



Protecting the Environment through Sustainable Development Goals (SDG)

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ABSTRACT

Global environmental change is an old phenomenon running simultaneously with the origin of the Earth. Since variations on this planet is an outcome of continuous and still going evolutionary changes, incorporating various mysterious biological, physical as well as a chemical phenomenon. The outcome and the additive effect of these changes are steady and bring about the change in the environment on the daily basis. The conditions which as a sum are responsible for this outcome of environmental change are particularly very difficult to ascertain and observe under normal laboratory conditions. Any considered factor which brings about the environmental change work entirely different under normal conditions as there are chances of its getting associated with various other environmental factors simultaneously. At present, the researches carried out throughout the globe have pointed out anthropogenic activities to be a major contributor in bringing about environmental degradation and thus change. Some of these human activities include industrialization, urbanization, stratospheric ozone depletion, deforestation, loss of biodiversity, acidification, pollution, and desertification, etc. Even though this global environmental degradation is an outcome of activities initiated and looked upon by only a few human masses, still the outcome effects are sometimes deleterious instantly or perhaps sub-chronic also to entirely all the masses surviving on this planet including the plants and other animals. To save life on this planet, it is extremely urgent and important that the anthropogenic factors affecting the environment adversely be checked and restricted at the global level. This work provides an insight into various efforts brought about to check the environmental degradation through anthropogenic activities and what is left to be done preliminary.

Keywords: Environment, change, ecosystem, destruction, sustainable development goals (SDGs)

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1. INTRODUCTION

A sudden and rapid increase in human population and related anthropogenic activities has been presently considered to be a major contributor to environmental degradation. It is however a complicated phenomenon, working in a multistep and interrelated manner, hard to ascertain and restrict under natural conditions. Whatsoever the case may be, environmental degradation ultimately is associated with the destruction and depletion of natural resources at more or less level. Environmental degradation is not a choice-based objective every time, but an outcome of certain constraints which can be financial poverty, requirements for technological progression, or advancements in one form or another (Bakhrir, *et al.*, 2018; Inchulkar Shrikant, *et al.*, 2019; Jamal, *et al.*, 2018; Maroufan, *et al.*, 2019). But the harassment of natural environmental resources beyond certain levels can bring about their depletion. Some of the common resources which are easily and simultaneously being affected this way include soil, water, and air.

Environmental degradation is an outcome of various socio-economical, technological, and institutional activities. Degradation occurs when the earth's natural resources are depleted. In this process, the resources which are affected

include water, air, and soil. Environmental is a very complex framework, incorporated and linked with many organisms and thus ecosystems, having wildlife, plants, animals, and microbiota origin and level. Whenever something important is extracted from the environment at a very higher level or something very harmful such as chemicals are added, it shows or initiates a high level of environmental degradation and enhanced death rate and diseases in inhabitants of such environment (Arora and Mishra, 2019; Elder and Olsem, 2019; Guleria *et al.*, 2019).

The factory effluents mainly include some toxic chemicals and metals as well as their associated harmful compounds, which are indiscriminately discharged into the air, land, and water bodies. All this brings about a variety of adverse consequences to all living forms. Pesticides and fertilizers can find a way into the surrounding water system and pollute it. Such unhealthy practices can affect people by causing illnesses, death in children, and adults. Dumping of domestic and industrial waste as well as the discharge of toxic chemicals anyhow into the aquatic ecosystem ultimately leads to disturbances in the physiology of all most all the animals residing there such as fishes, crustaceans, echinoderms, poriferans as well as the so-called beauties of seas the coral reefs. These discharges are easy to maintain and release in the aquatic ecosystem, but indeed cause effects that can never be reversed. The pace with which such events are taking place is very fast and continuing this coming generation will be in danger (Bhushan *et al.*, 2013;

Pande *et al.*, 2014, Saxena *et al.*, 2020).

Overuse of natural resources can lead to their irreversible depletion, having a variety of fates such as high volume/space ratio, extinction, etc. Transformation of natural resources into metabolically harmful compounds and their discharge in the open and assessable environment is a precursor of pollution, which can also have the same effects on living forms on this planet (*vide supra*) (Kasperson, 2001; Klarin, 2018; Shrinkhal, 2019).

