

Lex Terra

News Updates on Environmental Law

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“The environment is where we all meet; where all have a mutual interest; it is the one thing all of us share.”

—Lady Bird Johnson

“Lex Terra is an initiative by the members of Centre for Environmental Law, Advocacy and Research (CELAR) of National Law University. Through Lex Terra, we are making an effort to put forward the various facets related to Environment from different sources which is published every fortnight among the society so that a community of environmentally conscious people emerge out of the legal and non-legal fraternity. Each edition of Lex Terra highlights some noteworthy eco-news, both at global as well as national arena. This newsletter is extensively prepared by the members and researchers of CELAR, the members of NLUA.

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About CELAR

The primary mission of Centre for Environmental Law, Advocacy and Research (CELAR) of National Law University, Assam is to engage in advocacy and research on public interest environmental issues. For the purpose, it will organize workshops and seminars to educate and develop skills, convene conferences to promote exchange of ideas, conduct training programmes for capacity building in environmental law issues, undertake research on legal concerns and publish

periodically, newsletters and journals.

The objectives of the CELAR are as follows:

- To inspire and educate students by providing hand-on advocacy experience and direct exposure to the issues.
- Strengthen access to justice by undertaking high quality multi-disciplinary research on contemporary legal issues pertaining to environment.
- Advocate for reforms in environmental law through

scientifically sound legislative proposals.

- Organise training programmes for strengthening the legal capacity building on environmental laws and civil servants, law enforcement authorities, non-governmental organizations and media personnel.
- Publish periodically journals and newsletters on environmental law.

— **Professor (Dr.) Yugal Kishore,**
Centre Head, CELAR

Message from Team *Lex Terra*

Dear Readers,

It is with much joy and anticipation that we present to you the thirteenth issue of CELAR's fortnightly newsletter, *Lex Terra*.

We congratulate the team for its continuous and praiseworthy collective efforts.

The team of *Lex Terra* wishes to thank all of those who supported this initiative. We would like to express our gratitude to our respected Vice-Chancellor, Prof. (Dr.) Vijender Kumar for his continuous support and timely inputs. We would like to thank Prof. (Dr.) Yugal Kishore, the Centre Head of CELAR for his help and encouragement. We would like to thank Mr. Chiradeep Basak, Centre Coordinator of CELAR, who has been a source of inspiration from the outset, along-side his unrelenting contribution to all phases of the job, from planning, to setting clear goals and appraising the outcome. Lastly, we would also like to extend our gratitude to our faculty advisors, Ms. Shannu Narayan and Mr. Nayan Jyoti Pathak for their ideas and relentless support.

Based on our publication's impact factor as well as some requests and suggestions by academicians from other law schools, we have decided to share our publication with all law schools, administrators along with a pool of eminent environmental activists, researchers and lawyers in India and overseas. Since we are not having triskaidekaphobia, we will also start accepting contributions from all over India from the thirteenth issue onwards. **So if you are willing to be part of this venture, kindly contribute.**

Our issues go online every 1st and 16th of each month.

Please keep pouring down your support and concern for mother nature.

Thank you

Happy Reading!



OIL EXPLORATION IN NAGALAND: LESSONS FOR THE FUTURE

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Gold is where you find it...but oil must be sought first of all in our minds'

-Wallace Pratt in Oil in the Earth

Wars have been fought and blood has been shed over oil or to be more specific, crude oil. Crude oil is among the most sought after commodities in today's energy driven world. The North Eastern state of Nagaland is among the few states in India to have a substantial reserve of crude oil. However, the factor that complicates matters is that Nagaland also enjoys autonomy when it comes to using its own mineral resources under Article 371 A of the Constitution. This means that the state legislature has the prerogative and independence to frame all regulations and policies when it comes to utilising any mineral resources of the state. As a result, there has been a history of considerable heartburn between the Centre and Nagaland on the issue of regulation of mineral resources, specifically petroleum. Nagaland's oil reserves border around 600 million tonnes which means a capability of recovering 1600 barrels of oil per day. This makes Nagaland a lucrative proposition for any oil prospecting entity in an industry which has cut throat competition due to the fast depleting petroleum reserves across the world.

India's largest oil and gas exploration and production company, The Oil and Natural Gas Corporation (ONGC), which had been carrying out exploratory drilling in Nagaland, was forced to pull out from the state in 1994 over differences with groups like the NSCN-IM and the NSF (Naga Student's Federation). The groups had been demanding a higher share of royalty for the local populace who were not receiving any form of monetary compensation, even though the land where the drilling was taking place was community owned. As such, the ONGC finally pulled out in face of public resistance and their inability to meet the demands for higher royalty. However, the Changpang and Tsorri oil fields in Wokha district which had been operated for exploration purposes by the ONGC is alleged to have led to oil spills soon after the stoppage of operations. In fact, human rights activists and local bodies have alleged that top soil and water sources have been majorly contaminated. The villages of Changpang and Tsorri which are predominantly inhabited by the Lotha tribe with a population of around two

thousand were directly affected by the oil spill. It is this incident which led to the public outcry when the ONGC planned to start operations in Wokha again in 2007. In the face of mounting confusion and protests, the Nagaland government in 2012 framed the Nagaland Petroleum and Natural Gas (NPNG) Regulations and its Rules. And the allotment of oil and gas zones was started afresh with the floating of an Expression of Interest (EOI) for 11 oil and gas zones. Ironically, this process came under criticism due to allegations of evident favouritism and rampant corruption. The Kohima Lotha Hoho filed a PIL before the Gauhati High Court in 2015 questioning the credentials of the Metropolitan Oil & Gas Pvt. Ltd. which was awarded the permit for Wokha and Peren.

