

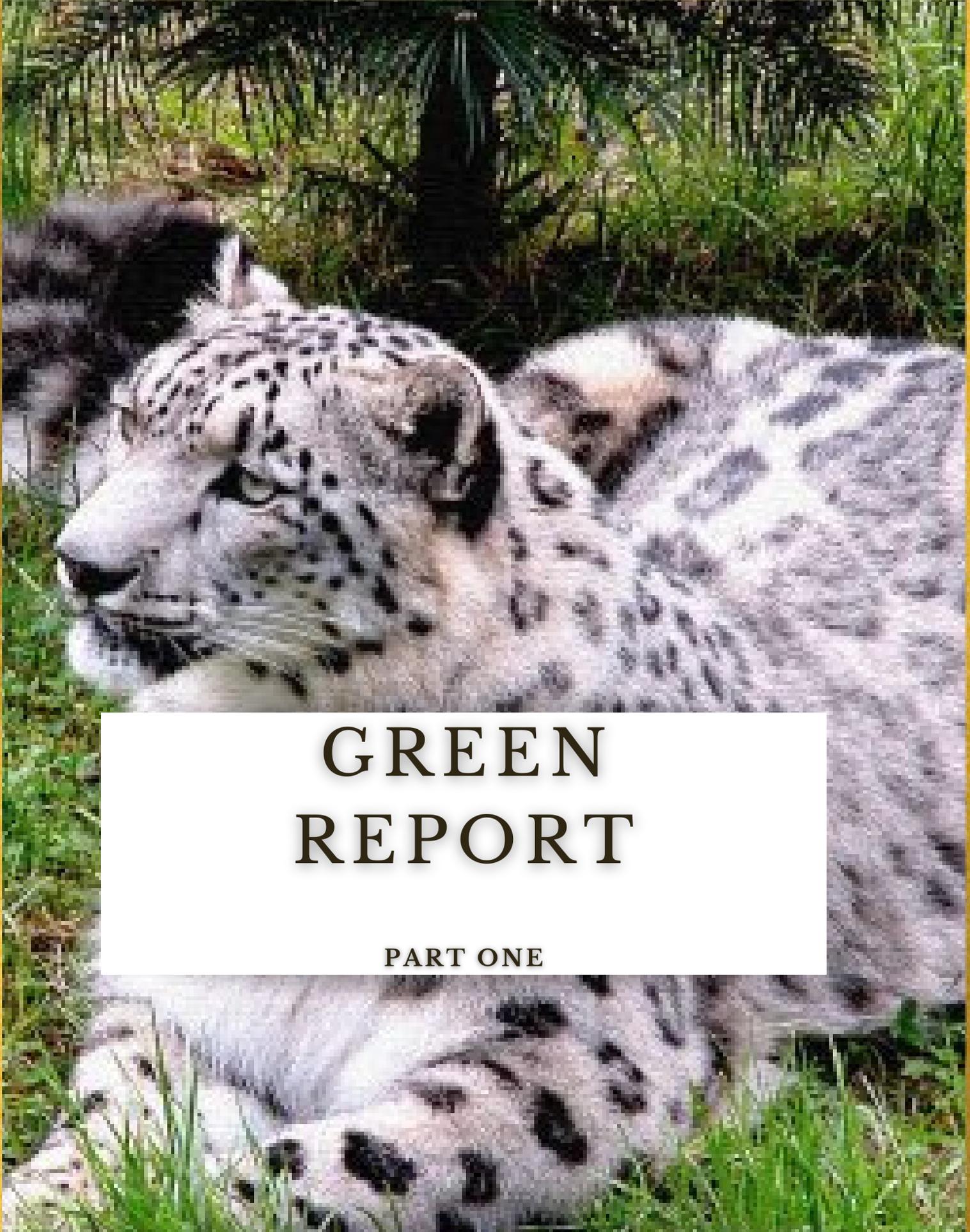


HPNLU GREEN GAZETTE

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**CENTRE FOR ENVIRONMENT
AND DISASTER MANAGEMENT**

**HIMACHAL PRADESH NATIONAL LAW
UNIVERSITY, SHIMLA**



GREEN REPORT

PART ONE

Photographer: Rohit Guleria, a second-year Law student at Awasthi
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CEDM

IMPLICATIONS OF COVID-19 ON ENVIRONMENT

About the Author: Pallavi Gupta is a final year student of LL.M., from Aligarh Muslim University, Aligarh.

Last few months have turned out to be one of the toughest times for almost every human being as the world has encountered this pandemic in the form of a rapidly infectious viral disease, named Coronavirus (Covid19) and it is linked with same family of viruses as Severe Acute Respiratory Syndrome therefore it is also known by its another name as SARS-CoV-2, it has already targeted thousands of lives and the numbers are still rising. Presently, the figures are as follows; 12,378,787 people around the globe have been infected with this disease out of which 556,585 have lost their lives and 7,182,394 of them have recovered from this virus. An indefatigable attempt is being made worldwide by the medical teams, the Health Ministries and Governments etc. to come up with some preventive and remedial measures to deal with this situation.

With a view to control the spread and outbreak of this virus, several restrictions on the movement of people were imposed by the governments in their countries. Method of complete lockdown has also been adopted by a number of countries which envisaged a complete break on unnecessary outings, trips and shopping etc., for varying time periods. It has led to a devastating impact on the world economy as all the shops, showrooms, businesses, industries and factories remained closed. Moreover, the economy has also been hit hard as the air services were grounded, travelling and transport was ruptured completely. Due to all this, almost every sector has suffered badly and many people have also lost their jobs during this time. This global threat has undoubtedly affected

a number of lives but at the same time, it has equally led to some profound changes in the environment and that too in a very rapid fashion.

to the world but they were also handled ultimately. Throughout history, even prior to the industrial age, the spread of disease has been linked to lower gaseous emissions.

Assessing the impacts that this pandemic has had on the environment is definitely a herculean task as a wide variety of issues is entangled within this particular issue. However, this article will try to highlight with specific reference to the environment; some of the damages that have been caused and along with that, it will also discuss certain positive effects or benefits which have been experienced in various nations all around the globe during this fight against coronavirus.

Multiple unprecedented after-effects of this virus have been observed. Among them, one of its effects has also fallen upon the environment; which can be further classified into three different categories as it has had positive as well as negative impacts and apart from these, there have also been certain effects which are somewhat cryptic in nature.

This pandemic has also affected the economy of our nation very badly. A huge loss in its economy has been calculated as a number of people became unemployed during this time.

Economy has been hit hard in every sector; flights grounded, industries were completely shut down, which has definitely affected the standards of living of an individual. The consequences of which are apparent in the form of legal violations in the environment sector. As on 22nd March 2020, a complete lockdown was announced with immediate effect in the country where the people were not really prepared for such a big step. It is not very difficult to imagine the state of daily wagers and the people who were living apart from their families for their survival. Many people had to face several hardships due to this sudden halt that came in their life. Some were very badly affected with this and started running short of money after few days and while making attempts to cope up with this sudden economic setback many illegal activities such as poaching, fishing, hunting, unnecessary cutting of trees etc., were being committed by people to maintain even a low standard of living, which created a negative impact on environmental conditions.