Water and soil pollution are amongst some of the common forms of pollution and its outcome includes, acid rain, contamination of various ecological chains, and bio-magnification. Water and air are the basic life-supporting compositions available and required, so any alteration in their level is considered to be very dangerous and alarming. If unchecked and eradicated the pollution in air and water is capable of sudden and emergent distraction in the normal body functions of the animals, such as Minimata disease, or even kill the living organisms of the concerned area. Acid rain occurs when sulphur dioxide from coal plant emissions combines with moisture present in the air.

Acids rains at a high level are capable of acidifying the water, soil, and overall environment of the given area, ultimately killing life forms there and making the affected place unfit for growth of many of the living forms (Bhushan *et al.*, 2013; Gellers and Cheatham, 2019; Guleria *et al.*, 2020).

Agricultural runoff is a major source of pollutants that can degrade environments. As presently various pesticides are being used indiscriminately by the farmers in developing and underdeveloped nations, as agriculture is still the mainstay of economy maintenance in such nations, so high are the chances of water pollution there. Surface water washes over the soil and thereby the toxic chemicals present on their surface into lakes and streams. Introducing poisons into waterways will have dire consequences, as it is very hard to ascertain the effects, and naturally, one biochemical reaction may bring about series of reactions, some of which can be very dangerous. Fertilizers, whether or not they are organic, carry equal risks. Whenever the phosphorus is leached out from the fertilizers and mostly through rainwater enters the nearby water bodies it is having an array of consequences starting from the algal destruction first, leading to altered microbiota of the concerned water body. Soon a condition is reached where the oxygen content of the water body is mostly used by microbiota and as a result, other living forms of that aquatic ecosystem disappears due to acidification of water and decrease in dissolved oxygen level (Arora and Mishra, 2019; Bhushan *et al.*, 2013; Khoshnava *et al.*, 2019; Pande *et al.*, 2014; Proctor, 2001; Shi *et al.*, 2019).

It is a very common and realized fact that our environment is constantly changing. However, the change is both human dependent and human absence dependent. At some places such as metro cities, the anthropogenic activity is so disturbing that becoming a clear cause of environmental and ecological destruction. Whereas, at other places, such as deep forests, the absence of anthropogenic is becoming a cause of the destruction of natural ecosystems as a consequence of calamities such as earthquakes, wildfires, etc. (Choudhary *et al.*, 2015; Elder and Oslem, 2019; Mensah, 2019; Saxena *et al.*, 2020).

Based on such observations (*vide supra*), and to make this

planet fit again for survival of various life forms here, the Sustainable Development Goals (SDGs; also called Global Goals), have been framed with a global common oneness among founder countries. It is supposed that mankind will again be able to make this planet prosperous and safe for all humankind and other life forms. The set of goals considered in SDGs were accepted in 2015, for were proposed to be followed for 2016-30. (Bangay, 2016, Morton *et al.*, 2017).

There are seventeen sustainable development goals, which are so thoroughly studied before framing that are such planed interrelated that change in one will surely bring about change in another parameter under observation and consideration. They are so planned to increase the socio-economical level of citizens and also saving the environment. The goals incorporate saving citizens against deleterious diseases such as AIDS, women empowerment, generating renewable energy sources, increasing creativity, eco-friendly industries, etc. (Klarin, 2018; Shi *et al.*, 2019; Shrinkhal, 2019).

2. BACKGROUND

From time to time various awareness campaigns have been undertaken throughout the globe, aimed to minimize human-induced environmental degradation. Various other natural disasters concerned with environmental degradation are exclusively studied and discussed. Plans have been made and tried upon in routine to minimize the manmade damage to the environment. Some of the important events are discussed herein:

Kyoto protocol

The Kyoto Protocol, an agreement made by many countries numbering about 192 under the United Nations Framework Convention, is expected to work from 11 December 1997 onwards. Unfortunately, this project faced many obstacles and it was 16 February 2005, when it came into force.