Notwithstanding these developments, the most worrying facet of this issue is the oil spillage from the Changpang and Tsorri oil fields. The PSU also did not have any functional environment management or disaster management plan in place. The mandatory Free Prior and Informed Consent from the indigenous people of the area was also allegedly never taken. In a disturbing pattern reminiscent of the biggest industrial disasters like Bhopal and Chernobyl, the local community had no information about the dangers posed by oil spillage from the oil wells or any mitigation measure to be taken in case of accidents. In fact to this day, several villagers remain unaware of

the adverse effect the oil spill has had on their health. The hope of better jobs in the oil wells and improved living conditions actually led to villages shifting closer to the wells in Changpang. This exposed them to more contamination once the spillage began after the units closed down. More than two thousand people inhabiting the villages close to these oil fields have had their water sources, forests and farm lands contaminated by the oil spill. Even though the facts of the Changpang and Tsorri oil spills remain contested by both sides, it is a wakeup call for governments and industries to proactively work on modalities regulating every aspect of the site before embarking on full scale functioning, especially in the North East.

Even though detailed impact assessment of the oil spills remain to be made, the few that have been carried out point to obvious health impacts among the exposed population. In fact, one of the studies made in Changpang village has traced recurrent skin rashes and abnormally high incidences of eye problems like cataract in the population. Impact assessment thus remains another important factor which has not been followed up at the desired level. The fact that the population affected by the oil spills is relatively small is another reason why the issue has not received enough coverage at the national stage.

The Nagaland government has constituted a cabinet subcommittee to frame modalities on petroleum and natural gas in response to these

incidents. Incidentally a PIL seeking Rs. 1000 crore in damages from the ONGC and the Government of Nagaland was filed before the Gauhati High Court in 2011 with regard to the unattended oil spills in Changpang and Tsorri villages of Wokha District. However, the sweeping changes that needed to be brought in with regard to policies during the aftermath of this episode never materialized. The government response remained muted over the years and even though some changes were brought in, the aggressive pro-environment and pro-safety regulations that needed to be framed were not.

The crux of the issue however is the belligerent attitude of the public and private energy behemoths worldwide which at times neglect to follow the mandatory safety protocols. On the other hand, the low level of literacy among the populace in these often remote areas makes it difficult for the mandatory processes to be carried out. The village councils who have protested against this point to a covenant made between the government and the oil companies. However, an analysis of this issue from a neutral perspective is extremely crucial. Oil exploration in Nagaland as with several other states, brings to loggerheads the perennial issue of development and the rights of the indigenous people. While oil exploration and the subsequent production of energy are extremely important for the country in general, it is a basic criterion that the development of the local populace and their health is ensured. It is the responsibility of the stakeholders to ensure that

the local populace next to drilling sites are adequately compensated. It is imperative that governments and local groups in areas with mineral resources formulate customised regulations and safeguards before starting exploration or tapping. In case they are not formulated in time, as was the case with Nagaland, the following motto used by Anadarko, the American oil exploration behemoth might come to hold true:

‘Omnia bona quoad perfora’- loosely translated as ‘All prospects look good until drilled’.

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A DREAM, A HOPE, A CHANGE FOR THE BETTER - TOWARDS REALIZATION OF CORPORATE ENVIRONMENTAL RESPONSIBILITY

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Introduction

“The only thing that never changes is that everything changes”. This quote by Louis L’Amour is quite famous and popular amongst all of us. This is so true in almost all the cases and it is not really surprising that the same is the case with our legal system too. We have had landmark judgments that lasted for decades as binding precedents but were overruled by subsequent judgments or legislations. It is true that it is the beauty of the concept of precedents and inevitably a necessity in the present society. But aren’t we creating a situation where we expect anything to change at any moment and to believe that nothing is static at least for some period of time. Aren’t we being betrayed of an assurance that this is what ‘the law is’ and ‘the law will be’ for a given period of time.

The instances of ‘CHANGE’

The fact that there have been major changes in land legislations and judgments regarding land acquisitions, its implications on constitutional rights and later amendments is known to everyone. We started off the debate in 1951

with *Shankari Prasad v. Union of India* followed by *Sajjan Singh v. State of Rajasthan* (1965), both the judgments holding that amendment is a constituent power and hence it cannot be considered as law for the purpose of Article 13 of the Constitution of India. The essence of the judgment is that fundamental rights can be amended by the Parliament. The country witnessed a change in the case of *Golak Nath v. State of Punjab* (1967) when the court held otherwise. A later decision by the Hon’ble Supreme Court in *Keshavananda Bharati v. State of Kerala* (1973) is still considered as a ground-breaking one as it propounded the basic structure doctrine for the first time and held that Parliament can amend any part of the Constitution including Part III, but without altering the basic structure. As is evident, a sea change took place in the gap of 22 years but we could always say that the law regarding land acquisition was at an evolutionary stage then. We had to wait for years for the Supreme Court to traverse through other decisions such as *Indira Gandhi v. Raj Narain* (1975) and *Minerva Mills v. Union of India* (1986) to clarify the concept of basic structure and finally in 2007, we got the answer in *I.R. Coelho v. State of Tamil Nadu* (2007) that even the Ninth Schedule is not immune from judicial review.

We have had instances of our courts dwelling into the most debated issue in our nation, 'reservation in educational institutions'. Though the court, through its decisions in *T.M.A. Pai Foundation v. State of Karnataka* (2002), *Islamic Academy v. State of Karnataka* (2003) and *P.A. Inamdar v. State of Maharashtra* (2005) held that private educational institutions that neither receive aid or grant from the state are unhampered by restrictions imposed by the state, we witnessed the so-called 'change' when Parliament altered the entire position by way of 93rd amendment in 2005. The amendment incorporated Article 15(5) in the Indian Constitution which exempted minority institutions, but brought other private educational institutions under the restrictions imposed by the state.

There was a time when the country was desperate to know the attitude of the judiciary towards the test of obscenity and in 1965, the Supreme Court in *Ranjit D Udeshi v. State of Maharashtra* by applying the Hicklin's test adjudged the test of obscenity in the light of its impact on vulnerable sections of the society. And just when we thought that the law is going to stay forever, in 2014 'the change' happened. In *Aveek Sarkar v. State of W.B.* (2014), the court held the 'community standards test' to be applicable. True, that it is a welcome change but nevertheless it is a change.

