P: ISSN NO.: 2394-0344
E: ISSN NO.: 2455-0817
Remarking An Analisation
RNI No.UPBIL/2016/67980
Vol-I* Issue-VI*September - 2016

Environmental Implications on Nature, Legislation and Sustainability

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Abstract

Conscious of the intrinsic value of biological diversity and of ecological, genetic, economic, scientific, educational and aesthetic value of biological diversity and its components conscious also of the importance of biological diversity for evolution and for maintaining life sustaining systems of the biosphere.

(Preamble, 1992 convention on Biological Diversity)

Using the law to conserve nature, however, involves finding solutions to some complex policy issues. Looking space for the species and habitats to conserve often counters with legitimate social interest, such as economic development. This means nature conservation laws can be controversial policy area. If pubic interest is to be safe guarded with the protection and conservation of nature-sustainability is the answer. While discussing Indian Laws and Policies to protect and conserve nature this paper has real focus on the international concept of sustainable development. Valuing nature conservation are other than utilitarian and anthropocentric. Nature conservation i.e. conserving the wildlife and biodiversity as the matter of duty vested in the public and statutory bodies of every nation. Duty to enhance nature conservation is a duty that is not tide to protected areas only.

Nature conservation is highly valued if the Law of Land involves degree of damage and the form of compensatory measures.

Nature of the Study

Non Empirical (Doctrinal)

Methodology

Descriptive and Analytical

Sources

Sources used are secondary

Keywords: Conservation, Mitigation, Adaptation, Utilization &Climate Change

Introduction

Man is both a creator and moulder of his environment which gives physical sustenance and affords him the opportunity for intellectual, moral, social and spiritual growth. In the long and tortuous evolution of the human race on this planet, a stage has been reached. When through the rapid accelerations of science and technology, man has acquired the power to transform his environment in countless ways and on an unprecedented scale. Both aspects of man's environment,the natural and man-made are essential to his well-being and to the enjoyment of basic human rights – even the right to life itself.

(Stockholm Declaration, 1972)

Human race as a whose is completely and totally dependent on the gifts of nature, right from oxygen, water, food, clothing, shelter and what not. Not only the human race even the living organisms are wholly dependent upon the natural environment for their needs and existence. As a matter of fact nature has given us everything for our survival on the mother earth but there is no reciprocity. In the last few decades there have been warming signals like global warming signals like global warming, depleting water, earthquakes, tsunamis etc.

It is high time we may relive the challenges of future exploitation by conserving and preserving the nature and by making sustainable use of it. Conservation is a worldwide issue and the severity of problem varies from country to country. Environmental law in India, like in the rest of the world, has been a steadily growing phenomena. In the recent part, some significant changes in the law and jurisprudence governing the state of environment of India has been witnessed. This paper is a panoptic view of nearly the dimensions of the natural environment, i.e. Social, economic,

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legal, aspects and scientific analysis significant in regard to protection and preservation of nature.

Environmental Implications on Nature at Local Level

The increased threat of environmental catastrophe in the present century has been due to the greater utilization of the natural environment and to a considerable extent the changed nature of waste material and effluents. Water, Air and Land are such natural resources through which man derives his basic sustenance and our dependence upon them is absolute as they constitute the support system of our existence and survival. Human being put preserve on the natural resources when it increased consumption in areas where resources are already scarce leads to depletion of Natural Resources.

Mankind activity leads to depletion of environmental resources at regional and National Level for instance water resources local resources, land degradation and various types of pollution like Air Pollution, Solid Waste and Littering, Sewages, Aesthetic Pollution etc.

Noise Pollution is also a form of Air Pollution. It is and undesired sound leading to various defects. Human Population Explosion has also exerted pressure on all available resources leading to increased noise[1]. In addition to causing annoyance, stress, and even hearing loss for humans, it causes distress to wildlife, especially in sensitive areas[2].

Pollution is the ultimate direct consequence of manmade activities which bring long term changes in the local economies and ecologies.

Environmental Impacts at the Global Level

Acid Rain

This is also known as acid deposition. This is the combination of dry deposition of acidic substances and precipitation. The acidic conversion is usually the result of fossil-fuel burning which releases, sulphur dioxide and nitrogen oxide into the atmosphere. Acidic aerosols in the atmosphere are deposited via rain, snow, fog (wet deposition) or dry particles primarily due to discharges of gaseous sulphur oxides and nitrogen oxides either from *anthropogenic* sources or *natural* sources. In the atmosphere, these gases with water to form acids.

Ozone Depletion

Ozone layer shields the earth from dangerous (cancer-causing) ultraviolet (UV) from the sun). Chlorine gas from CFC's speeds breakdown of ozone in the ozone layer. Ozone depletion in the loss of destruction of the stratospheric ozone layer. This is usually affected by the catalytic actions of compounds containing chlorine, fluorine and/or bromine (*Ozone hole* was first detected in 1985. This hole appears every Southern Hemisphere spring (August to October) before disappearing during the summer months (December to January).

Climate Change

Climate scientists now generally agree that the Earth's surface temperatures have risen steadily in recent years because of an increase in the so-called greenhouse gases in the atmosphere, which trap heat from the sun. One of the most significant of these gasses is carbon dioxide (CO_2)**,** which is generated when fossil fuels, such as coal, oil and natural gas are burned (e.g. industry, electricity generation, and automobiles) and when there are changes in land use, such as deforestation. In the long run, accumulation of CO_2 and other greenhouse gases in the atmosphere can cause global climate change a process that may already be occurring.

The Loss of Biological Diversity

Biological Diversity means the variability among living organisms from all sources including, interalia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part. The effects on loss of biodiversity

1. It threatens our food supplies, opportunities for recreation and tourism, and sources of wood medicines and energy.
2. It interferes with essential ecological functions such as species balance, soil formation, and greenhouse gas absorption.
3. It reduces productivity of ecosystems.
4. It destabilizes ecosystems and weakness their ability to deal with natural disasters such in floods, droughts, and hurricanes, and with human-caused, such as pollution and climate change. (The conservation of biological diversity is one of the goals of CBD 1992).