Kyoto protocol is aimed to set some criteria related to industrialization. In other words, we can simplify it as; various countries throughout the world are in a haze of industrialization, but unfortunately, the beginners and the workers, as well as users, are not much aware of their ill effects. Many times, the standard norms are sometimes not much taken into consideration, failing which the level of toxic materials including the harmful greenhouse gases has been dramatically increased in the recent past. Moreover, we all are also becoming more aware day by day that the damage once caused to the environment can be irreversible or still will take many years to get normalized if reversible. The Kyoto protocol therefore has been framed at the light to reduce greenhouse gas emissions. The emission of this gas at a large level is associated with global climate change and thereby damage various ecosystems. This protocol binds particularly the developed nations to reduce the emission levels of greenhouse gasses and thus save the planet and life on it (Bangay, 2016; Khoshnava *et al.*, 2019; Klarin, 2018).

Doha Amendment

This agreement came was finalized on 8th December 2012. The place where this agreement was finalized was Dohar, Qatar, hence the name of this agreement.

This agreement was an amendment to the then functional

Kyoto Protocol and expected to work for a period of nearly 18 years i.e. from 2013 to 2020.

However, unfortunately, the Doha amendment has not been broadly functional as it requires some rectifications and common opinions to be accepted. Working on the line, the main body, in this case, the Secretary-General of the United Nations; framed amendments necessary at the moment taking Articles 20 and 21 of this amendment into consideration. These amendments and the outcome were circulated to the fellow members.

Briefly, this amendment includes:

- For parties/states that have already joined the Kyoto Protocol were expected to agree upon the new commitments contained in the second amendment for a period starting from 01-01-2013 to 31-12-2020.
- Member parties were expected to submit a revised list of greenhouse gases (GHG) in the second commitment period.
- Amendments to be made in the specific articles of the Kyoto Protocol with issues during the first commitment period and updating them for the upcoming second commitment period.

During the first commitment period, industrialized countries, and the European Community committed to reduce GHG emissions to an average of 05 percent whereas 18 percent against 1990 levels in the second amendment (Arora and Mishra, 2019; Elder and Oslam, 2019; Kaspersen, 2001).

Montreal protocol

This protocol was mainly concerned with the danger of ozone layer depletion. The brief background of this protocol was the emission of harmful gases and other toxic substances responsible for damaging the ozone layer present in the stratosphere about 15-30kms above the earth's surface. This layer is very important to resist the harmful UV rays entering the surface of the earth. In this protocol which was signed on 16-09-1987, the emphasis was being given to saving the ozone layer. This layer could only be saved by lowering greenhouse gas emissions.

The Montreal Protocol entered into force on 1 January 1989. Till its date of existence, this protocol has been amended nine times till now and the amendments are as follows: 1990 (London), 1991 (Nairobi), 1992 (Copenhagen), 1993 (Bangkok), 1995 (Vienna), 1997 (Montreal), 1998 (Australia), 1999 (Beijing) and 2016 (Kigali).

This effort has been found fruitful till now and damage to the ozone layer has been decreased in terms of its pace. It is further estimated that a comparatively safer condition of the ozone layer will be achieved up to 2070 (Klarin, 2018; Menah, 2019).

Rio 20

The event was named as it was organized in Rio de Janeiro, Brazil from 20-22 June 2012. The outcome of the event was the basis for clear and effective initiatives for sustainable development. At the summit, member states decided to formally form the Sustainable Development Goals (SDGs). Such goals will align with the development agenda envisaged before 2015 and thus ultimately contribute to achieving the

Millennium Development Goals. The Summit also adopted guidelines for violations of green economic policies. Governments have also decided to establish a system of government under the National Council to devise alternatives to the Sustainable Development Fund.

Governments have also agreed to strengthen the UN Environment Program (UNEP) in several areas through the steps to be taken at the 67th session of the National Assembly. They also agreed to establish a high-level political platform for sustainable development. The governments of the member states, states, and other relevant organizations have also requested the United Nations Commission on the Implementation of the Action Plan in the area of progress towards completing more domestic production to better educate policy decisions.