The position with regard to imposition of death penalty is not different. The observation in the case of *Sangeeth v. State of Haryana* (2013) that the circumstances of the criminal referred to in *Bachan Singh* have not been followed in most of the previous cases clearly points out the problems of

'change'. There have been decisions in 2013 in the context of death sentence that seemed to be confusing from another point of view. After elaborate discussions regarding delay as a factor in commuting death sentence to life imprisonment in cases such as *Vatheeswaran*, *Triveniben*, *Javed Ahmed* and *Sher Singh*, the S.C. in *Devender Pal Singh Bhullar v. NCT of Delhi* (2013) held that the judgments that state, "long delay may be one of the grounds for commutation of the sentence of death into life imprisonment" cannot be invoked in cases where a person is convicted for an offence under TADA or similar statutes. The same judges who decided Bhullar's case commuted death sentence to life imprisonment in another 2013 decision (*Mahindra Nath Das v. UOI*). If the delay in disposing of the mercy petition in Bhullar's case was 8 years, it was 12 years in *Mahindra Nath*. The only rationale that one can find is that the former one related to an offence under TADA and the latter one related to an offence under IPC. The beginning of 2014 has now witnessed the S.C. (*Shatrughan Chauhan & Anr v. Union Of India*) deciding that the delay in disposing of the mercy petition is a valid ground for commutation of death sentence. Nowhere in the judgment is it stated that the ruling does not apply to offences related to terrorism.

The frequent 'changes' that the legal system suffers may result in errors that cannot be rectified later. This is especially true in the case of death penalty. In U.S., there have been instances where death penalty was ordered but on the basis of a mistaken identity. The instance of Carlos DeLuna in US who was executed as per the order of the court but later turned out to be an innocent person is a

reminder of two things. Firstly, there can be situations like these where the courts should be vigilant enough to appreciate the right evidence before it and come to a correct conclusion. Secondly, the fact that there are no clear cut guidelines in cases regarding imposition of capital punishment and the fact that the already established principles undergo a state of flux may result in a judgment which cannot be appreciated at any cost.

The nation is currently witnessing a 'change' in the method of appointment of judges. If it was the 'collegium system' that reigned for years, it is going to be an entirely different set of procedures from now on. Though as of now, the court have retained the collegium system, it is yet to know the welcoming changes that could further happen in the method of appointment of judges.

Towards a positive change – Corporate Environmental Responsibility

Now that the different organs of our state, Parliament, Executive and the Judiciary teach us that things are subject to change, why can't we change for the better? Change can also be positive; it can be towards legalizing the conduct which was otherwise illegal. It can also be towards incorporating into our legal system, a concept which has been hitherto considered as alien by our justice administration bodies.

The non-state actors have a major role in the day to day activities almost in each and every field including that of human rights, labour standards and most importantly environmental protection

amongst various other areas. If it was the state and its agencies who used to violate environmental rights, at present it is the non-state actors who have taken up that role. In the current scenario it is extremely a difficult task to control the non-state actors such as transnational corporations because of their huge financial power but the fact remains that they are involved in grave violations of human rights including that of violating worker's rights, causing environmental pollution, employing child labour, violating basic access to health and shelter of workers and their families.

The human rights abuses caused by Vedanta Corporation in India, the underground water depletion caused by Coca-Cola plant in Plachimada, the forced displacement that ensued due to activities of POSCO, the resultant land acquisition from poor farmers on account establishment of Tata Nano project in Singur, privatization of Sheonath river, emission control fraud by Volkswagen, the after effects of Bhopal Gas tragedy and especially the fact that the judiciary failed to provide adequate sanctions to the violators concerned proves the need for the 'change' in the legal system so as to make the corporations socially accountable for their acts against the environment. There exist human rights abuses in other parts of the world such as the incident of release of toxic gas from Trafigura in Abidjan affecting more than a lakh of people, the environmental degradation and poisoning caused by operations of Rio Tinto in Papua New Guinea, the frequent oil spill by Shell in Nigeria etc. All these clearly show that it is high time that there is a positive change towards

incorporating corporate environmental responsibility into our legal system.

It is true that there have been different initiatives taken up at the international level to control the activities of corporations in the area of environmental protection. Be it the OECD Guidelines or the ILO Tripartite Declaration of Principles Concerning Multinational Enterprises and Social Policy or the UN Global Compact, none of them succeeded in creating binding set of standards.

Contrary to this, the UN Norms on the Responsibilities of Transnational Corporations and Other Business Enterprises with regard to Human Rights in the year 2003 did set up some binding environmental standards but the same was not accepted by the international community and was set aside at a later stage.

The National Voluntary Guidelines on Social, Environmental and Economic Responsibilities of Business (2011), released by the Ministry of Corporate Affairs is an enhancement of the Corporate Social Responsibility Voluntary Guidelines of 2009. The 2011 guidelines are a set of framework for responsible business practices for Indian multinational corporations. Its sixth principle is in connection with environmental protection as it requires businesses to prevent pollution, ensure sustainability, employ precautionary principle and focus on biodiversity conservation. Similarly, clause (iv) of Schedule VII of the Companies Act of 2013 that deals with CSR activities specifically provides for ensuring environmental sustainability, ecological balance, protection of flora and fauna, animal

welfare, agro forestry, conservation of natural resources, and maintaining quality of soil, air and water. But, the Companies Act of 2013, though incorporated the requirement of CSR, it is still unclear as to the after effects/sanctions meted out to those corporations who fail to comply with Section 135 of the 2013 Act. It is also not clear as to what all are the social responsibilities of companies whose net profits fall below Rs. 500 Crore or who do not satisfy the criteria laid down under Section 135(1).

All the above mentioned steps taken at the international and national level covers only a minor portion of the concept of corporate environmental responsibility. But all of them suffers a drawback which is nothing but the lack of effectiveness as most of them are voluntary codes and do not necessary involve any form of sanction to corporations who do not adhere to the codes or guidelines at the national and international level.