Conservation and Major Challenges to Conservation

Conservation is to preserve existing species and habitats for the future. Instead of trying to preserve only the best, we may reach more imaginative about the sort of natural heritage we want, or need, to meet future circumstances. Various reasons behind species and habitat conservation are Scientific Study, aesthetic or cultural value, economic and social benefits, genetic material for Pharmaceutical products etc.

The deep ecology perspective is informed by the idea of symbiosis. It calls for the closer identification of the human reef with nature that could provide a rational for nurturing higher ecological consciousness. A nonanthropocentric environmental approach could contribute to a change in popular consciousness and given conservationists the means to argue in less egoistic and more emphatic, terms[3].

Although greater importance in placed on the commercially permitted species but above all the good reasons to take a precautionary approach to conservation.

Economy and Environment

Economic growth bears a dichotomous relationship to environmental degradation.Growth may result in excessive environmental degradation through use of natural resources and generation of pollution aggravated by institutional failures.

The classical economic concept has been at the core of modern civilization where in man has continued to plunder the natural resources so as to increase the extent of this wealth. But the flaw of the theory is that the concept of development has been made a dependent function of materialistic living[4].

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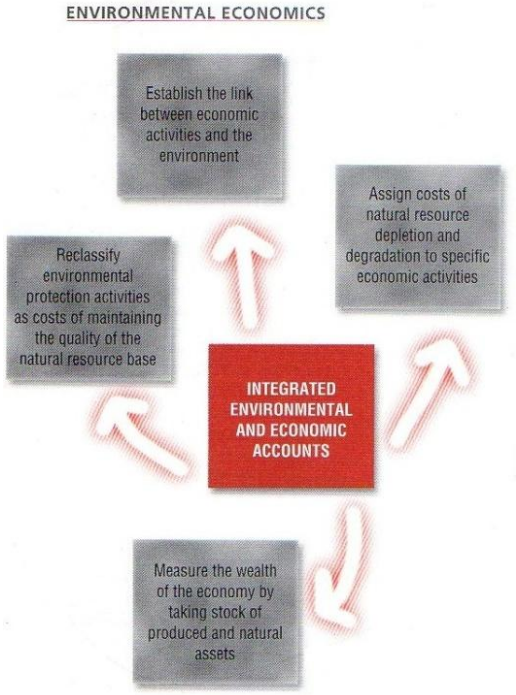


The economist define income as the maximum you can consume without eventually impoverishing yourself. But the green economists argues that the sustainability is fundamental to the concept of income.Green economist set up to formulate natural resource Accounts that can measures the impact of resource degradation[5].

Conventional national accounts under value natures contribution to our welfare and so make for unsound economics. Tons of pollutants are dispersed into the environment and the consequence of this is what we today define as the 'Climate Change'. Focusing on such defects, green economists set up to formulate natural resources accounts that can measure the impact of resource degradation.

The Green Economists set out the design of cost-benefit analysis that can enable Policy makers to make better choices[6].

The Kyoto Protocol, 1997 which has been guided by Article 3 of the UNFCC, which is aimed at stabilization of green house gas concentrations in the atmosphere at a level.That would prevent anthropogenic interference with the climate systems within a time frame sufficient to allow ecosystems to ensure that food production is not threatened and it is a sustainable maxmer (Kyoto Protocol, Article 3&4) gives three concepts called as clean Development Mechanism (CMD), Emission Trading (ET) and Joint implementation (JI) on the basis of optimal targets (cost-benefit analyses), instrument choice (market based instruments versus command and control, taxes versus tradable emission permits and so on (UNFCCC Article 3 (1).

GEF – Global Environment Facility

GEF is also created as a financial mechanism for eco-friendly projects in developing looking for speedy economic growth and reduction of poverty. But the issue was contribution of money by member nations. The GEF mobilises new and additional grants to meet the excess court, that poorer nations incur to achieve 'global environmental benefits' in four areas; climate change, biodiversity, international waters and the depleting ozone layer.

The GEF Council – Comprising 32 Nations – Pledged US $ 2.75 billion replenishment for the new 4 years cycle beginning in June 1998. This included US $ 0.76 billion carried over unallocated from US $ 2 billion pledged in the early (1994-1998) cycle. France and Germany promised extra money if arrears were recovered, largely from the U. S. and Italy. In India, grants in the last cycle had amounted to $ 141.4 million. At the mart, India received a new grant of US $ 350,000 for a Delhi – based project to develop a fuel-cell powered bus[7].

Being a U. N. Mechanism, the GEF also plays a role in International Environmental Conventions.

The International bodies like the United Nations Environment Programme, Organization for economic cooperation and Development and the World Bank have come to accept the concepts like Nature is not free give it value (Cost-benefit analyses) in the form of "Natural Resource Accounting".

Responsiveness Towards Nature

Typically, ecosystems have some natural capacities to assimilate pollution. However, these vary considerably with the nature of the pollutant and the ecosystem. In general it is cheaper to reduce the emissions of pollution, than to mitigate it after generation, or to treat the receiving medium or receptor. The impacts of pollution may differentially impacts the poor, or women, or children, or developing regions, who may also have relatively low contributions to its generation, and accordingly the cost and benefits of abatement may have important implications for equity.

E.g. Several organic waste streams may have adverse impacts on human health if ingested, but may have value as plant fertilizer[8].

The global economies are now making efforts to find such a solution. The Earth Summit (1992), Kyoto protocol (came into force in 2005), Copenhagen summit (2009), Cancun summit (2010), Durban summit (2011) and Rio+20 Earth Summit (2012) are some of the instances in recent times when world leaders came together to come up with a global sustainable solution for the challenges being posed by the altering climate pattern. But it has been very difficult for the countries to come on board on the issue. Abiding by the laws of nature and binding oneself to the commitment of environmental protection entails a trade off. The trade off is between cleaner and safer environment and reduction in economic growth rate. The irony is that every country gives paramount importance to economic growth and mass production. So, non of the countries actually want to initiate. Every other country wants to "Free Ride", i.e. get benefits without paying the price. Again this problem can be better understood with the help of Game Theory's problem of 'prisoners Dilemma'[9].