Many areas such as energy, food security, seas, cities, etc. were discussed at that meeting, and it was decided to call the third international conference on SIDS in 2014. It led to more than 700 voluntary commitments and saw the construction of new relationships move forward with sustainable development (Shi et al., 2019; Shrinkhal et al., 2019).

Earth submit 1992

It has many names such as the United Nations Conference on Environment and Development (UNCED), the Rio de Janeiro Earth Summit, the Rio Summit, and the Rio Conference.

It was a major United Nations conference held in Rio de Janeiro from June 3-14, 1992, in response to the post-Cold War crisis, and member states were urged to work together for global recognition. As such, the sustainability challenges are enormous and one member state cannot handle it on its own. Therefore, the Earth Summit was held as a platform that expected all member states to work together on this issue. Many other agencies including non-governmental organizations (NGOs) have similar ideas, that is, in sustainability, they have shown the same approach to these problems. The issues discussed mainly involve four factors: first, the systematic review of production patterns — particularly the production of toxic substances, such as lead in fuel, or toxic waste including radioactive chemicals.

Second, other energy sources that will replace the use of mineral oil where delegates are linked to global climate change. The third is to rely on public transport systems to reduce traffic congestion, urban congestion, and health problems caused by air pollution and smoke. Fourth is the increased use and limited supply of water.

A key achievement of the summit was the climate change agreement that led to the Kyoto Protocol and the Paris Agreement. Another agreement was that “we should not do anything on the lands of indigenous peoples that could cause environmental degradation or culturally unethical” (Gullers and Satan, 2019; Morton et al., 2017).

The World Summit led to the following documents: Rio Declaration on Environment and Development, Agenda 21, Forest Principles. Also, key legal obligations (Rio Convention) were opened for signing: Biodiversity Convention, Framework Convention on Climate Change (UNFCCC), United Nations Convention to Combat Desertification.

To ensure compliance with Rio's commitments (in particular the Rio Declaration on Environment and Development and Agenda 21), delegates to the World Summit established the

Sustainable Development Commission (CSD). In 2013, the CSD was replaced by the Supreme Political Sustainable Development Forum which meets annually as part of ECOSOC meetings, and every fourth year as part of general assembly meetings (Kasperson, 2001; Mensah, 2019; Morton *et al.*, 2017).

3. ANALYTICAL DISCUSSION

Global environmental commons (biodiversity, land, atmosphere, and oceans) are intrinsically linked, and they ignore national frontiers. Access to the global environmental commons is essential for all. Exceptionally, sometimes and at some places these environmental resources are being depleted and degraded, and the impact is felt throughout the world. Thus, there is a great and urgent need to frame some rules for natural resources, their extraction from global commons, and management of the resulting waste material. Further, efforts must be undertaken to save and boost up the Earth's recovery system. To save it (Earth's recovery system), one must think and try to extract the natural resources for its use only rather than for a bulk commercial purpose. The management of global commons must explicitly address environmental injustice, avoiding unequal use of resources and repairing the damage already caused, through a combination of technical, financial, and political interventions (Arora and Mishra, 2019; Choudhary *et al.*, 2016; Gellers and Cheatham, 2019; Morton *et al.*, 2012).

Transnational agreements are keys to the protection of the commons, and adaptive governance involving a wide range of institutions and stakeholders can help ensure their sustainable management. Science diplomacy can further strengthen the protection of global commons and help establish partnerships for solving conflicts and for the sustainable management of commons. According to international law, global commons refers to four specific areas that fall outside of any national jurisdiction: the high seas, the atmosphere, Antarctica, and outer space.

Overexploitation of the global environmental commons, coupled with emissions of harmful polluting substances, radiation, waste, and overuse of hazardous chemicals, is leading to potentially irreversible changes and putting the Earth system's stability at risk. Our actual demands on the global environmental commons have become so great that they are influencing the Earth system as a whole.