Now that the 'change' cannot be avoided altogether, let's not continue to argue. Let's hope for a change; this time but a positive change, a change in the attitude of our legal system. Let's be bold to embrace the concept of corporate environmental responsibility and make sure that business entities too are held accountable for the gross violations that they cause to the environment at large. Let's hope for the laws in India to be adequate enough to make the corporations accountable for the environmental violations caused by them.

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MENACE OF CLIMATE CHANGE ON INDIA: NEED TO TAKE POSITIVE STEPS

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INTRODUCTION

With the evolution of the state, society underwent various changes; these changes were not constraint to the earth but to the space above it, i.e. atmosphere: global warming is one such change. various changes have been felt in the society both at the positive and negative level and climate changes have also evolved. Impacts of global warming are being felt both at national as well as at international level. There is an increase in temperature, rainfalls are becoming more erratic and unreliable, the sea levels are rising wildly, and the weather extremes are becoming more often. The duration of calamities is getting prolonged all the same, and their extent is intensifying. India is a country of varying ecological zones, and possesses a variety of geological zones. Though generally versatile in terms of geological and ecological zones, the country is vulnerable to climate change risks world-wide. More than half of the population of the country is comprises of people living in rural areas; who are highly dependent upon the sectors of economy that are seriously affected by the climatic conditions, such as agriculture, the

fisheries and forestry. The natural resources, provides fuel to the industrial processes which are already under severe pressure due to the rapidity of urbanization and industrialization, and the burden gets exaggerated with the exploding population. All factors taken together, the projected picture doesn't look very promising.

Climate change refers to the variation in the Earth's global climate or in regional climates over time. Earth's climate is varying, dynamic. It changes incessantly in an unfixed pattern, through a natural cycle. Most species on earth depend upon the natural greenhouse effect, moderate, for their survival. But the recent rise in the levels of the emission of GFGs (Green House Gases) due to human activities has led to an increase in the Greenhouse effect, and has led to subsequent rise in the temperatures globally. The Greenhouse emissions have increased manifold since pre-industrial times, about 70% between 1970 and 2004. The increased emission also includes many of the "man-made" gases, including the chlorofluorocarbons (CFCs), hydrofluorocarbons (HFCs), per fluorocarbons (PFCs) and the sulphur hexafluoride (SF6). Today, increasing number of scientists believe that in the course of 21st

Century, the average global temperatures could increase by more than 5 degree Celsius. All this is to what effect? Our future generation will have to pay for our mistakes as they will be forced to inherit a potentially unstable eco-system.

Effects of Climate Change

The effects of climate change in India are same as the effect it imposes on the world. For averting the problem that climate change is causing, it is essential that we know all the causes by which it is created. The most important of all of the cause is the one that is probably the biggest cause of the worldwide spread of global warming, i.e. the sudden increase in the levels of the greenhouse gas emission. The production of the same is the reason for the excessive amount of heat getting trapped in the ozone layer of the planet. It has consequently resulted in the melting of the glaciers at the poles, which has resulted in the initiation of a chain reaction, which begins with the melting of the ice caps, leading to a subsequent rise on the water levels, causing the flooding of the coastal areas, thereby forcing the inhabitants to relocate, causing a grave disturbance in the harmony with which the human beings live. There is no way by which what has been done can be reverted. The posterity shall have to live with the consequences of what has been done by the present generation. Science claims the life of the chlorofluorocarbons in the atmosphere to be around 50,000 years. We must intend to control the emissions so that any further damage can be averted. The other impacts of the change in the

climatic surroundings includes agriculture, food security, lack of clean water availability, and subsequent rise in sea levels affecting the coastal areas in the country.

Grief of Victims

Instances affecting Communities in India

The results are already beginning to show. The inhabitants of two villages in the Himalayan mountain district of Mustang have already abandoned their homes and migrated to lower regions, all owing to climate change. Due to rapid increase in temperatures in this region, the water supply has dried up, compelling the inhabitants to find a more viable region to settle into. Sunderbans ecosystems are also threatened of climate change impact, human intervention and faulty developmental policies and priorities. Even before the Aila disaster, Sunderbans were becoming endemic to indebtedness, migration, child labour, women and child trafficking, high incidence of malaria and other diseases as a result of poor nutrition and sanitary conditions. These problems exacerbated after Aila disaster and brought to the fore the increasing risks, vulnerability, migration and poverty of the communities at risk. The water level in the Sunderbans, is rising at an alarming level, approximately from 3-8 mm per year. The Sunderban Islands are sinking; 7,000 people have already been displaced and it is anticipated that by 2030 over 70,000 people from this area would be exposed to the risk of losing their homes and livelihoods due to sea level rise. In a small village named Nargol near which the Arabian Sea is situated, due to the climatic change in past few

years, the sea has been moving and the water has lapped closer and closer to this village in Umargaon taluk of Valsad district in Gujarat, swallowing up the land.

In areas of Bundelkhand region in Madhya Pradesh, most men migrated to urban areas in search of livelihoods. Women and girls left behind in the area are facing many problems such as severe droughts and acute water shortage at a much higher scale.

In semi-arid regions, like Madhya Pradesh, where due to relatively high temperature and rainfall, rise in temperature had badly hit cropping patterns. Melting of glaciers is also a major issue, giving rise to instability in glacier-fed rivers, particularly the Indus and the Brahmaputra. Due to melting of Hindu Khush ice mass in the Himalayan Regions of India, a series of floods and droughts were experienced in 2006 and 2008 amounting to the change in the rainfall pattern in the areas, which thereby, affected crops, animals and livelihood of individuals extensively in India as well as in China.

In 2015, excessive deterioration was caused to the infrastructure in New Delhi; also increase in temperature led to the increase in demand for electricity, out-stripping the supply. Excessive use of air conditioners amounted to long lasting power cuts. Slums in Ahmadabad were included in the 'high risk' areas by the local authorities after hitting of a heat wave in 2010 which took away 1000 lives. In 2015 the wettest march in about last 50 years was recorded resulting in floods in Kashmir, within a period of six months. Extreme dehydration and heat stroke were

witnessed in the Andhra Pradesh and Telangana states were more than 1,100 deaths occurred due to extreme weather conditions.