Concept of Sustainability

The Brundtlan Report of October, 1987, which is considered to be the foundation of modern day work on Environment and sustainable

development defines Sustainable Development. Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
It contains within it two key concepts.

1. The concept of 'needs', in particular the essential needs of the world's poor, to which over-riding priority should be given; and.
2. The idea of limitations imposed by the State of technology and social organization on the environment's ability to meet present and future needs.

The concept of sustainable development highlights the relationship between the two i.e. man and his nature. Man can only succeed and prosper if he lives in harmony with his environment. Sustainable development literature value nature for its intrinsic value rather than its utility for human beings[10].

Natural was emphasised as a life support system and as a source of services for the utilitarian life support human kind required to be conserved and preserved not only for present but also for future generations.

Indian Legal Regime

The Legal regime of environmental protection and conservation is not new. However it is expanding with advancing science and the changing needs of the environment. There are several legislations arming at protecting and conversing the environment apart from the environment protection Act, 1986.

Following are certain laws and policies which have this primary focus on the protection of nature and conservation of species with this habitats in India.

Provisions of Water Pollution Act, 1974

At the World Summit on Sustainable Development (WSSD), water was described as one of the key five areas for particular focus, the other four being, Energy, Health, Agriculture and Bio-diversity.

The Water (Prevention and Control of Pollution) Act, 1974 (hereinafter Water Act) was enacted for the purpose of prevention and control of pollution, and for maintaining or restoring the wholesomeness of water. The Water Act was enacted at a time when the country had already prepared itself to be a part of industrialization and urbanization. The need was keenly felt for the treatment of domestic and industrial effluents before they were discharged into rivers and streams.

Air (Prevention and Control of Pollution) Act, 1981

The Air Act contains several interesting features. First, the Act grants discretionary powers to each State Government to designate particular areas as air pollution control areas[11.] Within a declared air pollution control area, neither the Board nor the State Government may exempt a polluter from the purview of the Act. It is mandatory for every industrial operator within an air pollution control area to obtain a permit (consent order) from the State Board.

Environment Act

The Environmental Protection Act is a general and comprehensive legislation designed to provide a framework for the Central Government's co-ordination of the activities of various Central and State authorities established under the previous laws such as Water and Air Acts. It is also an 'enabling law', which articulates the essential legislative policy on environment protection and delegates wide powers to the executive to enable bureaucrats to frame necessary rules and regulations. Since the time it entered the statute book, the Act has served to back a vast body of subordinate environmental legislation in India[12].

Delegated Legislation Under Epa

Environment (Protection) Rules, 1986

The rule-making powers under the EPA are quite exhaustive and have varied dimensions[13]. The Central Government can make rules in respect of all or any of the matters referred in section 3 of the EPA.

The first set of rules passed under the EPA was the Environment (Protection) Rules, 1986. These rules lay down the general procedure to be followed under the EPA, including standards for emission or discharge of environmental pollutants from industries; operations or processes[14], issuance of directions along with procedural safeguards[15], the guiding considerations for prohibiting and restricting location of industries and handling of hazardous substances in different areas.

Environment Audit

The submission of environmental audit report by persons carrying on industry, operation or process has been made compulsory and the same has been incorporated in the Environment (Protection) Rules through an amendment notification in the year 1992[16]. With a plethora of industrial ventures at the take-off stage of development, environment auditing recognizes self-regulation amongst the industry as a means to tailor environmental safe guards into industrial activities[17].

Management of Hazardous Substances

Modern industrialized societies are experiencing the onslaught of hazardous substances and India is no exception.These hazardous substances are generated, used and discarded with high toxicity content which poses a great threat to human society, causing acute or chronic health problems.All this has raised concern to evolve mechanisms for the proper disposal management of such substances[18].

Coastal Zone Management

India has got a rich and diverse coast line which covers more than 7500 Kms. out of which the mainland accounts for 5400 kilometers. These coastal zones have significantly rendered help in the development of natural coastal habitats and contributed to a great extent to the protection of environment. Natural eco-system, and the fragile natural resources characterized by diversity of habitats make the coastal areas of our country ecologically sensitive. But with the passage of time this rich coastal eco-system is today threatened by human activities which are mainly commercial in nature, making it very difficult to maintain its natural state[19].

Eco-Labelling Scheme

The scheme is voluntary and operates at the national level. It provides accreditation and labelling of household and consumer products which meet the prescribed criteria for ECO mark and bears the

Standard ISI Mark of the Bureau of Indian Standards to ensure compliance with the Indian Standards for quality, safety and performance of the product.

Environmental Impact Assessment

Environmental Impact Assessment (EIA) is one of the proven management tools for incorporating environmental concerns in the developmental process and improved decision-making. The growing awareness over the years about environmental protection and sustainable development has further given rise to a strong emphasis on sound environmental management practices through a preparation of Environmental Management Plans (EMPs) to minimize the impacts from developmental activities[20].

Ozone Depleting Substances (Regulation and Control) Rules, 2000

There is an evident need to co-ordinate the Ozone Regime with the Climate Change regime, since some of the substitute-substances to ozone-depleting gases are classified as greenhouse gases under the 1997 Kyoto Protocol to the UNFCCC[21].

India doesn't have any legal binding or obligations under the climate change regime. However, since it also a party to the Ozone Regime, the Ministry of Environment and Forests notified Ozone Depleting Substances (Regulation and Control) Rules, 2000, (ODS Rules), for phasing out ozone depleting substances in a phased manner, thus contributing directly to Ozone Regime and indirectly to the climate change regime. The ODS Rules were notified in exercise of the powers under Sections 6, 8 and 25 of the Environment (Protection) Act, 1986[22].