Achieving the Sustainable Development Goals requires that we have to reduce the pressure on those commons. At present, economic development is leading to an even larger environmental footprint – a trend that must be reversed if we are to secure human well-being and support sustainable economies and businesses without subjecting the global commons to the mass extinction of species, deforestation, land degradation, and unmanageable amounts of waste dumped and emitted. Wastes generated by human activities, including hazardous chemicals, plastics, and e-waste, have reached levels beyond the Earth system's absorption capacity. Hence, there is an urgent need to decarbonize human activities, manage how resources are extracted from the commons, how efficiently they are used, how they are distributed, and how waste is managed (Mensah, 2019; Proctor, 2001).

The broad diversity among living species of organisms inhabiting all the habitats plays a key role in ecosystem maintenance and there provides a wide range of services. At present, about 33% of all the available land globally is used for agricultural practices. It has been analyzed globally that from 1998 to 2013, 20% of the Earth's total vegetated land surface showed declining productivity. Presently, 30.7% of the land area has been covered by forests. It is also estimated that within the coming few decades, about 25% i.e. nearly 1 million species of animals and plants will get extinct if present conditions continue. At present, 75% of our crops are at risk, due to the loss of pollinators probably through the enhanced use of chemicals in agriculture and domestic purposes as well as agricultural expansion. Air pollution is presently estimated to kill approximately 8 million people per year. The livelihoods of 60 million people depend on ocean resources, among which 8 million people die annually due to present toxic conditions. 50% of all coral reefs have been lost since 1870 (Bhushan *et al.*, 2013; Gellers and Cheatham, 2019; Saxena *et al.*, 2020).

It has therefore become the demand of the day to take appropriate action to reduce the intensity of drivers of biodiversity loss. Ignoring such things and failing to take appropriate action at the right time will increase the rate of extinction, which is already at least tens to hundreds of times more than the estimated ten million years ago. Around the world, species and endemic species of plants and animals are disappearing.

Such loss of diversity, including genetic diversity, poses a serious threat to global food security by undermining the viability of many agricultural systems in the face of threats such as pests, viruses, and climate change. Climate change, air pollution, ozone depletion, and chronic biological pollution are four major challenges affecting the atmosphere, and they have significant and far-reaching effects on marine and terrestrial ecosystems. Climate change due to human activity disrupts the support, regulation, and provision of services of ecosystems while increasing the intensity of hazards such as extreme heat, intense rainfall, floods, landslides, sea-level rise, and drought.

Infections and diseases may emerge and spread faster with climate change, especially when coupled with human mobility. Least developed countries and Small Island Developing States in tropical areas are likely to feel irreversible consequences of climate change before other countries, and they have less capacity to prepare and respond.

Air pollution presents one of the highest health risks globally, especially in fast-growing cities in developing countries. It has been estimated that 91 percent of the world population breathes air that exceeds the WHO issued pollution guidelines. Low- and middle-income countries are home to more than 90 percent of deaths attributed to air pollution. In cities in cold regions, where energy for heating is in high demand, special attention should be given to fumes from inefficient stoves, particularly in cities in valleys, where reversed temperatures keep the contaminated air trapped above urban dwellers. In developing countries, black carbon produced by incomplete combustion of fossil fuels and biomass has increased along with the human exploitation of forest resources. The ocean needs urgent protection to maintain its pivotal role in providing regulating and provisioning services which, in turn,

support most other Sustainable Development Goals (Guleria *et al.*, 2019; Kasperson, 2001; Khosnava *et al.*, 2019).

Securing the oceans can feed and provide livelihoods for people while maintaining habitats, protecting its biodiversity and coastal areas, and regulating climate change. The ocean performs an important temperature and precipitation regulating function, and it is also a carbon sink that has absorbed some 40 percent of the total CO₂ emitted since preindustrial times. Projected changes in the ocean are, therefore, expected to create impacts in the Earth system that will lead to greater global warming. Warming, coupled with ocean acidification due to carbon uptake, creates a double challenge for coral reefs, by reducing their growth, causing increased bleaching, and decreasing their storm-protective function. The destruction of coral reefs affects oceans' biodiversity because they serve as habitats for 25 percent of oceanic species. Oceans receive an ever-growing amount of land-based garbage, sewage, plastic debris, anthropogenic nanoparticles, fertilizers, hazardous chemicals, and oil spills as a result of hazardous technologies. That endangers marine and biodiversity, contaminates food chains, poses a threat to the human immune system, reduces fertility, and increases the risk of cancer. Plastic waste makes up 60 to 80 percent of the sewage and accumulates at high density (200,000 pieces per square mile) in the ocean. Drought and water shortages are considered the longest arrival in all-natural disasters, resulting in short-term and long-term economic and environmental losses.