Adding upon the negative impacts of this virus named Covid-19 on the environment, we come across the fact that when this pandemic had just begun and cases were starting to be reported from the streets of Wuhan city of China, a rapid decrease in greenhouse gas emissions were noticed by scientists.

A huge increase in the medical waste all around the globe has been observed as the medical equipment like gloves and masks are being used only once and then being disposed of. Likewise the populace has also been advised to wear masks and gloves to protect themselves and many of them are using such masks which are not reusable which again adds upon to the chunk of waste. And another unfortunate effect of this pandemic that is being experienced by the nations is that many of the recycling programs which were in action in various countries have been also affected as almost

everything has come to a standstill during this era of social-distancing and lockdown because of the risk of catching this virus which is associated with this.

Moreover, one of the preventive measures which have been recommended to the public at large by the World Health Organization to fight against this coronavirus is to regularly wash and disinfect hands to fight with this pandemic. But, it's very important to understand that with the passage of time, the world population has witnessed a quite rapid and continuous increase in its number while, on the other hand, we have been forgetting the all-important principle of sustainability of resources. Recalling the U.N's data on this point; it says that around 2.2 billion of the population does not even have access to drinking water. Now, with more focus being on hygiene and sanitization, the time is not far when water will become a privileged commodity.

Now, moving immediately towards the positive impacts of this lockdown which are being experienced by the people in various parts of the globe; all the restrictions that were enforced with regard to the containment of this disease, starting from a great clampdown on the movement of public along with the halt on air services; domestic and international and all the other public transport services, consequent to the announcement of lockdown by various states have helped a lot in reducing the carbon emission rate in the environment. According to a study, earth system scientists have estimated that there has been a drop in carbon emission of near about 25 percent and likewise around 50 percent drop in nitrogen oxides have been reported in China, which implies that around 77,000 lives have been preserved in the last two months.

Though this rate will undoubtedly rise and reach to the normal that we have become used to, once these

services are completely restored. But, still the freshness in air can be enjoyed to its fullest for the time being.

An instant decrease in the level of air pollution, cleared shallows, inlets and waterways, scenes of piercing blue clear skies in the most polluted cities are really blessings in disguise in this catastrophic time when almost all the activities have been forced to be stopped and the whole world seems to have come to a standstill.

In India too, a significant change has been witnessed in the air quality of a number of metropolitan cities Mumbai, Bengaluru and Calcutta where the air quality index usually remains in three digits have experienced a great improvement in the air quality and the AQI has remained within two digits during the lockdown period. This is the result of the decline in all the unnecessary commuting and the air travelling trips and tours.

In 2014, New Delhi was reported as the most polluted city by the World Health Organization. Here, when pollution level has reached its peak, it has been reported to have soared up to 900 and sometimes it has even gone off the measurable scale. But, a tremendous outcome of taking almost 11 million registered cars off the roads and of putting a complete ban on the construction work in the city, has been that the air pollution level has reached to as low as 20 which is a huge achievement.

Another positive impact of this pandemic on the environment is that there will be a requirement of controlled investment by the government on issues relating to environment protection. If we talk about the cleanliness of rivers in our country, we will find that the water bodies like river Yamuna and Ganga could not have been cleared even after immense efforts of several governments

in this direction. But the nationwide lockdown due to the threat of coronavirus has showered some of God's blessings towards the deplorable conditions of these holy rivers where again a significant change in the water quality has been recorded. According to the real-time water monitoring data of the Central Pollution Control Board (CPCB), the average water quality of 27 points of the Ganges seen in recent days, is suitable for bathing and propagation of wildlife and fisheries. While we are talking about the improved condition of water, it is also noteworthy that due to this, after around 30 long years, dolphins have been spotted in the river Ganga.

Plants and crops can be seen growing much better than earlier since they are getting much cleaner water to grow as the problems that were hitherto faced are no more existent. This includes the ruining of crops by the water containing chemical effluents coming out of the industries and directed towards the crops or some other forest areas. The condition of atmosphere and soil presently is also very favorable for the growth of plants. As a consequence of all this, another change which has been noticed is that animals which were facing the danger of extinction are now being spotted in different regions.

Likewise, it has also been claimed by some local residents of Mumbai that lately the water near the beaches of Mumbai has turned pink in color and the reason behind this is that flamingos which are normally seen only once in a year, have started coming over there. Turtles are also being spotted around who were earlier scared of coming out due to human interference. Lesser water clogging issues are there.

Along with these positive impacts on the environment, an increase in illegal activities such as deforestation and poaching has also been reported on the other hand. This pandemic alarms

us that the prevention of landscapes is a need of the hour in order to ensure the protection and preservation of humanity. It can be taken up as a forewarning by nature to us; humans, to take steps to balance our bond with nature. World's leading biodiversity experts have also been warning us for a considerable number of years that the uncontrolled devastation of the environment and extinction of animal species needs to be checked regularly otherwise many serious threats could be received by the public at large in the near future.

This is a time where we need to adopt certain measures which can connect us back to nature because our neglectful attitude towards nature will lead us to many dangerous and hazardous consequences. We all should adopt a method of green recovery to bring our lives back to normalcy after the threat of this pandemic has been successfully tackled.

COVID-19 & SLIPPING ENVIRONMENTAL COMMITMENTS

About the Author: Ayushi Tripathi & Shivi Shrivastava are 4th year law students at the Government Law College, Mumbai & Nirma University, Ahmedabad respectively.

Introduction

In a matter of a few months, the planet has been completely transformed. Lakhs of lives have been lost, millions of them are grappling with this unprecedented tragedy and for those who are safe, their entire life has been altered, all this from a virus that has never been known to humankind before December, 2019. COVID-19 is a global health crisis that has posed an atrocious choice in front of the world: the society and economy. It has

made every country face its vulnerabilities and strength and has taught us a myriad of lifelong lessons.

From the contagious cities far away, the pictures of street bustling are the memories that the pandemic has imposed a padlock on the human and economic activities. The complete lockdown implemented by the authorities had hijacked every business, flights being cancelled, people holed up at their homes and were instructed to work remotely. Surprisingly, all these ramping down of activities have led to some unexpected positive results on the environment. The concentration of transport and industrial effluents have dwindled, the air has become cleaner and so are the water bodies. But it is skeptical to talk about the environmental consequences of post-COVID period, whether the sustainable environment will recommence or it is only for the time being?

COVID-19 being a zoonotic disease is the newest entry in the list of what Jared Diamond calls the 'deadly gifts from animal friends'. The disease is the outcome of humanity's dysfunctional relationship with nature. Human health is inevitably related to the environment and the animal, but this phenomenon has been aggravated by the horrendous acts performed by us which has led to the degradation of the environment. The pandemic is the result of the impotency of the international community to save our wildlife, environment, nature and traditional buffer zones. Similar to other deadly diseases, the origin of COVID-19 is also the outcome of illegal and unregulated trade and consumption of wildlife. Today, the world has come down on its knees and it would not be erroneous to say that the current situation can be a warning to us to rectify our fractured relationship with nature.

