



Global Environmental Concerns: An Analysis of Triumvirate of Planetary Crisis

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Abstract: Today, the planet earth is facing triple crisis: climate change, biodiversity loss and pollution. These interlinked challenges are threatening the well-being and survival of millions of species around the world and jeopardizing the Sustainable Development Goals (SDGs). Each of these crisis has its own causes and effects and each issue needs to be resolved if we are to have a viable future on this planet. This paper analyses the causes and effects of all these interlinked issues. The paper also reviews the efforts taken by UN and world community to tackle the triple planetary crisis. Finally, some measures are suggested to handle the crisis effectively.

Keywords: Triple Planetary Crisis, Stockholm Conference, Climate Change, Biodiversity Loss, Pollution

1. Introduction

The Stockholm Conference of 1972 brought the issue of environmental degradation at international political agenda. This event raised the global concerns on the issue of environment, and succeeded in increasing public awareness on the fragility of the environment. The post-conference period witnessed a boom in governmental and non-governmental organisations involved in environmental protection. Before Stockholm, hardly any developing country government had an environmental department, but by 1980, around a hundred countries joined the wagon. Stockholm also led to the creation of the United Nations Environment Programme (UNEP), which facilitated agreements on a number of environmental issues. Yet, despite all this, the environment declined significantly (Rajan, 1994). Several reasons are responsible for this. However, rapid blind race for more and more development is the main culprit, which converted the nature into a slave of man. Consequently, earth surface went changed beyond recognition. Nowadays, the world's population is facing severe problems like of air pollution, ozone layer depletion, acid rain, greenhouse effect, soil pollution, pollution of the world's oceans and overpopulation.

2. Triumvirate of Planetary Crisis

Currently, Humanity is facing an existential threat. The interlinked and devastating effects of climate change, biodiversity loss and pollution (Triumvirate of Planetary Crisis) are causing the threat to the humanity. The Planetary Crisis refers to the three main interlinked issues that humanity currently faces: climate change, pollution and biodiversity loss. Each of these issues has its own causes and effects and each issue needs to be resolved if we are to have a rationally sustainable future on this planet. These environmental challenges interact in ways that multiply risk and losses, and if coordinated action is not taken, it will be difficult to realize the global 2030 Agenda.

2.1. Climate Change

Climate change is a term used to describe long-term changes in weather patterns and temperatures. It is the greatest global health threat facing the world in the 21st century. So far, there have been five major mass extinction events on Earth, and they all have been linked to climate change. In addition, we are currently amidst the sixth major mass extinction event. We have become the most influential species on Earth in respect to how we affect global warming, ecosystems, and our surrounding environments.

In recent years, the issue of climate change has grabbed the attention of the world community. However, the Earth's climate is always changing but in the last hundred years, it has changed drastically. Even after the attention and efforts of the world community, the issue of global warming and climate change is getting more and more complex. Increase in the atmospheric concentration of greenhouse gases cause Earth to warm by trapping more heat. Human activities, especially the burning of fossil fuels since the start of the Industrial Revolution, have increased atmospheric CO₂ concentration by more than 40%, with over half the increase occurring since 1970. Since 1900, the global average surface temperature has increased by about 1 °C (1.8 °F). No corner of the globe is immune from the devastating consequences of climate change. Rising temperature is fuelling environmental degradation, natural disasters, weather extremes, food and water insecurity and economic disruption. Sea levels are rising, the Arctic is melting, coral reefs are dying, oceans are acidifying, and forests are burning. Glaciers and ice sheets in polar and mountain regions are already melting faster than ever, causing sea levels to rise. Almost two-thirds of the world's cities with populations of over five million are located in areas at risk of sea level rise and almost 40 per cent of the world's population live within 100 km of a coast. If no action is taken, entire districts of New York, Shanghai, Abu Dhabi, Osaka, Rio de Janeiro, and many other cities could find themselves underwater within our lifetimes, displacing millions of people.