Impact on Agricultural Sector

Large portion of India's population is depends upon Agriculture. Climate change has resulted in disruption of the rainfall patterns in the country thereby, resulting in drastic changes in the cropping patterns in the country, severely affecting the irrigation facilities in the country, as a result causing major dearth to the revenue generation of an agro- country. The recent trends suggest that productivity of the country's total output can be affected to a major extent. Any change in the rainfall patterns poses a serious threat to agriculture, and thereby affecting the economy and food security. Summer rainfall almost amounts to 70% of the total annual rainfall of the country and is vital for Indian Agriculture, but the studies predict a decline in the scales of the Summer Rainfall by the 2050s. Disruptions in rainfall patterns is been experienced all over India, for instance Semi-Arid regions of Western India are been predicted to receive higher than normal rainfall, while Central India is supposed to receive approx. 10 to 20 per cent less than normal rainfall by 2050s. Productivity of most crops may decrease due to an increase in temperatures, and because of subsequent decrease in water availability.

Effect on Flora and Fauna

It is estimated by experts that there has been major reduction in the population of tigers which are just 3,200 tigers in number, and there is continuous deduction, due to poaching, depletion of natural prey, loss of habitat. Population

explosion is a major reason for the same. Areas such as mangrove forests, animals and humans are in direct conflict for the availability of land, ultimately resulting in the loss of habitat for the animals, particularly those of tigers. Major threat is caused to them by the projected rise in sea level, which may extinct the living space of these species altogether. Due to global warming, the survival of alpine meadows prevalent in the areas of Rocky Mountains has become difficult. The melting of polar ice affected the habitats of polar bears and penguins and those of coral reefs, thereby amounting to their extinction. National aquatic animals are also prone to danger resulting in the reduction of their populating and urging them to change their course in search of food and viable living conditions.

Conclusion

It can be concluded that climate change is amounting to destruction. The essence for survival is stability of nature, because changes in nature lead to massive destruction. Stability in nature can be achieved by sustainable consumption. Hence it is of utmost importance that we must curb the menace of Climate Change as no areas is left untouched from its effect. The recent Climate Conference (COP21), which was held in Paris is expected to bring a positive changes on Climate Change and is going to be of utmost benefit for the World in combatting the issue of Climate Change. Affirmative actions and precautionary means must be adopted by the to fight Climate Change and taking into consideration the principles laid down in Paris Agreement, as it will help reducing the effects

caused by the catastrophe of Climate change and reducing the harm caused by it in future.

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OCEAN ACIDIFICATION- THE PROBLEM BENEATH THE SEA

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What is ocean acidification?

Burning of fossil fuel causes emission of carbon dioxide (CO_2) in large amount which gets accumulated in the atmosphere, resulting in global warming. But the chain of reaction continues as emitted CO_2 gets dissolved in water, thereby, reacting with the sea water in the ocean resulting in the formation of carbonic acid. This drastically reduces the pH level of the ocean which in turn causes a shift in the carbonate chemistry of the sea water. The process defined above is known as ocean acidification.

Over the past two and a half centuries the levels of atmospheric CO_2 have gone up nearly 40 percent; from 280 ppmv (parts per million volumes) in the pre industrial age to about 384 ppmv in the current times. Driven by deforestation and human fossil fuel combustion, there is a prominent increase in the rate of current concentration experienced presently is higher than what has been observed for at least the past 8,00,000 years.

The effect on Marine ecosystem

The main concern associated with the rising levels of ocean acidity is that it reduces the amount of carbonate in the water, which is a vital substance

as consumed by many marine species to form skeletons and shells. Ocean acidification can also lead to 'global osteoporosis' which is harmful not only for shellfish essential commercially but for other key species of marine food web also.

Many points indicate towards the fact that ocean acidification is affecting the marine life all around the world. Since 1990 there has been a 14 percent decline of calcification in the coral species of the Australian Great Barrier Reef and the body weight of an Antarctic species of plankton have reduced by 30-35 percent than they historically were. Many forms of marine life will continue to diminish notably, amounting to the increase in the level of Carbon dioxide.

The development and survival of cold- water corals will also be seriously affected due to ocean acidification. Cold- water corals are found in oceans all over the world between the depths of 200 to 1000 meters. It has been predicted that 70 percent of the known cold- water corals will be affected by the end of this century due to corrosive water conditions. Not only this, but acidification will hamper marine mammals and fishes. With the rise of level of CO_2 in seawater, the dissolved CO_2 diffuses more readily across animal surfaces'. It hastens the process of

acidosis. This reduces the oxygen carrying capacity of the blood which in turn lowers respiratory activity and reduces cellular energy.

Ecological and Commercial Impact

The loss in biodiversity can lead to serious ecological disruption especially that of Polar Regions which are highly vulnerable as the levels of calcium carbonates is naturally low. As mentioned before the corals also face danger due to decline in the concentration of carbonate saturation. Over the successive generation even minute changes in species can increase the reactions manifold which can drive key reorganization in the platonic ecosystems.

Human activities play a major role in the process of ocean acidification; activities such as factors such as overfishing; invasive species and climate change amplify the already multifaceted mission of assessing the impact of acidification of the oceans.

With population explosion demand for fish products has also increased gradually over the decades. It has been noted by the Food and Agricultural Organization of the United Nations that an additional 27 million tones of production will be required to maintain the present level of per capita consumption in 2030. But on the flip side it has been estimated by the Food and Agricultural Organization that 32 percent of the world's fish stocks are depleted or recovering from depletion or are being overexploited.

Also it is important for the coral reefs that the pH level of oceans remains at a level so that they can persist. The ecosystem is provided with many

services by the coral reefs that are vital for the existence of mankind. These include nurseries for fisheries, building materials, reef-based tourism and also the well-being linked with the subsistence of the natural ecosystem.