Public Liability (Insurance) Act, 1991

There have been various legislative attempts to fashion the doctrine of strict liability in the laws relating to the handling of hazardous substances. Public Liability Insurance Act, 1991 (PLIA), is one such law that has been enacted 'to provide immediate relief to persons affected by accidents occurring while handling hazardous substances. The Act provides for immediate relief through public liability insurance to the victims of such accidents. This act provides maximum quantum of relief that can be granted in each case[23].

Protection of Forest and Wildlife – Key Legislations

Forest (Conservation) Act, 1980

The Forest (Conservation) Act, 1980 (FCA) was enacted to contain the large scale deforestation and to provide for the conservation of forests and for matters connected therewith or ancillary or incidental thereto[24]. Restriction on the de-reservation of forests or the use of forest land for non-forest purpose is the essence of FCA. According to the Act, no State Government or any other authority can except with the prior approval of the Central Government, issue orders directing

1. That a reserved forest or any portion thereof, shall cease to be reserved.
2. That any forest land or any portion thereof be used for non-forestpurpose.
3. That any forest land or any portion thereof is assigned by way of lease or otherwise to a private person or to any authority, corporation, agency or any other organization not owned, managed or controlled by Government.
4. That any forest land or any portion thereof is cleared of trees which have grown naturally on that land or a portion of it, even for the purpose of re-afforestation[25].

Biological Diversity Act, 2002

The Biological Diversity Act, 2002 (BDA) was enacted to provide for conservation of biological diversity, sustainable use of its components and fair equitable sharing of the benefits arising out of the use of biological resources, its knowledge and for matters connected therewith or incidental thereto[26].

Wildlife Law – 1972

The Wildlife (Protection) Act, 1972 (WLPA) was passed by the Parliament for the purpose of protecting, propagating and developing wildlife and its environment[27]. Animals are classified as mammals, amphibians, reptiles, fishes, birds, crustacean and insects, coelenterates, and mollusc in the Schedule to the WPA. Animals that are captured, kept, or bred in captivity are called captive animals[28]. Regulation extend to the selling or transferring of wild animals or dealing in with them and various animal articles and trophies. Hunting of wild animals, keeping or breeding of wild animals in captivity and possession of animals articles or trophy against the rules are punishable offences under law[29]. The WLPA provides for setting up of National parks and Sanctuaries where wildlife can receive protection.

Planning Process and Environmental Policies in Post Independent India; Balancing Environmental Concerns with Development Goals

Planning is an important steering instrument of India's democracy. It is based on an iterative process involving interaction between the Centre, the States and the local bodies. Multiple stakeholders participate in the planning process[30]. India's Five Year Plans have played a dominant role in shaping the various developmental objectives of the government, but the protection of the environment is an important objective reflected in almost all our Five Year Plans[31].

The plan envisaged a multi-pronged strategy for sustainable development in the county. The important elements of this strategy were as under empowering people through information generation, dissemination and access; involving industry in both the private and public sectors; integrating environment with decision-making through valuation of environmental impacts; evolving market-based economic instruments as any change would require action in the area of agricultural research to evolve increases in water stress; and initiating action to be able to cope with greater frequency in the event of natural disasters[32].

Assessing the impact of planning process, it can be said that the era of fifties marked a decade of introspection both for the forests and planners, while the sixties were one for shaping those dreams into realities. In the seventies, the earlier in attitude of the authorities was replaced by a greater realization of the problem which was reflected in evolving by a greater realization of the problem which was reflected in evolving legal and institutional framework for the same. The eighties saw a full-fledged activity, of all

concerned directed towards the protection of the environment. In the nineties and at the start of the twenty-first century, development-versus-environment debate was abandoned and sustainable development became a global slogan and a shared vision for dealing with the environment-development issues in a more holistic manner, humanity's survival depends solely on a viable and sustainable planet[33].

As reported in the Daily Tribune dated 26th March,2012; the ShiromaniAkali Dal-BJP Government has stressed upon the following points in its manifesto for next 5-Years Plan from 2012-17 to ensure that environmental degradation is brought to minimum. Relevant parts reproduced as under

"Clean-Up Needs Money, Tough Hand"

SAD MANIFESTO (2012-2017): The SAD Manifesto for 2017-12 had made no promise on environment. That the serious matter has now been addressed is a good beginning. The government promises to launch a "paun, paani, dharti, akash" movement.

1. A separate Environment Ministry will be created and all rivers will be cleaned within two years.
2. Organic farming and bio-diversity to be encouraged, Environment audit for areas where ecology under threat.
3. Ban on plastic and other environment threatening materials to be strictly enforced.
4. Ecology to be a compulsory subject in schools.
5. Environment preservation tasks force to be set up.
6. Subsidy on solar heaters to be increased. CFL bulbs to be given free under a special scheme.
7. Pollution norms for transport vehicles to be enforced.

Where Cash Not Needed, Get Cracking Immediate

Sewage treatment and checking water pollution needs huge investments, but certain areas need only new laws and rules, or implementation of the existing ones.

Following this survey of Planning Process in India from an environmental point of view, it becomes incumbent upon us to discuss in detail some of the Policies of Government of India in the Post-Independence era which were aimed at balancing various Environmental Concerns with Developmental Gaols. A brief overview of this Policy Framework is presented as under

National Water Policy, 1987

Important aspect of the policy is its stress on the maintenance of water quality'. Improvement in the existing strategies and the invention of new techniques, resting on a strong science and technology base, are envisaged to eliminate the pollution of surface and groundwater resources.

National Forest Policy, 1988

The first ever statement on forest policy by the Govt. of India was issued in the year 1894 which broadly classified the forests of India into four categories such as: forests, the preservation of which was afforded a supply of valuable timber for commercial purposes, minor forests and pastures[34].

Policy Statement for Abatement of Pollution, 1992

The 'Policy Statement for Abatement of Pollution, 1992' provides a comprehensive approach for the intergeneration of environmental and economic aspects in development planning[35].