Much of this rise in warming has occurred in the last five decades. Detailed analyses have shown that the warming during this period is mainly a result of the increased concentration of CO₂ and other greenhouse gases. Continued emissions of these gases will cause further climate change, including substantial increases in global average surface temperature and important changes in regional climate. The expansion and timing of these changes will depend on many factors. However, long-term climate change over many decades will depend mainly on the total amount of CO₂ and other greenhouse gases emitted because of human activities.

Billions of tons of CO₂ are released into the atmosphere every year because of coal, oil, and gas production. Human activity is producing greenhouse gas emissions at a record high with no signs of slowing down. The last four years were the four hottest on record. According to a September 2019 World Meteorological Organization (WMO) report, we are at least one degree Celsius above preindustrial levels and close to what scientists warn would be "an unacceptable risk". The 2015 Paris Agreement on climate change calls for holding eventual warming "well below" two degrees Celsius, and for the pursuit of efforts to limit the increase even further, to 1.5 degrees. But if we don't slow global emissions, temperatures could rise to above three degrees Celsius by 2100, causing further irreversible damage to our ecosystems.

2.2. Biodiversity Loss

Biodiversity can be defined as the variety of living species on Earth, including plants, animals, bacteria, and fungi. Climate change and biodiversity loss are interlinked. Through long-term changes in temperature and rain, increasingly common natural disasters, and negative anthropogenic contributions, climate change adversely affects biodiversity. In return, loss of biodiversity negatively affects the Earth's capacity to maintain normal levels of greenhouse gases, thereby worsening climate change.

Biodiversity loss refers to the decline or disappearance of biological diversity, which includes life on Earth, in all its forms, from genes and bacteria to entire ecosystems such as forests or coral reefs. The biodiversity we see today is the result of 4.5 billion years of evolution, increasingly influenced by humans. Biodiversity forms the very basis of life that we depend on for so many things like– food, water, medicine, a stable climate and economic growth etc.. Over half of global GDP is dependent on nature. More than 1 billion people rely on forests for their livelihoods.

However, use of land by humans, primarily for food production, has been the main cause of biodiversity loss, but recently, climate change is playing an increasingly important role in the decline of biodiversity. Climate change has altered marine, terrestrial, and freshwater ecosystems around the world. It has caused the loss of local species, increased diseases, and driven mass mortality of plants and animals, resulting in the first climate-driven extinctions. On land, higher temperatures have forced animals and plants to move to higher elevations or higher latitudes,

many moving towards the Earth's poles, with far-reaching consequences for ecosystems. The risk of species extinction increases with every degree of rise in temperature. WWF's latest *Living Planet Report* estimates that we have lost 68% of all vertebrate wildlife populations since 1970. That is more than half of all birds, mammals, reptiles, amphibians and fish gone in just 50 years (WWF, 2020). In its landmark 2019 report, IPBES reported that one million species are now at risk of disappearing (IPBES, 2019). Currently, there are more than 150,300 species on The IUCN Red List, with more than 42,100 species threatened with extinction, including 41% of amphibians, 37% of sharks and rays, 36% of reef building corals, 34% of conifers, 27% of mammals and 13% of birds (IUCN, 2023).

In the ocean, rising temperatures increase the risk of irreversible loss of marine and coastal ecosystems. Live coral reefs, for instance, have nearly halved in the past 150 years, and further warming threatens to destroy almost all remaining reefs. Overall, climate change affects the health of ecosystems, influencing shifts in the distribution of plants, viruses, animals, and even human settlements. This can create increased opportunities for animals to spread diseases and for viruses to spill over to humans. Human health can also be affected by reduced ecosystem services, such as the loss of food, medicine and livelihoods provided by nature.

Biodiversity loss alone could jeopardize close to 80 per cent of the SDG (Sustainable Development Goals) targets. In 2019, climate change contributed to extreme weather events that caused at least USD 100 billion worth of damage. By 2050, cumulative damage from climate change and associated environmental degradation is projected to reach USD 8 trillion, reducing global GDP by 3 per cent, with disproportionate effects on the poorest regions.