Amelioration of Environment: Short Term or Long Term?

COVID-19 pandemic is testing our resilience and

preparation. The world is united and practicing every possible way to curb the spread of the virus and giving a tough fight to the series of challenges that is turning up against us. The list of negative impacts of the pandemic is ceaseless, but unexpectedly it has also led to some indirect positive impacts, the halt in the rapid loss of nature and disastrous climate change being the first and the foremost. The current situation can be seen as an opportunity to alleviate the environment and learn lessons for the future. The impact on the environment by the stringent lockdown imposed is clearly noticeable not just in India, but all over the world. The major air pollutants have drastically reduced, noise pollution has come down to a great level and so the birds and wild animals appeared relaxed.

The studies showed that the concentration of nitrogen dioxide has dropped by 60% over northern China, the United States and Western Europe. The emission of Carbon Dioxide also plummeted in major parts of the world. In India, during the lockdown the average Air Quality Index (AQI) in many cities was recorded in two digits. Reports also suggested that the proportion of 'good quality air' was surged by 11.4% in 337 cities. The pollutants from the air have faded so much that the Himalayan peaks are clearly noticeable from Jalandhar in Punjab. Due to lack of tourist activities because of the pandemic, there has been a vast change in the appearance of the beaches around the world. Also, the river Ganga has seen an improvement of 40-50% in its water quality. Yet flaunting about the positives of this pandemic is not a solution to climate change and pollution. All this is just for a few months and a small silver lining to COVID-19's dark clouds, but will do nothing in the long term to save the creatures of this planet.

Once the situation gets normal, it is obvious to consider the possibility of people returning back to old habits like frequent flying and travelling

which form the biggest part of the carbon footprint. It might be the case that people who have been working from home will travel to the office twice a day to make up for it. All the decisions that have been taken as a retaliation to the pandemic might have some unexpected deteriorating results on the environment, linked for instance the spraying of disinfectants on the streets; construction of medical centres without prior environmental impact assessment. Several reports have elucidated that despite this temporary relief and improvement, the global economic crisis could make things worse for the environment in the future. Carbon emission is expected to mushroom once the economies are recovered and this has been a trend after recording multiple calamities in the past.

Inactive Environmental Laws

While the zoonotic disease has crippled most of the world, the inactiveness of the international law bodies seems to be the reason for its root source. Humankind suffers for the actions of few; the city of Wuhan from where origin of SARS-CoV-2 is linked and inaction of many; the international organisations' inability to act decisively. Despite the constant efforts of international law bodies like the World Health Organisation (WHO), World Organization for Animal Health and the Food and Agricultural Organization (FAO) of the United Nations to curb the illegal and unregulated trade of wildlife, these lack the formulation of recommendations for countries to regulate wet markets.

A more legally binding agreement in more than 183 countries is the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) that regulates the international trade in wildlife for conservation. CITES, prohibits commercial trade and strictly regulates trade in more than 35,000 species, non compliance to which may result in trade ban. The treaty in spite of its strict law fails to cope with the present situation arising out of pandemic to deal with the wildlife

trade regimes. The alarming call is long gone and either implementation of environmental laws by a rigid and stricter body or amendments in the existing regimes of CITES is what the governments should aim for. There is an urgent need to cope with environmental issues as well as COVID-19 at the same pace and not prioritize according to the current health crisis in humankind. After all, when the world stands back on its feet, the environmental concerns would drain the economy and could put the future at stake

The domestic markets possess a pronounced threat to human life, if left unregulated. The world has come to a standstill which was not witnessed even at the peak of WWII. These are the grave repercussions of putting the wildlife on sale. The wet markets which are believed to be the livelihood of millions, have put a question on the risk that comes with it. The markets raise great concerns on the health of humans and animals. Countries like Australia over the time have shut the businesses of slaughter houses and have moved to what is called chilled and frozen meat trade. But similar is not the case with many countries, where slaughtering animals for the purpose of fresh meat still sustains.

The World Health Organisation in association with UN bodies is working towards developing guidelines for the regulation and safe operation of wet markets. Thousands have signed petitions addressing the concern of public health to ban the wet markets but the Chinese government gradually reopened the markets to begin operations once again.

Conclusion

The year of 2020 was supposed to be a year of environmental actions which was delayed due to the disastrous effects of the pandemic as it lacked the attention it deserved in framing policies. The

transformation in the International environmental laws was the prime concern that the governments aimed at approaching before the wave of the virus hit the world. The pandemic has shed the importance of environmental change and has caused the delay in global efforts.

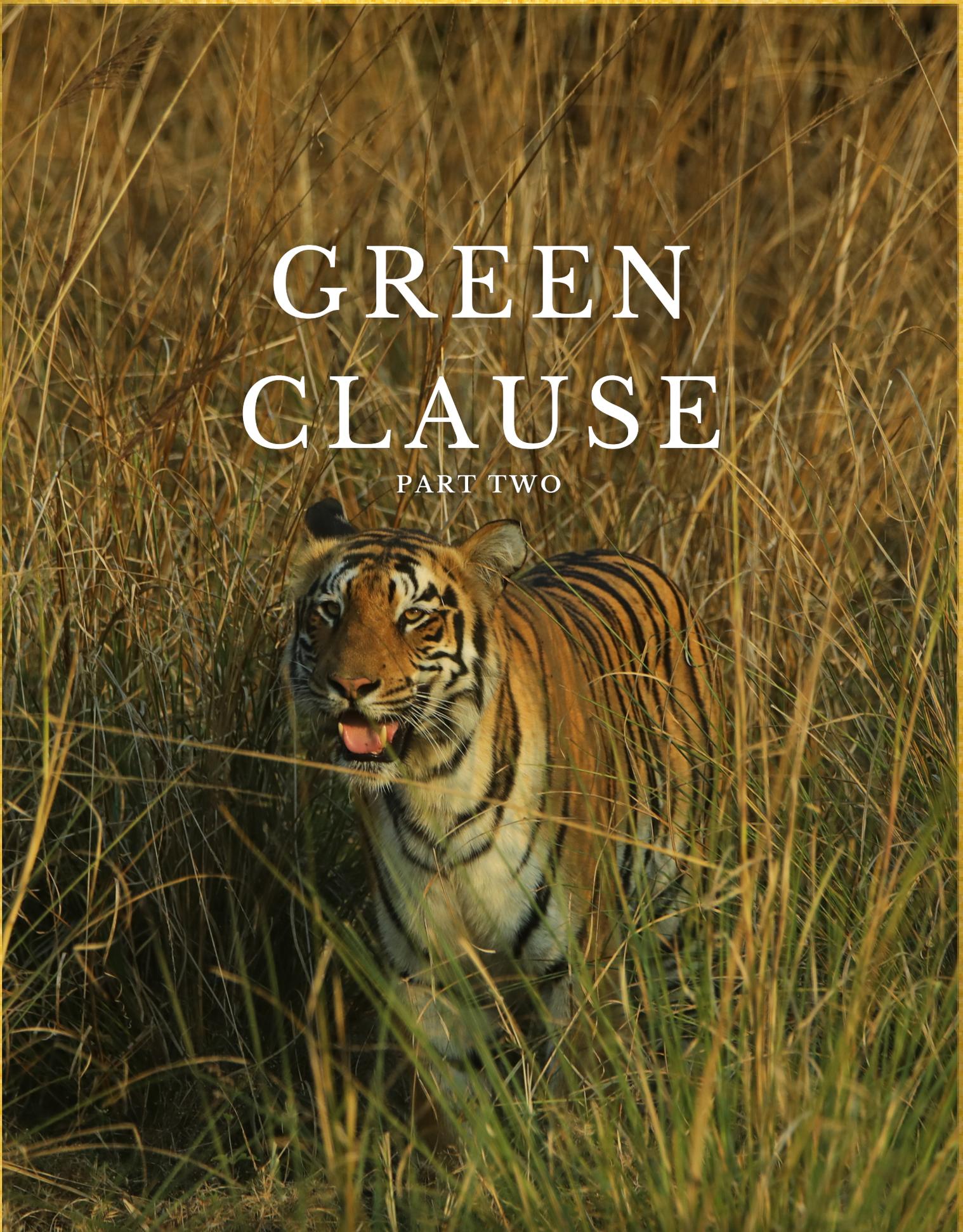
The spread led the UN body to postpone the flagship annual climate change conference which was scheduled to be held at Glasgow in the United Kingdom (UK) in November. The shift in the global priority was evident with rescheduling. With immediate health concerns, the intergovernmental efforts to reinstate the economy are crucial but should not limit actions against the threats from climate change and environmental degradation, which could be destabilising to the economies on a different time scale.

