protect from storms and for keeping a check on the growth of deserts as vegetation aid’s precipitation. Our scriptures valued a Tree greatly as published in SPWD wasteland news - Nov 97 – Jan 98 and in other plakhes- the worth of a tree was estimated in hard cash as:

- (i) Generates oxygen worth Rs. 5.5 lakh
- (ii) Creates air pollution controls worth Rs. 10.5 lakh.

- (iii) Recycles fertility and soil erosion controls worth Rs. 6.4 lakh.
- (iv) Creates shelter for birds and animals worth Rs. 5.3 lakh
- (v) Provides flowers, fruits, medicines and other good worth Rs. 4.3 lakh

Total value of a tree is Rs. 33 lakh. A Sanskrit Shloka in Varikahmahima says, “Ten Wells are equal to one Vapi, ten Vapis are equal to one Pond, ten Ponds are equal to one Son and ten Sons are equal to one Tree.

Forests plays very important role for the protection of Bio - diversity and maintainace of ecology and overall environ. In addition to Carbon sinks they are excellent and sure sources of water supply; enhance natural beauty for warm welcome to cool the heat of tourists. Eco-tourism, maintainace of water sheds and carbon –sinks are therefore likely to attract lot of business. Forests store huge quantities of biomass, they play an important role in managing global climate. Plants use CO<sub>2</sub> during photosynthesis and retain carbon in biomass acting as carbon sinks. Among the watershed managements – best example, is New York city. It gets 90% of its water supply from Catskill and Delaware watersheds, where 75% of the area constitutes forests. The city decided to invest US \$1.5 billion over a 10 year period for promotion of soil and water conservation and improved forest management to kill the microbial and phosphorous pollution at source instead of building a filtration plant costing US \$ 6-8 billion with annual maintenance of US \$ 300-500 millions.

## **Conclusion**

Before closing I will like to dwell briefly about our perceptions, about strange happenings, coincidences termed as synchrodestiny, calamities and miracles, some having great influence on environment, through God playing dice in our favour or against us. Spiritually speaking, Geeta’s Law of Karma plays a great role as 75% of happenings in our life are due to “Pra-yabhda” – our past actions. It will be interesting to recall such happenings in one’s life and perform ourselves in way that is convincing to God i.e. Nature; so that dice is played in our favour. I can recall any number of such instances from my personal experience and in fact I can write a book, if time permits, sometimes.

Here I will briefly mention 2/3 instances which can be elaborated on some suitable occasion. I was born in a small town in interior West Punjab in a rich Agri Family. As there was no electricity I completed my high schooling in 1946 under lanterns. The only mode of transport was horse.

Studying in Prince of Wales College Jammu (J&K) for higher studies – when back in home during summer vacations, was caught in country’s partition holocaust; reduced from riches to rags and last 3 years in restarting life and studies again. Here in this great Alma Mator, though I was always first in class till 3<sup>rd</sup> year- missed the Pickering Medal in final year by 2 steps. God, however, made up not only this loss, but also gave me the privilege to deliver convocation address, as Chairman Coal India, at the Diamond Jubilee Celebrations in 1986. Second reference is to my stint in Neyveli Lignite Corporation. I decided to join that plakhe against advice by several friends. Being the first Hindi speaking – Non Tamil, North Indian and religious man - to be chairman after 25 years existence of that largest Southern Industrial Complex- lying in dumps operating at about 45% capacity. After a serious confrontation in 1981 for improving work culture as first essential step towards betterment - One against the rest - God’s dice helped winning the tough battle. NLC improved up to 130% capacity and since then there has been no looking back. More interesting as told by my Minister and Secretary; everyone from top to bottom in Government, political and other fields desired me to stay there instead of my moving to Coal India as Chairman, disproving the bogey that language, caste, creed and region are bottlenecks in our country’s progress. I owe a lot to my teachers specially Prof. S.K.Bose who always had a smiling face and composture of peace – knowledge and maturity. If we can train our minds which I strongly feel has great impact on influencing our environment. It will be the real tribute to that Noble Soul. I repeat, “We are as we Think”, and so is our Environment.

Thank you and Jai Hind