National Conservation Strategy and the Policy Statement on Environment and Development, 1992

This policy makes judicious and sustainable use of country's natural resources in order to meet the basic needs of the people. Conservation Strategy is the key to the policy for sustainable development, which besides serving as a management guide for integrating environmental concerns itself with the developmental imperatives[36].

The primary purpose of the Conservation Strategy and the Policy Statement is to reinforce our traditional ethos and build a conservation society in harmony with nature, and also making prudent and efficient use of resources guided by the best available scientific knowledge.

Wildlife Conservation Strategy, 2002

Wildlife Conservation Strategy, 2002, calls for protecting the interests of the poor and tribals living around the protected areas which need to be handled with sensitivity and with the maximum participation of the affected people.

In 1984, the government adopted a National Wildlife Action Plan (NWAP). The Government has already implemented certain administrative measures for the conservation and development of wildlife in India such as, Biosphere Reserve Project Tiger and Project Elephant.

The concept of biosphere reserves has emerged from the UNSECO sponsored Man and Biosphere (MAB) programme and is an important measure for conservation and development of tropical forest systems.Project Tiger was launched in 1973 with the help of the World Wide Fund for Nature (WWF) and the International Union for Conservation of Nature and Natural Resources (IUCN)[37].

National Environment Policy, 2006

The National Environmental Policy (NEP), 2006, seeks to extend the coverage provided by the aforesaid policies, and fill in the gaps that still exist, in the light of available knowledge and accumulated experience. It is based upon the following three foundational aspirations.

1. Human beings should be able to enjoy a decent quality of life;
2. Humanity should become capable of respecting the finiteness of the biosphere; and
3. Neither aspiration for good life, nor recognition of biophysical limits should preclude search for greater justice in the world.

According to NEP, these strategic interventions besides legislation and the evolution of legal doctrines for the realization of the objectives, need to be premised on a core set of the following principles that would guide the activities of different actors in relation to this policy. Each of these principles has an established genealogy in policy pronouncements, jurisprudence, international environmental law and international state practice[38].

Energy Conservation and Sustainable Development

The Energy Conservation Act, 2001 (ECA), provides for institutionalizing and strengthening

delivery mechanism for energy efficiency services in country and further provides for the much-needed coordination between the various entities.

The Government of India set up Bureau of Energy Efficiency (BEE) in 2002, under the provisions of the ECA, to assist in developing polices and strategies with thrust on self-regulation and market principles within the overall framework of the Energy Conservation Act of 2001.

The broad objectives of the BEE are to assume leadership and provide policy framework and direction to national energy efficiency and conservation efforts and direction to national energy efficiency and conservation efforts and programmes; to coordinate policies and programmes on efficient use of energy and its conservation with the involvement of stakeholders; to establish systems and procedures to measure, monitor and verify energy efficiency results in individual sectors as well as at national level; to leverage multi-lateral, bi-lateral and private sector support in implementation of the Energy Conservation Act and programmes for efficient use of energy and its conservation; to demonstrate energy efficiency delivery mechanisms, through private-public partnership; and to plan, manage and implement energy conservation programmes as envisaged in the Energy Conservation Act[39].

All this can be achieved with the active participation of all stakeholders, resulting in an accelerated and sustained adoption of energy efficiency in all sectors. However, the absence of holistic energy policies as well as the lack of effective leadership and political will has not resulted in the desired outcomes for India as far as energy and sustainable development is concerned. Our primary concern is to the focus on supply of subsistence level energy to our poor population. Further to ensure a sustained GDP growth, India has to grow its primary energy and electricity supply manifold. In the last few years, apart from Energy Conservation Act, 2001, the consolidated Electricity Act, 2003, National Action Plan for Climate Change and the Integrated Energy Policy, 2008 are some of the right steps that government has taken in framing its energy policies. But the ineffective enforcement of law is the main hurdle which needs to be taken full care of to ensure effectiveness of the policie[40].

Moef's Key Activities: Snapshot

The Ministry of Environment and Forests (MOEF) is the nodal agency in the administrative structure of the Central Government for the planning, promotion, co-ordination and overseeing the implementation of India's environmental and forestry-related policies and programmes. The broad objectives of the Ministry are: conservation and survey of flora, fauna, forest and wildlife; prevention and control of pollution; afforestation and regeneration of degraded areas; protection of the environment; and ensuring the welfare of all forms of animal life[41].

In achieving these objectives, the Ministry is guided by the principle of sustainable development and the enhancement of human well-being. These objectives have been well-supported by a set of legislative and regulatory measures that are aimed at the preservation, conservation and protection of the environment. Besides the legislative measures, the National Conservation Strategy and Policy Statement on Environment and Development, 1992, National Forest Policy, 1988, and the National Environment Policy, 2006, have also guided the Ministry's work. The Ministry also serves as the nodal agency for international cooperation on matters pertaining to environment and natural resource conservation[42].

In the preceding years, a number of policy initiatives have been launched that have given renewed impetus to the actions already announced. Some of these key initiatives are described below:-

National Action Plan on Climate Change

India's National Action Plan on Climate Change (NAPCC) outlines existing and future policies and programs addressing climate mitigation and adaptation. The plan identifies eight crore national missions.

1. National Solar Mission
2. National Mission for Enhanced Energy Efficiency
3. National Mission on Sustainable Habitat
4. National Water Mission
5. National Mission for Sustaining the Himalayan Ecosystem
6. National Mission for a Green India
7. National Mission for Sustainable Agriculture
8. National Mission on Strategic Knowledge for Climate Change

Recently, MOEF announced India's intent to reduce the emissions intensity of its GDP by 20%-25% between 2005 and 2020, thus making a major contribution to mitigating climate change. In addition, an Expert Group on Low Carbon Strategy for Inclusive Growth was set up under the auspices of Planning Commission to develop the roadmap for low-carbon development. India's GHG Emissions profile, a summary or five independent studies, shows that India will remain a low-emission economy even in the year 2030. In October 2009, MOEF launched the Indian Network for Climate Change Assessment (INCCA) as a network-based programme to make science, particularly the '3Ms': Measuring, Modelling and Monitoring, the essence of India's policy-making in the climate change space. It aims to bring together over 120 institutions and 220 scientists from across the country.