Prioritizing coronavirus is slowing our actions for global warming. Tackling COVID-19 and the climate emergency preferentially would be a terrible mistake. In fact, there is a bleak light here that our spending on beating this pandemic could be the catalyst for a sustainable environmental change. The earth, for one, recovered back quicker than we suspected it could. What's more, it would be out and out flighty to let that information assume a lower priority once social distancing and across the country lockdowns are not, at this point required.

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GREEN CLAUSE

PART TWO



Photographer: Ram Sharan Dvivedi stood third at HPNLU virtual wildlife photography competition, 2021.

CEDM

WATERS OF DEATH

About the Author: Ragini Agarwal is a law graduate from the National Law University, Jodhpur.

Introduction

A disturbing trend has been noticed in the past few years – fish have been dying on a mass scale on a regular basis in Indian water bodies. Nalagrah River (Himachal Pradesh), Dhanas Lake and Ropar District (Chandigarh), Keetham Lake (Uttar Pradesh), Banaghara Pokhar (Bihar), Line Tank Pond (Jharkhand), Satragachchi Jheel (West Bengal), Pavana River (Maharashtra) are all places in which such en masse deaths have taken place in the past year. These are not isolated incidents, but incidents that have occurred repetitively over the years due to discharge of industrial effluents or sewage that pollutes the water.

The recurring death of fish on a mass scale has been primarily due to loss of Dissolved Oxygen [henceforth “DO”], due to which the fish have suffocated to death in the water. This loss has been traced back scientifically to the increase in pollution due to which Biochemical Oxygen Demand and Chemical Oxygen Demand as well as algal growth has been observed. Growth of algae at night results in higher consumption of oxygen at night, resulting in loss of DO. Higher temperatures, untreated waste as well as ammonia poisoning are factors resulting in mass death of fish.

In this article, the author argues that the increasing pollution in water bodies not only violates the right to healthy environment but also threatens the animal right to life guaranteed under Article 21 of the Constitution. The author begins by delineating the legal provisions that protect the water ecosystem. The author then describes the protection afforded to fish and

argues for a composite system of liabilities that will ensure that the damage to the environment and the animals is not irreversible.

Protection afforded to Water Ecosystems – The Habitat of Fish

The places where such recurring deaths of fish have taken on a mass scale are wetlands, as defined in the Convention on Wetlands [henceforth “Ramsar Convention”], 1971. Article 1 of the Ramsar Convention defines wetlands as “areas of marsh, fen, peatland or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt”, and thus includes a variety of inland habitats. India as a signatory to the Ramsar Convention (since 1982) is obliged to protect the wetlands.

In *People United for a Better Living v. State of West Bengal*, the Calcutta High Court recognised the importance of wetlands or the habitat where such aquatic animals live, and prohibited the respondent state from reclaiming further wetland. To protect the habitat of fish from pollution, the Water (Prevention and Control of Pollution) Act, 1974, [henceforth “the Water Act”] creates Pollution Boards at the Central and State level.

These are regulatory agencies for controlling water pollution. Under Section 21 of the Water Act, the Pollution Control Boards have the power to collect sample of effluents discharged from industries.

The Pollution Control Board however, have not been stringent in their actions to control disposal of sewage and trade effluents in water bodies as is their duty under Section 17 of the Act. Though the M.C. Mehta v. Union of India decision also gave guidelines through which the river Ganga could be saved and the aquatic life in it could be preserved, mass death of fish keeps on occurring, making the water ill-suited for drinking purposes, and the fish habitat unsustainable. Further incidents showcasing the lack of stringent actions are the reports in case studies conducted by College of Fishery Science, Jabalpur (for Madhya Pradesh) and the Cochin University of Science and Technology (for Periyar River, Kerala).

Notably, the Upper Ganga River Basin is a part of the Ramsar List of Internationally Recognised Wetlands needing strict action to ensure survival. India is a signatory to the Ramsar Convention and is internationally obliged to protect the wetlands enumerated under it.

Protecting Fish from Mass Death

Due to pollution of water in the wetlands, there has been stress in the environment resulting in massive fish death. This falls flat in the face of the Supreme Court decision of Animal Welfare Board of India v. A. Nagaraj, requiring protection of all life including animal life which are necessary for human existence under the ambit of Article 21 of the Constitution of India. Fish have been recognised as animals in Section 2(1) of the Wild Life (Protection) Act, 1972, and although a specific law does not exist for the protection of fish, they too have the right to survive in a habitable ecosystem, which is being systematically destroyed by the actions of the people.

The word 'animals' includes fish in their ambit and it is a fundamental duty of the people of India recognised in Article 51A (g) that natural environment and wildlife must be shown compassion. Thus, fish have a right to survive in

their natural habitat. Section 5 of The Fisheries Act, 1897 makes the poisoning of water in fisheries with intent to destroy fish punishable. Although the dumping of waste (noxious material) in wetland fisheries is without the intent to destroy the fish, the water is nevertheless poisoned leading to the destruction of fish on a mass scale.