2.3. Environment Pollution

Pollution further complicates the interplay between triumvirates of planetary crises. Pollution is the contamination of the environment by introduction of contaminants that can cause damage to environment and harm or discomfort to humans or other living species. It is the addition of another form of any substance or form of energy to the environment at a rate faster than the environment can accommodate it by dispersion, breakdown, recycling, or storage in some harmless form. Environmental pollution is one of the greatest challenges that the world is facing today. It began since industrial revolution, increasing day by day and causing irreparable damage to the Earth.

Rapid urban development, improper sewage disposal by industries, oil spills, disposal of chemical and radioactive wastes, and plastic pollution are some of the major causes of water pollution. Today, water scarcity and polluted water are posing a big threat to the human existence across many nations of the world. Ocean waters absorb around 30 percent of the carbon dioxide that is released in the atmosphere. Ocean acidification occurs when the CO₂ absorbed by the seawater undergoes a series of chemical reactions which leads to increased concentration of hydrogen ions, thus making the seawater more acidic. This decreases the carbonate ions in the seawater, which makes it difficult for clams, deep sea corals, oysters etc. to build and maintain their shells and other calcium carbonate structures. These changes in the ocean water chemistry can affect the behaviour of other organisms also. This puts the entire ocean food web at risk.

Air Pollution is another largest cause of disease and premature death in the world. It is estimated that more than seven million people dying prematurely each year due to pollution. Incredibly, nine out of ten people worldwide breathe air that contains levels of pollutants that exceed WHO guidelines. Pollution is caused by everything from traffic and factories to wildfires, volcanoes and other forms of fossil fuels. As per WHO data, ambient (outdoor) air pollution is estimated to have caused 4.2 million premature deaths worldwide in 2019 (WHO, 2021). Another cause of pollution is indoor household air pollution. Household air pollution was responsible for an estimated 3.2 million deaths per year in 2020, including over 237 000 deaths of children under the age of five (WHO, 2021).

The scale and pace of non-green growth has been greater and faster than the capacity and commitment to restore, renew, and replenish ecological resources. The marine, agricultural, terrestrial, and freshwater ecosystems are all choked by plastic pollution and under pressure from overexploitation. While the story of degradation and depletion is uneven across the globe, the rapid pace of decline in some regions is alarming. Soil and water pollution is creating a toxic mix that is impairing food systems and the ability to feed the communities of today and tomorrow. What must fundamentally change is the way these threats are approached: rather than in isolation, they must be treated as highly interconnected phenomena that interact with other socioeconomic factors, notably, widespread and worsening inequalities. Climate change does not impact food systems alone; it contributes to land degradation and hastens productivity and biodiversity loss.

Biodiversity loss will, in turn, weaken agricultural systems and render them vulnerable to climate change, pests, and pathogens. Dependence on fossil fuels is not only reducing air and drinking water quality, but also exacerbating soil erosion, endangering food systems, human health and security. Globally, 1.2 billion jobs depend directly on a stable and healthy environment. Livelihoods in agriculture, fisheries and forestry, as well as tourism and pharmaceuticals sectors, all rely on natural environmental processes. As global economies grow, so too does their ecological footprint. It is only natural then that the UN should mobilize now to erect protective bulwarks that will slow the pace and magnitude of environmental decline and marshal resources to support green, nature-based recoveries. The Organization is uniquely placed to call on and support countries to make the individual decisions that will ensure the integrity of our common home. Never has it been more important for the UN to exercise leadership and make use of its leverage (Passarelli et al, 2021).