Mission Clean Ganga

The 'Mission Clean Ganga' Initiative was launched in the first meeting of the National Ganga River Basin Authority (NGRBA) held on 5th October, 2009 under the chairmanship of Prime Minister. It was decided that under 'Mission Clean Ganga', no untreated municipal sewage and industrial effluents will flow into the river Ganga by year 2020. New projects with substantial funding were cleared for the States of Uttar Pradesh, Bihar, West Bengal and Uttarakhand for the development of sewer networks such as sewage treatment plants sewage pumping stations, electric crematoria, community toilets, development of river fronts, resuscitation of canals and public campaigns.

These measures signify the importance and urgency to clean the Ganga, which has such an important place in our culture, and which is so central

to the livelihoods of millions of our people. MOEF is also negotiating a major loan of about US $ 1 billion from the World Bank for the cleaning of the Ganga which is progressing on track.

ICoastal Regulation Zones

Right of the Forest Dwellers

The MOEF, keeping in mind the need for ensuring compliance with the Scheduled Tribes and other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, has undertaken various measures, which include *inter alia*, directing all States, while forwarding / submitting the proposals for diversion of forest lands for non-forest purposes, to take proper care of the rights of the forest dwellers under the Forests Right Act, 2006, failing which, permission for diversion would not be granted.

Pollution Control

Genetically Modified Food Crops

The Genetic Engineering Approvals Committee (GEAC), established under the Ministry, in October 2009, assessed the case for large scale trial and environmental release of Btbrinjal, the first GM food crop in India. Given the important policy implications of the decision at the national level, it was decided that the recommendation for environmental release may be put up to the Government for taking a final view on the matter. Subsequently, however on the basis of views expressed by various stakeholders during public consultations organized across the country (and adopting a cautions, precautionary principle-based approach), a moratorium has been imposed on the commercialization of Btbrinjal, until independent scientific studies establish the safety of the product from the point of view of its long-term impact on human health and environment as well as upon the rich genetic wealth of brinjals existing in our country.

Western Ghats

Given the environmental sensitivity and ecological significance of the Western Ghats and the complex inter-State nature of its geography as well as the possible impacts of climate change on the region, the Ministry has constituted the Western Ghats Ecology Expert Panel which will assess the current status of ecology of the Western Ghats region, demarcate areas which need to be notified as ecologically sensitive zones, and recommend the modalities for the establishment of the Western Ghats Ecology Authority under the Environment (Protection) Act, 1986, which will be a professional body to manage the ecology of the region and to ensure its sustainable development with the support of all the States concerned.

The Himalayas

MOEF launched Phase II of the Himalayan Snow and Glacier Monitoring Programme through the good offices of the Space Application Centre, Ahmedabad, for monitoring seasonal snow cover for the entire Himalayas and monitoring the retreat or advance of the glaciers in their representative basins. A report titled “Governance for Sustaining the Himalayan Ecosystem (G-SHE): Guidelines and Best Practices” was released which put forward some key guidelines related to the governance and management of the Himalayan ecosystem, along with some case studies. Another study titled the “Himalayan Glaciers: A State of-Art Review of Glacial Studies, Glacial Retreat and Climate Change” summaries the State of knowledge on the Himalayan glaciers.

The Sundarbans

The Sundarbans are a key component of the proposed Integrated Coastal Zone Management Project for various initiatives in the region including allocations for eco-tourism, coastal-erosion protection, livelihood improvement of village communities, and the construction of cyclone shelters. Also an Indo-Bangladesh Forum on the Sundarbans is being established to jointly address the issue of the region, recognising that the entire Sundarbans region is one ecosystem, 40 percent of which is India and the rest in Bangladesh.

Wildlife

The Ministry of Environment and Forests has sought to achieve its aim of conserving the protecting the environment by implementing the aforesaid policies and programmes. It has been constant endeavour of the MOEF to strengthen the policy and regulatory frameworks that govern the environment and forests of the country by initiating various measures, both industrial and legislative, to give them a renewed impetus.

The Indian Legal System

The courts in India carry on the legacy of the common law system; a lot of innovative techniques have been adopted by the courts to meet the ends of justice say the PIL and Judicial Activism. The Courts follow the adversarial system of justice and a person may represent himself through an advocate or he/she may appear in person.

For this reason mainly Indian Judiciary for more than two decade has rightly assumed a pro-active role of Public educator, Policy maker, super administrator and more generally amicus environment. The development of environmental law in the country has been largely the story of India Judiciary responding from time to time to the complaints of its citizens against environmental degradation and administrative sloth.

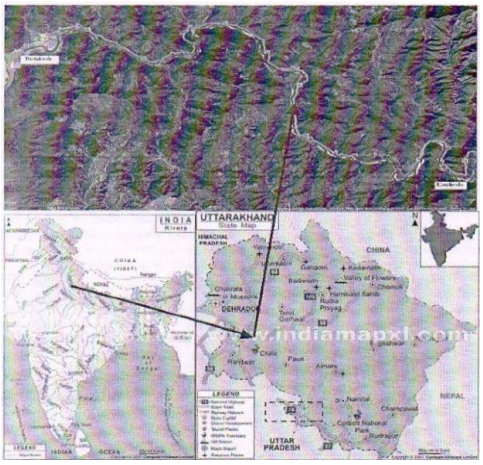
Some of the Important Case Studies in India

The case studies are cited below conducted by various nature loving researchers in India for a great contribution towards nature conservation.