The author makes a case for change in the statute to allow any deaths beyond a threshold measured in terms of density of fish population in the water liable – criminally if it is intentional, and civil liability in terms of polluter pays principle – if not without intent in the next section.

Using the Polluter Pays' Principle Effectively

In theoretical terms, the polluter pays principle is a model for allocating and abating environmental harm and requires the responsible individual firm or nation to bear the cost of pollution. It is a broad concept with different meanings depending on the specific context. In domestic laws, the polluter pays principle is applied to hold polluting entities legally and financially responsible for the harmful consequences of their pollution. It is the result of quite a lot of public debate on the internalization of pollution costs i.e. transferring of the burden of these costs back to the operator who caused it in the first place. In contrast, in international law, the Organization for Economic-Co-operation and Development (OECD) prescribes a quasi-regulatory regime of environmental taxation for the application of the polluter pays principle. According to the OECD, companies are taxed according to the level of pollution they produce.

As per the current laws, the liability for mass death of fish is as follows:

a) Criminal liability by way of imprisonment for a term which may extend to two months, or with fine which may extend to two hundred rupees (§5, Fisheries Act, 1987) in case waters are poisoned with intent to catch or destroy fish;

b) Disconnection of power and such other civil actions in case the water is polluted on account of laxity in effluent treatment by industrial units, as was done by Himachal Pradesh Pollution Control Board.

These deterrents are neither strong enough to make the polluters want to avoid liability, nor are they followed strictly enough in each case. The author argues for a subjective liability and the application of the polluter pays principle in the context of industries polluting the water ecosystems. This means that if an industrial unit or any other person pollutes water, resulting in the death of fish (beyond a certain threshold that may be prescribed), that person would be liable to pay for the damages caused, which would include following through with the necessary treatments to ensure that the pollutants in the water are removed.

This liability should be subjective, i.e. absolute in the sense that it would attach irrespective of whether or not the polluter had the intent to catch or destroy the fish. This will ensure that there are sufficient safeguards in place so that the industrial units currently discharging large amounts of untreated waste in water have enough incentive to ensure that they are following through on proper treatment of discharge.

It will give enough teeth to the environment protection laws to ensure that they are actually implemented in the long term interests of mankind. An amendment to the above proposed effect in the Fisheries Act would achieve the twin objective of ensuring safety of the water ecosystem in which the environment as well as the animals would have adequate protection.

Protecting the Nilgiris: Reversing the Damage to the Western Ghats

About the Author: Ishan Sharma is a student of B.A LL.B, 3rd Year at Himachal Pradesh National Law University, Shimla

Introduction

Ecosystem restoration can be described as the process of reversing the deterioration of ecosystems such as landscapes, oceans, and lakes in order to restore their ecological functionality and ability to satisfy societal requirements. But why is there a need for Ecosystem Restoration? It has been estimated that since the 1960s, more than half of the world's tropical forests have been destroyed, with more than one hectare being destroyed or severely degraded every second. As per the International Union for Conservation of Nature (IUCN), livestock, insects, diseases, forest fires, and other human-related activities destroy an estimated 3.7 million hectares of Europe's forests. In India, The Western Ghats mountain range is regarded one of the world's most biodiverse areas and is also a UNESCO World Heritage Site. The Nilgiris District is located in the southern part of the Western Ghats. Spanning 2,565 square kilometres, it was formerly covered in a mix of tropical highland forests and grassland. According to a local authority, the district has lost about 80% of its native vegetation in the last 200 years. Tea farms, coffee plantations, exotic tree plantations, and invasive grass and tiny plant species have mostly replaced these woods. Plants and animals are decreasing in tandem with the loss of forest habitat.

Commercial Plantations- The Problem

Tea and Timber Plantations are the root of the problem here. The commercialization of tea and timber in the biodiverse hotspot of Nilgiris has affected not only the forests but also man and animal

alike. The cutting of forests causes loss of habitat for animals and problems such as soil erosion for humans. According to the Indian Tea Association, tea plantations alone now span more than 600 square kilometres of the area, producing more than 135 million kilos of tea each year on average. In addition to being one of the costliest teas in the world, Nilgiris tea is also one of the rarest. A high-grade varietal of tea grown here set a world record price of \$600 per kilogramme. Plantations of timber were previously common in the area. The British began planting acacia, eucalyptus, and other commercially useful tree species around 1840, with the plantations on the Nilgiri plateau being among the most productive in the world. Between 1950 and 1990, the Indian Forest Department planted a huge number of these trees in the Nilgiris grassland region to suit the varied demands of a rising economy, including tanning bark for the leather industry, wood pulp for the paper industry, and an expanding demand for fuel.

Need for reforestation

The Nilgiris are home to a plethora of wildlife. The shola forests of the Nilgiris are home to indigenous trees such the mohonia, rhodomyrtus, Nilgiri champak, and mountain navals, as well as rare grass species. The Nilgiri tahrs, Indian bison, civets, and Bengal tigers are among the mammals found in the district, which also has over 350 bird species. In the Western Ghats, the major threat to amphibian life is habitat loss. Native Nilgiris forests provide important ecosystem services for surrounding communities.

Restoration

The work of an important restoration ecologist, Godwin Vasanth Bosco has helped restore native grasslands in the Nilgiris on roughly 50 acres at ten separate project sites, benefiting not only native woodlands but also fauna that depends on

them. Bosco established the Nilgiris' only grassland nursery at his home in Udthagamandalam after three years of researching the area. *Chrysopogon nodulibarbis*, *Themeda tremula*, *Eriochrysis rangacharii*, and *Zenkeria elegans* are among the 12 natural tussock grasses he grows. According to Bosco, almost all of them are "big varieties," meaning they can expand over a huge region and tolerate invasive species. The 12 grass kinds are likewise critically endangered, with a chance of extinction due to a variety of circumstances, including habitat loss and invasive species proliferation. He has also undertaken projects to grow shola trees and native shrubs in the region. Bosco discusses the necessity for "drastic global level adjustments" for truly successful local transformation in his recently released book, *Voice of a Sentient Highland*.

The effectiveness of forest restoration was also studied in the Valpari Plateau in a first-of-its-kind study, a part of Anamalai Hills, which the British deforested extensively between 1890 and 1940 for tea, coffee, cardamom, and eucalyptus plantations. In the past, remnants of the rainforest were used for selective timber felling. In actively restored areas, canopy cover increased by 82 percent, adult tree density increased by 69 percent, and species density increased by 49 percent. Other aspects such as sapling density and carbon storage increased as well.

Order of the Madras High Court

In 'K. Ussainar vs The State of Tamil Nadu', the Madras High Court ordered that eucalyptus and acacia be removed from Tamil Nadu's section of the Western Ghats in 2014. In its order, the High Court agreed that invasive exotics' overall environmental harm significantly outweighed their short-term economic benefits. However, the state's forest service has struggled to carry out the directive in recent years due to a range of issues including a lack of financing for removal and reforestation, a lack of technical experience, and insufficient labour.