The Legal Framework

The effects of ocean acidification are grave. As a result, over the years, many forums have been established to look into the same. The problem needs to be realized not only at regional level but needs to be raised at multi-regional platforms. In the year 2008, through the Monaco Declaration, 155 scientists from 26 countries called for policy makers to show haste in reining in the levels of CO² in the atmosphere to avoid dangerous ocean acidification. The UN General Assembly has expressed its concern over the adverse effects of that ocean acidification and also the danger faced by marine organisms due to it.

The Climate change Regime

Ocean acidification shares the same root cause of problem as climate change-anthropogenic CO² emission. Reducing the level of CO² emissions can be said to be the most effective strategy to counter ocean acidification. The lower are the emissions of CO², lower is the possibility for the impact of climate change. Therefore in order to mitigate the problem of ocean acidification the climate regime, comprising United Nations Framework Convention on Climate Change (UNFCCC) and its successor Kyoto Protocol seems viable.

The UNFCCC was created to address the problem

of climate change on a legal basis. As per Article 2 of the UNFCCC, its objective is to stabilize the concentration of greenhouse gases in the atmosphere to a level that would reduce the interference of anthropogenic CO² emissions with the climate system. As climate changes tend to have impacts upon the ocean, it is advisable for ocean acidification to be included within definition of harmful anthropogenic interference under Article 2 of the UNFCCC.

Due to the practical limitations of the UNFCCC, the Kyoto Protocol was adopted. The Kyoto Protocol aims at setting international obligatory emission reduction targets and also contains a provision which will help in the prevention of ocean acidification to a larger extent. The provision requires the parties to enhance and protect reservoirs and sinks of greenhouse gases that are not controlled by the Montreal Protocol.

However, the climate change regime is still not very effective to deal with ocean acidification. Art 2(1) (IV) of Kyoto Protocol makes the provision for the states to make policies and implement measures for the control and regulation of the CO² appropriation technologies. Thus the CO² absorbed by the oceans is being looked up as a solution to climate change, and while it may be regarded as a solution for climate change, it'll definitely aggravate ocean acidification, and such provision can indeed be questioned.

States play an important role in the mechanism for the control and reduction of the emission of anthropogenic CO² below specified levels and also

adoption of such measures and policies amounting its reduction 5 percent below the 1990 levels.

The UN Conventions on the Law of the Sea

The UNCLOS forms the basis of protection in marine areas within and beyond national jurisdiction. Preservation and protection of marine ecosystem is dealt in Part XII of the UNCLOS. This provision places an obligation on the states to preserve and protect the marine environment. Art 194(1) of the UNCLOS also places a duty upon the states to reduce, control and prevent pollution of marine ecosystem from any source.

The UNCLOS also covers atmospheric pollution and require States to implement rules and regulations for the same to prevent pollution of marine ecosystem. This clause is very pertinent to the problem of ocean acidification by placing States under an obligation a duty to control, reduce and prevent acidification caused by CO² emissions.

The Dumping Regime

Where on one hand the absorption of CO² from atmosphere falls under the purview of the UNCLOS and the regulatory framework of the Climate Change Regime, on the other hand the disposal of carbon wastes in oceans and seas is regulated by the dumping regime.

The dumping regime consists of the 1972 Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matter (1972 London Convention) and the 1996 Protocol to the London Convention (1996 London Protocol)

The 1995 Global Programme of Action for Protection of the Marine environment from Land-Based Activities

Human activity, particularly, consumption of fossil fuels is the prime source for ocean acidification. In order to reduce the emissions there is an urgent need to realize the gravity of the problem and efforts should be taken in the same regard which is reduction in the consumption of fossil fuels, i.e. non-renewable sources of energy and adoption of an alternative eco-friendly approach for the same. In 1995, 108 countries adopted the Global Programme of Action for the Protection of Marine Environment from land Based Activities (GPA), keeping the above objective into consideration.

Under the GPA, states are supposed to set up national programmes of action which will help in reducing the harm being done to the marine ecosystem from land based activities. Under the GPA the UNFCCC is regarded as a global Convention which describes the duty of the states to protect and preserve the marine ecosystem.

The Convention on Biological Diversity

Special mention needs to be given to the United Nations Convention on Biological Diversity (CBD), which provides a legal instrument for the protection of the same. CBD can be regarded as one of the key agreements that regulate issues relating to biodiversity. Primary objectives of CBD are:

- Sustainable usages,

- Unbiased allocation of benefits arising out of genetic resources, and
- Preservation of biodiversity.

'Marine and other aquatic ecosystems' are expressly included in the CBD in its definition of biological diversity which needs to be conserved. 193 countries are a party to the CBD. Developed as well as under-developed countries are parties to CBD, realizing the eversion of the gases which are harmful to the marine ecosystem and those amounting to its acidification especially Carbon dioxide, together.

Conclusion

The problem of ocean acidification still persists to be across the present regimes and thus it may result in suboptimal protection of the environment. While the regulatory instruments do touch upon the issue, they are short of having the necessary profundity to sufficiently address it.

Various regimes have indeed provided a degree of protection from the adverse effect of ocean acidification, still a lot of work is yet to be done in terms of developing a rational and sound answer to the issue. There is a need for an international treaty that specifically addresses the issue of ocean acidification. Such a treaty would pave a way for every country to limit its emission of greenhouse gases, also enabling them to focus simultaneously on both climate change and ocean acidification, so that proper regulations are in place to meet such targets. It would also provide an essential step that should be taken to move away from the congestion of treaties and making sure that the critical issue of

ocean acidification is not lost in the midst of ocean of regimes.

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COASTAL REGULATION ZONE NOTIFICATION- THE EFFECTIVENESS OF THE CRZ IN PROTECTING OUR COASTS

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INTRODUCTION

Indian coasts stretches over 6,000 kilometres, supporting numerous fishing communities and enhancing the revenue generation in coastal villages, towns and cities. But as per the report of Claude Alvares, it is stated that the excessive fishing in the coasts is leading towards marine pollution, excessive extraction, shore line development and destruction of the 'khazans' which are endangering the cultural ethos of the coasts.