Source

World Journal of Agricultural Sciences 7 (4) : 375-382, 2011
ISSN 1817-3047
IDOSI Publications, 2011
Ecological and Economic Impacts of River Based Recreation in River Ganga, India By
Nazir A. Pala, Jahangeer A. Bhat, S. Dasgupta, A.K Negi and N.P TodariaDepartment of Forest and Natural Resources, Post Box, No. 59,
HNB Garhwal University, Srinagar (Garhwal)- 246174, Uttrakhand, India

P: ISSN NO.: 2394-0344
E: ISSN NO.: 2455-0817
Remarking An Analisation
RNI No.UPBIL/2016/67980
Vol-I* Issue-VI*September - 2016



The Study Area

The study area is located in the Garhwal region of Indian State of Uttrakhand which lies between $30^0$4'27" N--30^0 7' 23" N and 78^0 29' 59" E-78^0 18' 51" E between Rishikesh and Kaudiyala along the Badrinath National Highway number 58, surrounded by broad leaf forest of sal (Shorearobusta) and covers a road distance of 40km and river distance of 36 km. stud area map is given in the fig. 1.

This study explains howRiver rafting and camping influence the economic activity including infrastructure development and regional popularity. There is a mixed feeling amongst villagers regarding the governments decision to allow rafting and camping on the River Ganga, though a majority of villagers are in favour of such activities because they draw direct and indirect economic benefit in terms of seasonal jobs, more sale in restaurants, tea stall and grocery shops. Because of the indiscriminate use of the river beds and adjoining areas, vegetation and the wildlife of he area is facing threat.

To cope up with negative impacts of rafting and camping on the adjoining areas of river Ganga, government of Uttrakhand should put in place some regulation on other recreational activity in adjoining areas. Rafting and camping should not be linked with the trekking in adjoining areas of river. This not only puts pressure on the wildlife but also degrades the vegetation of the area. Local communities may be more motivated to participate to share positive economic impacts. Above all we can say that the river rafting and camping can become a promising ecosystem service only if resource base is used judiciously.

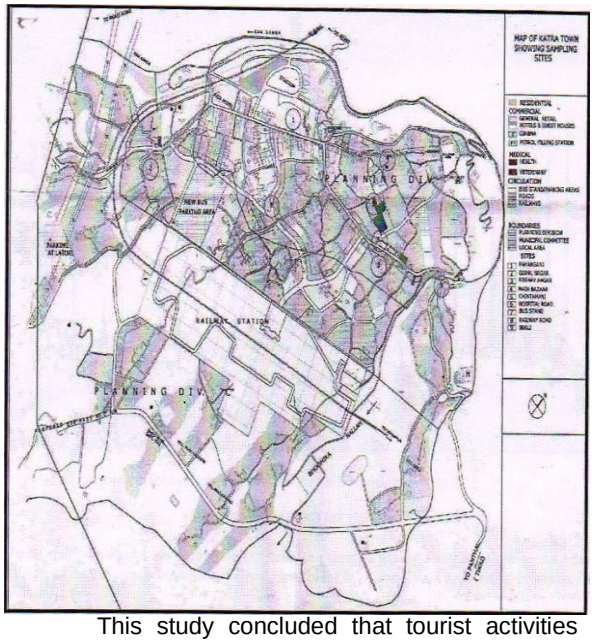
Source

International Journal of Innovative Research in Science, Engineering and Technology (An ISO 3297: 2007 Certified Organization)Vol. 3, Issue 6, June 2014.

Environmental Impacts of Tourism in Katra Town (J&K)

Ph.D. Scholar, Department of Environmental Science, University of Jammu, Jammu, J&K India
Prof. Department of Environmental Sciences, University of Jammu, Jammu, J&K, India

Katra (Latitude $32^0$59 N**,** Longitude $74^0$55 E and average altitude 2840 feet above the mean sea level) is the most important town from economic as well as religious point of view. It is situated at the foothills of the Trikuta mountains (a part of the sub-Himalayas Shivalik range), in the Reasi district of J&K state about 48 km away from Jammu city and has a thriving tourism industry that offers plenty of hotels, guest houses, restaurans, dhabas, fast-food joints etc. (fig. 1). The town witnesses the influx of thousand of pilgrimseveryday to the tune of ten million people annually. The number of pilgrims visiting the shrine has risen from 1.4 million in 1986 to 10 million in 2012 (Fig. 2). But this increasing number of tourists has directly or indirectly impacted the environment of the area i.e. katra Town. Brisk developmental activities from Katra to the cave shrine have been posing an ecological threat to the Trikuta hills and the biggest challenge is to maintain ecological balance. Spatial pattern of the town consists of congested 2-4 storied houses closely knit and approachable by narrow lanes. The town has virtually turned into a concrete jungle at the cost of its serenity and environment as haphazard expansion is going on to cater the needs of tourist.



This study concluded that tourist activities has impacted the environment of Katra town in several ways. Ambient air quality has been found to be affected because of the increase in the number of vehicles due to increased tourist activity, water quality of the main river to the town has also shown changes in physico-chemical characteristics due to bathing and washing activities of the tourist as well as a lot of waste is being generated which is creating unhygienic conditions in the town.

Recommendations by the Author's

To avoid these impacts, tourism need to be planned, managed and undertaken in a way that is environmentally sustainable, socially beneficial and economically viable. In order to provide sustainability in tourism, it is necessary to know environmental, social and economic impacts of tourism activities and to consider these effects, during the planning.

Tourism has the potential to increase public appreciation of the environment and to spread

P: ISSN NO.: 2394-0344 **Remarking An Analisation**
E: ISSN NO.: 2455-0817 RNI No.UPBIL/2016/67980 Vol-I* Issue-VI*September - 2016

awareness of environmental problems when it brings people into closer contact with nature and the environment.This confrontation may heighten awareness of the value of nature and lead to environmentally conscious behviour and activities to preserve the environment.