Schemes for development of Forest areas

The three main strategies for conservation and development of forest are; afforestation through natural/artificial regeneration, protection and management. The National Afforestation Programme (NAP), the National Mission for a Green India (GIM), and the Forest Fire Prevention and Management Scheme are three important schemes being implemented by the ministry for the development of forest areas (FFPM). While NAP focuses on reforestation of degraded forest lands, GIM focuses on enhancing forest quality and increasing forest cover, as well as cross-sectoral actions on a landscape basis. Forest fire prevention and management are handled by the FFPM. The National Afforestation Programme (NAP) scheme's overall goal is to restore degraded forests and develop forest resources with people's participation, with a particular focus on improving the livelihoods of forest-fringe populations, particularly the poor.

Afforestation under seven plantation models, maintenance of previous years' plantations, and ancillary activities such as soil and moisture conservation activities (SMC), fencing, overheads, monitoring and evaluation (M&E), micro-planning, awareness raising, and Entry Point Activities (EPA) are among the scheme's major components.

Guiding principles for Forest Restoration

The International Union for conservation of Nature provides for a number of guiding principles for forest restoration. Some of them are mentioned below:

- For long-term resilience, manage adaptively.
- Stakeholders should be included, and participatory government should be encouraged.
- Adapt to the local environment through a variety of methods.

- Landscape ecosystems should be preserved and improved.

Conclusion

With an estimated 10 million Indians losing their jobs as a result of the second wave of COVID-19, investing in ecosystem restoration becomes even more critical in tackling rising unemployment rates and dwindling household incomes in the post-COVID-19 era. While traditional crisis-recovery techniques frequently deprioritize nature conservation, which is generally regarded as a complimentary aim, nature conservation and restoration are not mutually exclusive goals, but rather serve as a long-term vision for society and economies. It's easy to lose hope when we consider the magnitude of the difficulties we confront and the daily flood of bad news. We may, however, be the cause of ecosystem restoration and rectify the damage we've done, just as we caused the climate crisis, biodiversity crisis, and pollution crisis. As a result, we have the chance to be the first generation to Reimagine, Recreate, and Restore nature, kick-starting the movement for a better post-covid-19 world.

LEGAL FRAMEWORK FOR WASTEWATER TREATMENT IN INDIA

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Introduction

Sewage or domestic wastewater is a type of wastewater that is produced by people at large. The Central Pollution Control Board (hereinafter referred to as the CPCB) carries out a census after every ten years, with the help of State Pollution Control Boards, Pollution Control Committees, and Local Bodies. The

CPCB, in its survey, categorizes cities into Class I cities, Class II cities, and Class II towns.

In India, the biggest source of water pollution in can be attributed to the disposal of domestic sewage. As per the population census of 2001, all Class I and Class II cities together generate an estimated 29129 MLD sewage. But according to Central Pollution Control Board the gap between sewage generated and sewage treatment capacity is roughly over 70%. Likewise in 2008-09, the CPCB estimated that only 69.18% of sewage generated in Class I and Class II towns were being treated.

The urban population of India has increased three times since 1971. This has heavily impacted the sewage generation in urban cities. But the growth and development of treatment facilities have been much lower compared to the rising sewage generation. The sewage generation had increased by roughly 98%, but the treatment capacity has only increased by only 88%. This does not justify the needs for the 24.6% increase in urban population in 2021 as estimated by the Office of the Registrar General & Census Commissioner, India.

Moreover, various existing STPs and sewage pumping stations in India are in an overlooked state, with many plants not conforming to the rules and legal compliances which are conferred upon them according to the Environmental (Protection) Rules. Additionally, a lot of sewage is discharged without proper treatment, which increases the wastewater being emitted into the water bodies, giving rise to the problem of water pollution.

According to the assessment carried out by the CPCB across 35 states/UTs, there are currently 1631 STPs in India. Out of these, only 1093 are operational, 274 are under construction, 102 are non-operational and 162 new STPs are proposed

for construction. The largest sewage generation in India is from Maharashtra, followed by Uttar Pradesh, while the largest treatment capacity is in Maharashtra followed by Madhya Pradesh.

Legal Policy And Framework

Despite the large volume of untreated wastewater in India, there are currently no separate regulations for proper handling as well as disposal of wastewater in the country. The existing policies are derived from existing environmental laws such as:

1. Water (Prevention and Control of Pollution) Act, 1974 (Water (Prevention and Control of Pollution) Act, 1974, No. 6, Acts of Parliament, 1974 (India).
2. The Water (Prevention And Control Of Pollution) Cess Act, 1977 (The Water (Prevention And Control Of Pollution) Cess Act, 1977, No. 36, Acts of Parliament, 1977 (India).
3. The Water (Prevention and Control of Pollution) Amendment Rules, 2011.
4. The Environment (Protection) Act, 1986 (The Environment (Protection) Act, 1986, No. 29, Acts of Parliament, 1986 (India).
5. National Environment Policy, 2006.
6. National Urban Sanitisation Policy, 2008.
7. Hazardous Waste (Management & Handling) Rules, 1989.
8. Various other Municipalities Acts, etc.

Additionally, according to the Constitution of India, water supply and sanitation is a state subject, as enlisted under the twelfth schedule of the Constitution (Item 5 and 6 of the Twelfth Schedule under Article 243W – “5. Water supply for domestic, industrial and, commercial purposes and 6. Public health, sanitation conservancy and solid waste management”). The Constitution of India also provides for a framework that entrusts the Urban local bodies to provide water supply and sanitation facilities in urban areas.

The Water (Prevention and Control of Pollution) Act,

1974 prohibits the discharge of pollutants into water bodies. Section 3 and Section 4 of the said Act have also created Central as well State Pollution Control Boards (hereinafter referred to as the SPCBs) to prevent and control the pollution of various water bodies.

The Water (Prevention and Control of Pollution) Cess Act, 1977 has established a collection of cess on various industries and local authorities for water consumed by them.

The Environment (Protection) Act, 1986 is an umbrella act for environmental protection, which also covers the issue of water pollution. This Act, through a series of cases, decided by the Indian judiciary has led to the evolvement of various principles which are important for the environment. This includes the polluter pays principle, precautionary principle, the concept of sustainable development, the principle of absolute and strict liability, etc.

The CPCB is the principal authority in this regard. It sets the pollutant discharge standards which are to be mandated by the SPSCBs upon the local bodies and State governments.

Problems Associated

The problems associated with wastewater treatment are many. As discussed above, the growing urban population has over-burdened the water requirement in class I and class II cities. This, coupled with the lack of proper drainage and sewage network has increased the untreated wastewater significantly.

The existing STPs have at times proved to be ineffective as many of them are often found breaking laid down protocols and standards. The STPs do not meet the existing criteria for treating wastewater, which in turn has added to the problem of wastewater treatment. As highlighted

above, many STPs are non-operational. Even the operational STPs have been found with faulty mechanisms, leading to more problems. Only 23% of the treatment capacity in India actually meets the parameters laid down by pollution control boards.