Marine ecosystem in India is primarily threatened by:

- Marine-time trade,
- Exploitation of ocean resources and
- On-land coastal development.

The marine trade and pollution associated with it are regulated by the Territorial Waters, Continental Shelf, Exclusive Economic Zone and other Maritime Zones Act of 1976. The Maritime Zones Act asserts Sovereignty of India over the natural resources in the Continental Shelf and the Exclusive Economic Zone. The act provides recognition and effect to various international conventions.

Fishermen community have protested against it, necessitating the coastal states to pass various legis-

lations in this regard. One such legislation is 'Kerala Marine Fishing Regulation Act', which was passed by the state of Kerala in 1980. The act prohibited the use of certain mechanised gears in the fishing boats entering certain restricted areas of the ocean. In the case of *State of Kerela v. Joseph Antony*, the apex court, held the act to be in consonance with the constitution.

The development along the coastal stretches is regulated by a regime comprising the Coastal Regulation Zone (CRZ) Notification of 1991. It made provision for the setting up of the ad-hoc committees to monitor the implementation and clarifications to the CRZ issued by the Ministry of Environment and Forests (MEF). These regulations and notifications can be said to be a reaction based on some SC orders berating the casual approach of the states towards coastal protection.

This paper will look into the development and need for the adoption of CRZ Notifications for the costal areas.

THE CRZ NOTIFICATION

HISTORY OF THE NOTIFICATION

The first initiative towards the protection of the coastal land was taken by the then Prime Minister of India, Ms. Indira Gandhi. She wrote a letter to all

the Chief Ministers stating that a number of complaints have been reported to her regarding degradation and deterioration of beaches in the coastal states of the country by way of constructions, commercialisation and other activities. Acting for the same, she asserted on coastal clearance of the activities up to 500 metres from the water at the maximum high tide.

Tourism activities were getting hindered therefore; several coastal states urged the centre to reduce the limit to 200 metres. Taking into consideration the above issues, a body set up by the union government, reduced the limit for some beaches and coastal states.

In the case of *Sergio Carvalho v. State of Goa*, the enforcement of the Prime Minister's directive was prayed for by the union government in the High Court of Bombay against a hotel which was constructed on the coast against the limits set by the directive in which it was stated by the Bombay High Court that the PM's directive is a mere direction and has no binding force of law, case was decided in favour of the hotel.

In February 1991, the Ministry of Environment and Forests, framed regulations under the Environment Protection Act, 1986 and the Environment Protection Rules, 1986 to preserve a coastal zone extending over a strip of land up to 500 metres from the High Tide along the entire Indian Coastal line. They restricted the use and development of coastal land up to 3,000 square kilometres (km²), of the coastal India. However, the distance shall not be less than 100 metres or the width of the creek, river or backwater.

But the draft was prone to scrutiny for it

ambiguous, unclear and had many loopholes.

As result it was amended in the year 1994 where the minimum limit for the HTL to apply in the case of rivers, creeks and backwaters was reduced to 50 metres. These amendments were further notified in the Coastal Zone Management Plans. The HTL is basically the point where the tide reaches the foot of the cliff at the time of a high tide and is shown as a pecked line with the appropriate land symbol.

In the landmark case of *Indian Council for Enviro-Legal Action v. Union of India* also known as the CRZ Notification case, the S C held that the amendment reducing the width of the zone from 100 metres to 50 metres in the case of rivers, creeks and backwaters is contrary to the objectives of the Environment Protection Act, 1986. However, the apex court did not restore the 100 metre criteria from the original notification.

SCENARIO PREVALENT IN 1991

The CRZ prohibited 13 designated activities inclusive of the establishment of new industries, expansion of existing units, construction on the restricted land and those activities which were directly interfering and affecting the shoreline of the coastal states.

Although certain activities were allowed within the prescribed limits; activities requiring water front and the foreshore facilities fell in such category. Activities of creation and construction of defence port and thermal power plants which have received clearance from the MEF were allowed. Express permission of the MEF was to be required for the construction, creation and promotion of Beach resorts and other requisites for the tourism

industry.

It further empowered the Ministry of Environment and Forest (MEF), States and Union Territories to create mechanisms for the adequate and efficient enforcement of rules. The original draft notification of 1990, was open for public scrutiny however, this clause was omitted from the final notification of the CZR.

INDIAN COUNCIL FOR ENVIRO-LEGAL ACTION V. UNION OF INDIA

A writ petition was filed under Article 32 of the Constitution by Mr. M.C. Mehta. The petition primarily challenged the amendment notification of 1994 stating it violative of the basic principles and the essence of coastal protection. The petition further criticised the government for its inaction in protecting the environment and providing for adequate safeguards against activities which were blatantly affecting the coastal environment of India.

The apex court criticised the Government for gross inaction and also for non-implementation of the regulation even when there was blatant non-adherence. The SC observed that it is the duty of the Government to make sure that the regulations framed were followed in their true spirit. Any amendments made in violation of the true spirit of the regulations would be deemed to be ultra-vires of the regulation and as a result would be declared void. The bench further held that the amending notification of 1994 gave much more relaxation to the hotel and tourism industry than what was asked by them and what was recommended by the Vohra Committee.

The proviso in Annexure III in Para 7 Sub-Para 1 which gave the Central Government arbitrary, unchannelized and unguided power by which ecological degradation could and would be caused was declared *ultra-vires*. It was deemed to be violative of Article 21 of the Constitution of India.

The second point of consideration was for the reduction of the limit to 50 metres from the HTL for rivers, creeks and backwaters. Regarding this, the SC observed that this amendment has not been made in consonance with established principles of environmental law. It was further stated that this amendment was not made in conformity with the Vohra Committee's recommendations and had malicious intention involved. The amendment reducing the limit from the HTL to 50 metres was struck down..