3. Global Efforts Undertaken

Climate change, biodiversity loss and pollution are triumvirate of the planetary crisis the world is facing today. They need to be tackled together if we are to advance the Sustainable Development Goals and secure a viable future on this planet. Governments tried to deal the crisis through two different international agreements – the UN Framework Convention on Climate Change (UNFCCC) and the UN Convention on Biological Diversity (CBD), both established at the 1992 Rio Earth Summit. Similar to the historic Paris Agreement made in 2015 under the UNFCCC, parties to the Biodiversity Convention in December 2022 adopted an agreement for nature, known as the Kunming-Montreal Global Biodiversity Framework, which succeeds the Aichi Biodiversity Targets adopted in 2010. The framework includes wide-ranging steps to tackle the causes of biodiversity loss worldwide, including climate change and pollution. “An ambitious and effective post-2020 global biodiversity framework, with clear targets and benchmarks, can put nature and people back on track,” the UN Secretary-General said, adding that, “this framework should work in synergy with the Paris Agreement on climate change and other multilateral agreements on forests, desertification and oceans (Secretary General, 2022).” In December 2022, governments met in Montreal, Canada to agree on the new framework to secure an ambitious and transformative global plan to set humanity on a path to living in harmony with nature. “Delivering on the framework will contribute to the climate agenda, while full delivery of the Paris Agreement is needed to allow the framework to succeed,” said Inger Andersen, the head of the UN Environment Programme. “We can’t work in isolation if we are to end the triple planetary crises (Speech Delivered by Inger Andersen, 2021).”

In March 2021, the UN Development Coordination Office (UNDCO) gathered the United Nations Resident Coordinators (RCs) for a deep dive into the Triple Planetary Crisis. Over 20 UN entities and inter-agency mechanisms involving over 100 UN staff were involved in its preparation, execution, and follow-up. The purpose of the deep dive was to assess the multidimensional impact of the nature-climate-pollution crisis and identify tools and mechanisms that UN Country Teams can use to support a multidisciplinary approach to tackling the associated challenges at the country level. This deep dive comes three years after the reform of the UN Development System which resulted in a reconfiguration of the UN presence at the country level, the principal legacy of which is a dedicated, independent, and empowered system of RCs in 131 countries and a new global development coordination entity within the UN Secretariat, UNDCO. Delivering progress on the Sustainable Development Goals (SDGs) and positioning the development system to deliver on prevention was the reason, ambition, and challenge of these reforms. The key question is whether the reforms have improved the UN’s capacity to effectively slow or reverse the environmental damage, which could risk the realization of the global Goals, and, if not, what more can be done (Passarelli et al, 2021, p.1).

4. Some Suggestions

Triple Planetary Crisis affects all states. Therefore, their resolution requires the cooperation of a large part of the international community. These intertwined challenges are threatening the well-being and survival of millions of people around the world and jeopardizing the Sustainable Development Goals (SDGs). Addressing the triple planetary crisis requires collaborative action from all side of society to restore harmony with nature and foster a transition to sustainable socio-economic systems.

Multilateralism is key to address the triple planetary crisis, but ambition and commitments at the global level can only be effective if they are translated into concrete action. International standards can support this process, as they can be used as tools to implement environmental policy frameworks. International standards can provide methodologies, definitions, and measurement criteria that lay down a common foundation for global action. They can give

detailed and precise information to business enterprises, governments, civil society, municipalities and the public on how to translate a policy goal into action globally. Conformity assessment standards can then help build trust and increase confidence that these policy objectives are truly being met. International standards can also support cross-sectoral dialogue between scientific experts, industry partners and policymakers. International standards are an important contribution to closing the implementation gap and moving from agreement to collective action. Hence, there must be nature-based solutions as an integrated plan for people, government, and businesses to work closely alongside nature to avert a planetary catastrophe.

5. Conclusion

The triple planetary crisis describes three crises that we currently face: climate change, biodiversity loss, and pollution. The United Nations (UN) has responded with three agencies: UN Climate Change, UN Environment Programme, and UN Biodiversity to tackle this triumvirate of crises. It is essential that we consider them together when trying to tackle the triple planetary crisis. The UN has been working with member states to address these crises. However, for global warming to be limited to 1.5°C greater than pre-industrial levels, we must reduce carbon emissions by 45% before 2030 and attain net-zero by 2050. Therefore, we must create, and more importantly uphold, coordinated national governmental legislation and inter-governmental cooperation on an international scale if we are to solve these worldwide issues.

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