Hence, this untreated wastewater lands up in our water bodies and ends up polluting water resources such as wells, underground water, rivers, and ultimately the ocean. Various High Courts have noted this problem time and again, with Allahabad High Court recently calling out the pollution in the river Ganga in Public Interest Litigation (PIL) No. 4003 of 2006 (order dated 28/01/ 2021).

Another problem associated is the lack of a separate legislation at the central as well as state level for treating wastewater. Even if the standards are made more comprehensive, the overall monitoring and enforcement of those standards by respective SPCBs cannot be achieved due to inadequate financial resources provided to them. Moreover, the SPCBs do not really act against the local bodies for not meeting the laid down standards, until an action is not taken against them.

Conclusion And Way Forward

There is a drastic need to meet the growing demands of this country since the population is rising at a rapid pace. Therefore, it is imperative to properly assess the waste generated by various Cities or States and make available proper and well-functioning STPs in those areas. As observed earlier, the existing infrastructure for treating wastewater is not sufficient. There should be a key focus on building proper infrastructure for the collection, transportation as well as treatment of domestic wastewater. Proper infrastructure should ideally include the creation of a proper sewage conveyance system including the construction of a well-charted sewage line, especially in individual households sewer connections.

Moreover, the government should focus on

strengthening the existing laws and consider implementing new ones, whose primary focus should be on wastewater treatment only. Proper funding to SPCBs should be provided by the respective state governments to meet the existing as well as growing demands. This will help in the proper implementation of the laid down standards, to better control the STPs, who do not meet their treatment capacity.

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PART THREE

GREEN COLUMN

Photographer: Rohit Guleria won the HPNLU virtual wildlife photography competition, 2021 and is a student at Awasthi College of Law, H.P.

CEDM

DENMARK AND INDIA'S GREEN GOALS- A REALITY OR A TRAVESTY

About the Author: Saumya Rajpal is a first year student at HPNLU and an environmental law enthusiast.

Among the recent slew of events, one of the most paramount has been the recent visit of the Danish Prime Minister Mette Frederikson to New Delhi where both the countries achieved an important breakthrough by stepping up their relations to a green strategic partnership. This comes at a time when India finds itself amid a myriad of problems – the Covid -19 pandemic aftermath, a dire coal crisis and an insurmountable pressure to declare a net zero emission goal to name a few. At the same time, the recent Memorandum of Understandings have given Indians an occasion to learn from their Nordic counterparts to inculcate the green vision and apply it to the recent urbanization drive happening at a full speed in the subcontinent, thereby accelerating green transition, leading to ecosystem restoration.

The contribution of Denmark to India's roadmap of development is not new. Denmark's contribution to the White Revolution by providing India with the necessary facilities for crossbreeding and the major developments to tap the wind sectors by mapping key off-shore sites is still remembered with great pride. The four Memorandum of Understanding signed relate to collaboration on mapping underground and aquifers, establishing a Centre for natural refrigerants in tropical climate, scientific research and skill development. Many people are eagerly waiting to see how India utilizes these skills and expertise to advance its green goals. This recent meeting brings into focus the green and sustainable practices adopted by Denmark and

how they can be adapted by India in both its developing and niche sectors to combat climate change, ensure sustainability and lay a roadmap for a greener future.

Rated as one of the greenest countries, Denmark for long has been an inspiration for the world when it comes to tapping wind energy that provides Denmark with around 47% of its energy as per the data released in 2019, while India's statistics still stand around 10% of the total energy produced. Incentivizing the wind sector for Danish companies to expand in India will not only help achieve its target of producing 450 GW of renewable energy but also help in enhancing its green goals for the future, utilizing the technology offered under the partnership. India and Denmark have also signed various MoUs covering sustainable urban development like the smart cities through Urban Labs situated in Goa. The city-to-city cooperation could prove to be a boon for a country expanding so fast on urbanization lines. These services will increase employment opportunities, facilitate influx of foreign advanced technologies and help build and advance cities on greener lines including better sewage treatment facilities, greener infrastructure and much more.

Denmark's exemplary success story of treating wastewater and sewage water to combat water scarcity can be adopted by India, keeping in mind those countless cities that face acute water shortage every day and the list that is expanding with every passing day. The Danish government's highly lauded effort to

include processes, such as nitrification and denitrification, can be very well adapted to the Indian waste management arena promoting ecosystem restoration. This step would further keep a check on untreated water that is discharged into the water bodies as well as ensure rectification of water scarcity through appropriate technologies. However, it has to be kept in mind that the government must make appropriate legislation and ensure its strict execution for greater efficiency in achieving the goal. Sewage treatment must be given prime importance considering that India has been offered the skill and experience of Denmark to ensure ecosystem restoration. Ecosystem restoration cannot be achieved until every sector of the economy is mobilized to move towards a greener phase and agriculture sector is a very critical quotient of this transition. The agro-sector of Denmark is known for bringing in many drastic climate solutions to its food production centre. Moreover, with the recent introduction of 35 new crop varieties with special traits by the Government of India, more radical developments can be made. India can also learn from the biogas production in Denmark where food is recycled to produce biogas, a non-renewable source of energy. This could prove to be a boon to reduce our dependence on coal especially domestic households where coal is still used indispensably by millions for everyday use. This transition from a coal-based environment to that based on renewable energy would accelerate ecosystem restoration. This comes into stark importance with the recent coal crisis that has ravaged the entire country. The various small scale biogas stations where food and other organic materials are used to produce energy, should be advanced by the government transforming them into a profitable and viable area of growth. This would help solve many issues ranging from unemployment problems, reducing our dependence on non-renewable source of energy to addressing the problem of food shortage.

The recent collaboration between India and Denmark where both the countries reaffirmed their earnest goals prioritizing climate change in itself is a humongous step towards our green journey. Prime Minister Modi correctly stated “Denmark has the skill while India has the scale”. It is now up to India whether it uses those skills or lets them go waste. The warning by climate activists must not be ignored. We humans have already devastated the very Earth on which we live but it is still not too late to bring about a drastic change. Partnerships like these must be seen as an opportunity to advance our green goals and come together to save the environment. They, at the same time, inspire us to do more in future so that developed countries can come forward and help developing countries combat climate change, increase their resilience and simultaneously help them grow greener so that our home planet does not become a ball of fire.

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GREEN RHYME

PART FOUR



Photographer: Divesh Kanga bagged third prize in HPNLU virtual wildlife photography competition, 2021 & is a third- year Law student at HPU, Shimla

CEDM

The Tale of Trevor and Astrid

About the Poet: Yuvraj Singh Walia is a first year student at Himachal Pradesh National Law University, Shimla

The poet has tried to portray the relationship of mankind with mother-nature through the imaginative love story of Trevor (mankind) and Astrid (mother-nature). The poem is written from the perspective of Astrid (mother-nature) who finds herself in a toxic relationship with Trevor (mankind). This poem begins from the ancient period when humans would respect, and in fact, worship nature. It then goes on to depict how toxic our relationship with nature has turned out and how nature seems to take its revenge from us through natural disasters taking place everywhere. Amidst all of this, however, there still lies acceptance and we still have the chance to make it up to the welcoming arms of mother-nature.