Dealing with landslides above the river improves access to water in the lower reaches. Rehabilitation raises groundwater levels, increases crop yields, and creates positive changes in the fauna of the affected area. The vulnerability of climate change is strangely linked to sustainable development. That is especially true of some 900 million people living in the mountainous regions of the world, who are among the most vulnerable to climate change. Those people have high levels of poverty, and, in developing countries, about 40 percent suffer from food insecurity. If they are to have a sustainable future and deal with climate change, they will need greater energy and resilience.

That requires a focus on the context of the mountains in implementing the steps and in reviewing the progress towards the 2030 Agenda (Gellers and Cheatham, 2019; Pavoni and Piselli, 2016). Intelligent land management practices, including, for example, low-carbon agriculture, agriculture, and high-carbon-rich ecosystems, such as forests and host countries, almost always bring with it the benefits of adaptability. The world's forests have been disappearing at an alarming rate. Less than 1.3 million square miles of the forest has been lost since 1990, mainly in tropical areas (Latin America, sub-Saharan Africa, and Southeast Asia), the size of South Africa. Those forests are cleared for agriculture, access to resources, urbanization, and other reasons. In particular, the two major rainforests, the Amazon rainforest in Latin America and the forests of Central Africa, are key to global environmental health, as they contribute to climate change with their important role such as carbon dioxide and conservation, affecting climate patterns in both areas. Their destiny is important to everyone, not just modern citizens.

According to official 2018 data, the deforestation of the Amazon rainforest in Brazil has reached the highest level in a

decade. Except for national authorities Natural resources, which include a stock of renewable and unavailable resources and often referred to as "ecosystem services", are often excluded from normal economic activities, especially because they were widely thought to be easily taken for granted. That is no longer the case. A global example of that kind of environmental injustice is climate change. Most of the CO₂ in the atmosphere 99 Transformations has been released by the industrialized countries and the richest 10 percent of people in the world are responsible for around half of the global emissions. Meanwhile, those who have released far less are most exposed. Developing countries and specific groups of countries such as Small Island developing States, mountain communities, and Arctic communities now have to endure storms, sea-level rise, ice withdrawal, and other extreme climate hazards. Moreover, many tropical countries will endure earlier ecosystem transitions and the dramatic effects of climate hazards than industrialized countries. That imbalance is reflected in climate negotiations and claims for financial and technological support from advanced economies to the most vulnerable countries. One such mechanism supporting vulnerable countries is the Green Climate Fund, which seeks to ensure a balanced allocation of funds to adaptation and mitigation projects, as well as ensuring that developing countries access funds directly for better integration in their climate national action plan (Kasperson, 2001; Khosnava *et al.*, 2019).

Allocation of funds to complete the assignment has been at times challenging, although to date those requirements seem to be fulfilled. Multilateral agreements and platforms, such as the United Nations Framework Convention on Climate Change, the Convention on Biological Diversity, and the United Nations Convention to Combat Desertification, or the Strategic Approach to International Chemicals Management are mechanisms to protect the global commons and guarantee their global sustainable management. Importantly, each is supported by a formal scientific advisory body, the Intergovernmental Panel on Climate Change, the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services, and the Committee on Science and Technology of the Convention. That suggests that science diplomacy can improve the management of global commons and support partnerships to manage commons in conflicting contexts. Governments are also being informed by science as they continue to work for the conservation of the Global Sustainable Development Report 2019 and the sustainable use of marine biodiversity in areas of globalization. Indeed, the goals of Sustainable Development itself help directly to control external factors that feel beyond capacity and scales. However, ensuring the sustainability of global commons is not just a matter of global governance; a plethora of actions at all scales, from global to local, and involvement of the most directly affected communities is also important. The global chemical sector is expected to almost double between 2015 and 2030. Numerous new chemicals will enter the market, adding to the estimated 100,000 chemicals already in production. Chemicals offer significant social, economic, and environmental benefits, but many pose serious threats to human health and the environment, thus requiring sound management at all levels. Apart from existing legally binding multilateral environmental agreements, the strategic approach to International Chemicals