Various Steps and Schemes Initiated by the Government of India towards Environmental Protection and Conservation As Follows:

Swachh Bharat Abhiyan (English: Clean India Mission)

And abbreviated as SBA or SBM for is a national campaign by the Government of India, covering 4,041 statutory cities and towns, to clean the streets, roads and infrastructure of the country. The campaign was officially launched on 2 October 2014 at Rajghat, New Delhi, where Prime Minister Narendra Modi himself cleaned the road. It was performed in remembrance of Mahatma Gandhi's words. It is India's biggest ever cleanliness drive and 3 million government employees and school and college students of India participated in this event."The government has collected Rs. 329.6 crore in a month's time form the 0.5 perentSwachh Bharat Cess which is imposed on all table services, the Parliament was informed on Tuesday."The provisions figures of Swachh Bharat cess collected till December 16, 2015, is about Rs. 329.6 crore," MoS Finance JayatnSinha said in a written reply to the RajyaSabha. The government had imposed the cess with effect from November 15 to fund Swachh Bharat programme. Between November 15 and March 31, 2016, the revenue estimated to be collected is about Rs. 3,750 crore, Mr. Sinha said. The Minister added that the proceeds collected through the cess would be allocated to the state governments to fund Swachh Bharat initiatives.The amount estimated to be collected from Swachh Bharat cess on all taxable services which are not exempt or in negative list in a full financial year is about Rs. 10,000 crore. Revenue for the next financial year has not been estimated so far, he said. With the Swachh Bharat cess, the Service Tax rate has gone up to 14.5 percent from 14 percent[43]"

Harike Wildlife Sanctuary

The Harike Wildlife Sanctuary is rated among the most important wildlife sanctuaries not only in Punjab but India. The sanctuary is also popular as Hari-ke-Pattan. The sanctuary spreads over an area of 86 Sq. Km an dis located at the convergence of the rivers Sutlej and Beas. The sanctuary is ideally located on the border of Ferozpur and Amritsar. The sancturya spans around the Harike Lake, which is triangular in shap.e the barrage connects the city of Amritsawr with Ferozpur, bhatinda and Faridkot by a national highway.

The area has rerecorded around 26 species of fish and over 7 species of turtle. The sanctuary is also home to several mammals. The endangered species of Smooth Indian Otter and the Testudine Turtle are also a part of the sanctuary. The sanctuary spreads over the wetland turtle are also a part of the body attracts several birds during the winter season. The sanctuary is a haven for bird watchers; birds from as far as Siberia and the Arctic visit the sanctuary. During the peak season as many as 45,000 ducks have been recorded in the sanctuary.

Government Initiatives to Promote and Preserve the Natural Hari-Ke-Pattan

Government of India and the State Government of Punjab having initiated the programs to promote this wetland and also spending on, to preserve the Bio Diversity of this great place. Bio Diversity Act, Forest Act and many other legislatives (already discussed in the main paper) has been passed in this regards and for the enforcement of these Law laid down by the Central & State Governments. The local residents are also educated in regards and awareness programs are also stated to became the responsible tourist and habitant to sustain the natural wetland[44].

The Asiastic Lion Reintroduction Project is an initiative of the Indian Government to provide safeguards to the Asiatic lion *(Pantheraleopersica)* from extinction in the wild by means of reintroduction.

The last wild population of the Asiatic lion is found in the Gir Forest region of the state of Gujarat. The single population faces the threats of epidemics, natural disasters and other anthropogenic factors. The project aims to estbalsiha second independent populations of Asiatic lions at the Kuno Wildlife Sanctuary in the Indian state of Madhya Pradesh. However, the proposed translocation is unpopular in Gujarat and has been bitterly contested by the state government.

The Wildlife Institute of India Initiative

The Wildlife Institute of India (WII) began studying the Asiatic lion in its habitat in from 1986 onwards and collected fundamental data about the lion, its feeding, use of habitat and ranging habits. Key findings of the study were that the lions largely preyed upon the wild herbivores such as sambar*(Rusa unicolor)*and chital*(Axis axis) and that size of home range was 70 square kilometers (27* sq mi*)* for females and 140 square kilometers (54 sq mi) for the males. In 1990,j the WII proposed the creation of a second wild population of Asiatic lions to safeguards the species against potential calamities in Gujarat's Gir National Park.

1993 PHVA Report

In 1993, a workshop was held on the Population and Habitat Viability Assessment (PHVA) of Asiatic lion and the report was presented to the state forest departments in Vadodara, Gujarat. State forest departments were asked to suggest suitable sites for reintroduction and provide the basic ecological data[45].

Conclusion and Recommendation

The proper environmental management requires that society and man's demands should be so regulated the natural environment is able to sustain the need for the development. It asks no more than that we should live today with tomorrow in mind, that we do not snatch momentary prosperity for ourselves at the expense of the very survival of our children.

To promote a more pro-environmental approach to life, people must deepen their understanding and awareness of the relationship between people and the environment. Learning opportunities that impart information and knowledge

of the environment must be provided foundation at the formative stage of life. Engaging in environmental activity requires a sense of direct involvement, that is, a sense of responsibility as a member of the global community or an awareness of participating in environment preservation.

Unless local communities themselves are involved in the selection and use of these technologies, they are unlikely to benefit from their implementation and these technologies interventions will be unsustainable in the long term.

Role of the International Law

The role of international law is of great significance in the matters of compliance and enforcement of international environment instruments, which are most crucial for the protection of environment.Their unregulated consumption of natural resources is depriving people in the developing world from these resources. Hence, there is an urgent need to regulate the consumption or exploitation of the natural resource in a sustainable manner. For this purpose, the state, governments and NGO's have a crucial role to play in the enforcement of environmental conventions. It is of utmost necessity that the nations of the world must follow the course of common policy and co-ordinate action by framing strategies for survival at least in following vital areas, viz., the climate change, the ozone depletion, and the protection of biodiversity. Nations must formulate a strategy for planet Earth based on collective responsibility to meet the challenge posed by environmental degradation.

We must imaginatively develop and apply the vision of sustainable way of life locally, nationally, regionally, and globally. Let ours be a time remembered for the awakening of a new reverence for life, the firm resolve to achieve sustainability, the quickening of the struggle for justice and peace, and the joyful celebration of life.

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