Remember when I was young back then?
In golden glory, that's when the story
Begins of love and beauty, and hurt and pain
As tender as the murmurs of rain
Across the bay where I'd lay
That's when I saw an inundation in the fog
That remains in my memory still, clogged
Our eyes met as the sun set
That's when you took a deep breath
There was salt in the air, rusty winds blowing
everywhere
You held my hand, and I felt the sand,
Underneath my feet getting cold,
that's when you told
You had been struck by my bold blue eyes
And we swayed in the incandescent glow of the
fireflies...
Now I feel low as the polluted gales blow
Watching the wrathful inferno
Blazing my land and cursing my hand
The hand that was once earned
Is now being stabbed, crucified and burned
All I see is vermilion in the ocean waters
That once would promise to raise our daughters
Standing on the cliffside, now I shout
Pleading my death to leave me out
Wondering where the man I knew went
Leaving behind this colossal dent
Through the solemn silence of the night
Through the glistening glow of daylight

Was I a fool to have nurtured your life?
Now you stab me with a deadly knife
My eyes pain as it leaks acid rain
The flowers that once bloomed now seem doomed,
Doomed to die just like you and I
I keep awake with my painfully pounding heart-
ache
"No, it's not time to die yet"
Is what I tell myself before going to bed
I have been plundered, abused and exploited
Now it's time I rioted
Within me I feel the explosion of scorching ashes
Now my volcanoes erupt malevolent gasses
The riptides in the seas that were at its best
Rise and lead you to a dreadful tempest
The coolness my greenery used to bring to you
My lake like arteries where your love used to canoe
Now that all is gone, I see you repent
Down, on your knees bent
I laugh wickedly as I see your power burn
"Oh, look how the tables have turned!"
"It's not my fault", that's what I say
You should have not rubbed me the wrong way
There is still time for you to awaken
Before all that you have gets taken
Your life, your pride, and the shame you hide
As you regret and mourn your deeds on the inside
I still care for you, I will be there for you
There still is salvation, all it needs is some
restoration

Show me the love that was there before
When you waited for my gentle touch at your door
Give me the man that would hold me close,
Kneel and pull out a red rose
Try to change that plastic heart
And we will be off to a new start
A new life, a new phase
A new beginning of sun filled days
Let me hear our love roar
Get mended again and through new heights, soar
All I can wish is for you to listen, Trevor
Let my mountains and glaciers glisten forever
Wrap me in your arms and hold me tight
“Oh honey! What a beautiful sight”
We softly kiss under the aurora’s bliss
I hope it comes true, all my whims and fancies
Just like these gorgeous purple pansies
I yearn someday to have your kid
Yours beloved,
Astrid

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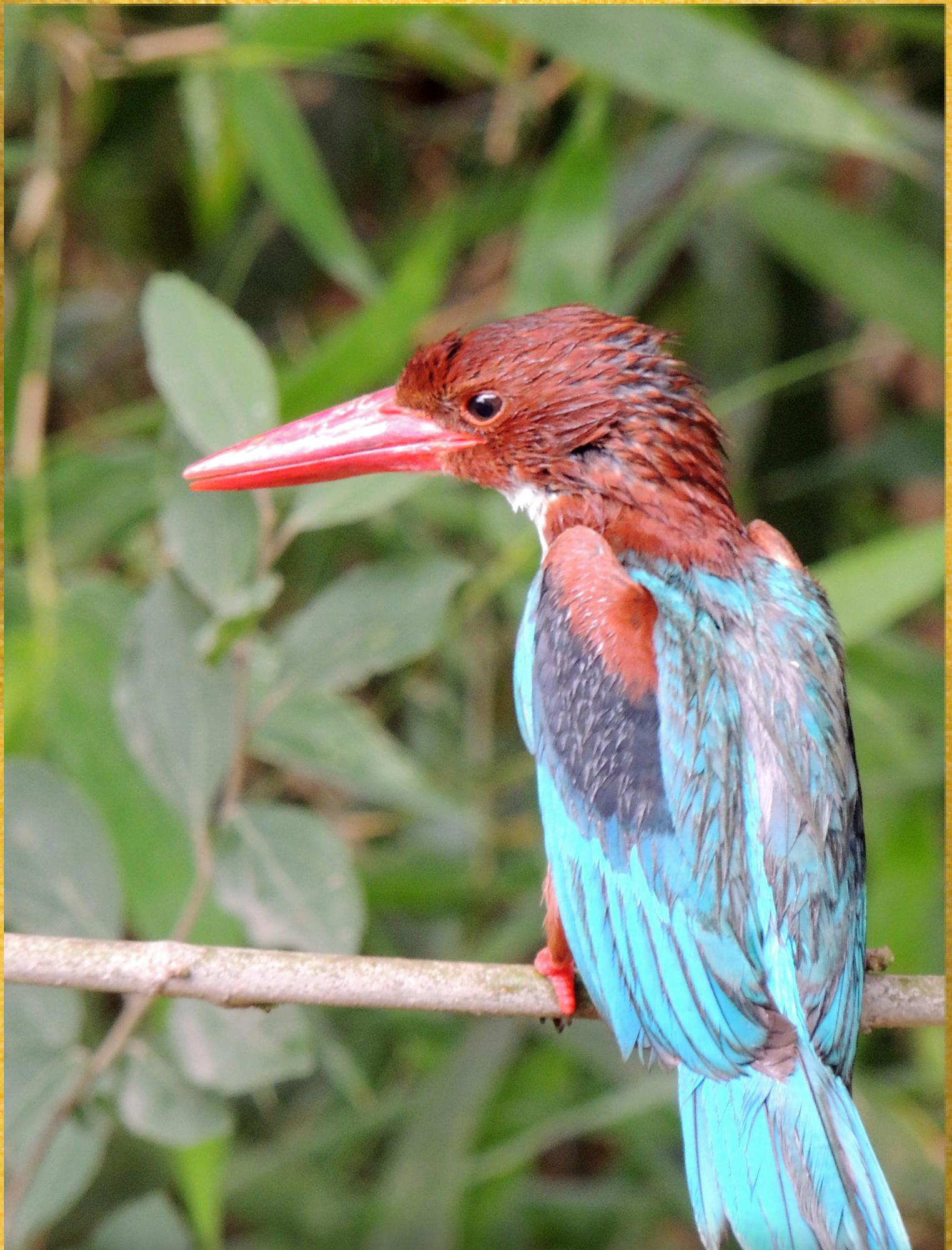
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Front Page Photograph Credits: Rohit Guleria, won the HPNLU virtual wildlife photography competition, 2021 & a second-year Law student at Awasthi College of Law Nalagarh, Himanchal Pradesh

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Photographer: Divesh Kanga is a third- year Law student at HPU, Shimla

CEDM