The amendment regarding the setting up of goal posts, lamps, and net posts was allowed. It was held that construction of these would help the coast as well as it provided safety to the beaches and the tourists.

The Supreme Court adopted an environmental approach. It held that the courts are to be regarded guardians of the environment and are supposed to be involved actively to protect it and safeguard it from any harm. The SC highlighted the role NGOs

THE COSTAL REGULATION ZONE NOTIFICATION, 2011

The main objectives of the CRZ Notification 2011 are:

1. To ensure livelihood security to the fishing communities and other local communities living in

the coastal areas;

2. To conserve and protect coastal stretches and;
3. To promote development in a sustainable manner based on scientific principles, taking into account the dangers of natural hazards in the coastal areas and sea level rise due to global warming.

The current notification has several new positive features:

It widened the definition of CRZ, making the inclusion of the land area from High Tide Line to 500 m on the landward side, as well as the land area between HTL to 100 m or width of the creek, whichever is less, on the landward side along tidal influenced water bodies connected to the sea, mandatory. For the first time, water area up to 12 nautical miles in the sea and the entire water area of a tidal water body such as creek, rivers, and estuary without imposing any restrictions of fishing activities, were also included. The objective behind notification was to expand the horizons of CRZ by declaring territorial waters as a protected zone. This was in the response to earlier CRZ notification which regulated development on the coastal stretches; but pollution area was ignored per say.

The concept of a 'hazard line' was introduced. While the notification merely stated that the hazard line would be demarcated by the MOEF through the Survey of India, by taking into account tides, waves, sea level rise and shoreline changes, this concept owes its introduction to the realisation of natural disasters such as tsunami and floods that are prominent in such zones.

The concept of classification of CRZ into four zones has continued in the 2011 notification with the following delineation:

1. CRZ I- ecologically sensitive areas such as mangroves, coral reefs, salt marshes, turtle nesting ground and the inter-tidal zone.
2. CRZ II- areas close to the shoreline, and which have been developed.
3. CRZ III- Coastal areas that are not substantially built up, including rural coastal areas.
4. CRZ IV- water area from LTL to the limit of territorial waters of India

CRZ IV has been changed from the 1991 notification, which covered coastal stretches in the islands of Andaman & Nicobar and Lakshwadeep. The MOEF has issued a separate notification titled Island Protection Zone 2011 in relation to these areas.

A new category called areas requiring special consideration was created consisting of:

- (i) CRZ areas of Greater Mumbai, Kerala and Goa, and
- (ii) Critically vulnerable coastal areas such as Sunderbans.

Clearances for obtaining CRZ approval are now time- barred. Further, for the first time, post-clearance monitoring of projects had been introduced in the form of the requirement to submit half-yearly compliance reports, which were to be displayed on the Ministry's website.

With respect to the list of prohibited activities, one of the most important changes has been that of expanding the list of exceptions to the rule prohibiting setting up of new industries and

expansion of existing industries. While the earlier exception was limited to those activities which required access to the water front, four other exceptions have now been incorporated which include:

- Projects of Department of Atomic Energy;
- Facilities for generating non-conventional energy sources and desalination plants, except for CRZ-I zones on a case-by-case basis after doing an impact assessment study;
- Development of Greenfield airport permitted only at Navi -Mumbai; and
- Reconstruction, repair works of dwelling units of local communities including fishers in accordance with local town and country planning regulations.

Another important aspect is the introduction of the Coastal Zone Management Plans, which are to be formulated by the State Governments or the administration of Union Territories and would regulate coastal development activity and

In Greater Mumbai, the redevelopment of approximately 146 existing slums in CRZ areas has been permitted, provided that the stake of the state government or its agencies in these projects is not less than 51%. Redevelopment and reconstruction of old, dilapidated, and unsafe buildings in the CRZ-II area has also been permitted. Also, the floor space index (FSI) or floor area ratio (FAR) prevailing in the Town and Country Planning Regulations as on the date of the project being sanctioned, would apply. In order to ensure transparency and efficiency, the redevelopment of slums and dilapidated structures

in Mumbai are subject to Right to Information Act, 2005 and auditing of the same will be done by the office of Comptroller and Auditor General (CAG) of India.

The 2011 Notification explained measures that can help in the prevent of pollution in the coastal areas/coastal waters. While the CRZ Notification 2011 has introduced several positive concepts seeking to protect the interest of the local traditional communities, it does have a few drawbacks, such as:

Although the no-development zone of 200 metres from the HTL is reduced to 100 metres, the pro-vision has been made applicable to “traditional coastal communities, including fisher-folk”, thereby giving the chance for increased construction on the coast and higher pressure on coastal resources. Disallowing Special Economic Zone (“SEZ”) projects in the CRZ. There are no restrictions for the expansion of housing for rural communities in CRZ III.

The CRZ Notification, 1991 did not indicate the enforcement mechanism. This was one of the major drawbacks of the Notification and also the primary reason for the large number of violations.

The CRZ Notification, 2011 lays out the method and the time frame in which actions shall be taken against any violations of the Notification. The Coastal Zone Management Authorities (CZMAs) at the State level and the NCZMA, at the Central level shall be strengthened for effective enforcement. The violation shall be identified by using latest appropriate maps, satellite images and information technology within a period of four months from date of issue of the 2011 Notification

and necessary action will be initiated in accordance with the Environment (Protection) Act, 1986 within a period of four months thereafter.

CONCLUSION

The CRZ Notification 2011 is a major step-up since 1991 Notification; MOEF has made special efforts for the inclusion of specific provisions to benefit the fishermen community residing in all the coastal areas. It helped to let go of various shortcomings of the 1991 Notification such as time-barred clearances, enforcement measures, special provisions for specific coastal stretches etc. Notification under-went a major change as evident from 2011 notification but as law should meet the requirements of a changing society, some problems were overlooked from the same, which needs to be addressed. A few amendments have already been made to the CRZ 2011 regarding the limits and application in certain states. But the regulation is yet to be adopted and implemented by some states for the protection of the coasts and the marine environment.

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