Management offers a voluntary, multi-stakeholder, and multisectoral platform for collaborative decision-making, open discussion, and information exchange. The Approach supports the achievement of the “2020 goal” on chemicals management agreed at the 2002 Johannesburg World Summit on Sustainable Development. The 2020 goal calls for the minimization of significant adverse effects on human health and the environment, but with a rapidly evolving and growing chemicals and waste sector, it is becoming obvious that the 2020 goal will not be achieved. A future policy framework on sound management of chemicals and waste beyond 2020, bringing together all relevant sectors, raising ambitions, and strengthening policies are needed. An inter-sessional process on the approach is underway to work out the framework by the end of 2020. Whatever a future global approach or framework might entail, the chemicals sector must transition towards sustainability, including through enhanced resource efficiency, fostering innovation in materials, and considering the whole life cycle of chemicals. Mutual adjustments and adaptive governance – Coordinating the interplay among initiatives requires multi-stakeholder platforms, regulated market mechanisms, and established legislative boundaries among governance actors, providers, and users of the global commons. Decision-makers can adopt a range of strategies and governance approaches to enable social learning or learning new behavior patterns by observing and imitating others. Some of the most effective action is at the local level in self-

organizing, community-based initiatives, particularly for transforming the use of global sinks or resources. But collective action at any scale depends upon building trust. In polycentric governance systems, rather than using top-down legislative action, relations can instead be ordered through soft inducement, deliberation about collective goals or reputational incentives, and self-organized networks (Bangay, 2016; Elder and Olsem, 2019).

Case studies in our locality:

No doubt, the Indian Government has taken several steps to restrict environmental degradation, a few are discussed here:

1. Dustbins:

Dustbins have been installed at many prime locations, both in the villages and cities to decrease the spread of waste material (Fig. 1). These dustbins also restrict the exposure level of waste to the normal public. This effort of the Government will help to decrease the spread of communicable diseases among the masses, decrease water pollution (as sometimes waste materials are indiscriminately put into the water bodies, thereby making them polluted. Moreover, the use of these dustbins will also save animals who sometimes take the polyethylene along with the foodstuff thrown here and there



Fig. 1: Dustbins situated to store the domestic waste which can then after be degraded properly

2. Pong dam:

Himachal Pradesh Government has restricted agricultural activities near the Pong Dam. Due to such activities, agricultural wastes as well as the toxicants used normally in the agricultural practices were being added to this water body. Such continuous addition may pose serious

effects to the normal fauna and flora of the Pong dam. Also, the continuous additions of such toxins must have resulted in abrupt bio-magnification. Further, Pong Dam is the favorite spot of the migratory Siberian cranes, which are also at a threat of life under the conditions if agricultural activities were not stopped (Fig. 2).



Fig. 2: A view of the Pong dam

4. CONCLUSIONS

Environmental degradation has become a “common concern” to humans over the past few decades. A distinct feature of current environmental problems is that they are more likely to be caused by anthropogenic than natural ones.

Unscrupulous consumer spending and economic growth have begun to show negative effects on Mother Nature. Without this, the pace and the desire for economic development have never ceased. It is an economy that has called for environmental policy. Emphasis is now placed on the role of science and technology in this process, sustainable development has become the talk of the town.

Environmental degradation is now one of the most pressing issues facing the environment. Depending on the damage, some areas may not recover. The flora and fauna of these areas will be permanently lost. To minimize any impending impacts, city planners, industry, and resource managers must consider the long-term effects of environmental development.

With sound planning, public awareness, and public participation, future corruption can be prevented.

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