



Environment, Climate and Sustainable Governance

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Abstract - Climate change has been dubbed the most significant environmental concern of the twenty-first century, prompting passionate debate. Global warming is only one aspect of climate change. The rise in average temperature is simply one sign of bigger effects that include extreme heat, droughts, floods, storms, rising sea levels, food production consequences, and infectious illnesses. The periodic reports of the Intergovernmental Panel on Climate Change (IPCC), established by the United Nations and the World Meteorological Organization in 1988, consolidate key sources of knowledge on climate change. The general consensus is that anthropogenic emissions of fossil fuels and deforestation lead to a significant increase in atmospheric Carbon dioxide and other GHGs.

The problem of sustainability is being exacerbated by global warming. As our modern civilization witnesses an unmistakable period of global warming, the cause of this shift continues to be a source of debate among scientists and the general public. The present paper focuses on several areas of 'Environment and Climate Change,' including the causes, expected repercussions, sustainable governance, and the need for a better knowledge of climate change and increased worldwide awareness. Due to the sheer nature of the sustainable development, the key assumption of this study is that it cannot be realized without governance.

Keywords: Climate change, global warming, IPCC, Paris Agreement, Sustainable governance.

“The world is reaching the tipping point beyond which climate change may become irreversible. If this happens, we risk denying present and future generations the right to a healthy and sustainable planet- the whole of humanity stands to lose”- Kofi Annan (Former Secretary-General of UN)

When the COVID-19 outbreak broke out in 2020, most of the world went online, speeding a decades-long digital change. Many people began working from home, and many businesses developed digital strategies to keep operations running and some income flowing. Meanwhile, researchers used artificial intelligence (AI) to know more about the virus and speed up the search for a vaccine, while mobile applications were designed to help "monitor and trace" the pandemic's progression. Internet traffic soared by up to 60% in some nations quickly after the epidemic (OECD, 2020), demonstrating the pandemic's digital acceleration. Furthermore, the

rising reliance on the internet has heightened the urgency of privacy and cyber security problems.

Before the COVID-19 pandemic, several countries had enhanced their comprehensive approach to digital transformation. Generally, digital transformation has indeed been defined as changes within an organisation that have adapted through advancing technology to remain competitive, either to meet a new consumer requirement, institutional need, or to deliver new value or services to the customer. Governments around the world are also paying more attention to developing digital technologies like artificial intelligence (AI), blockchain, and 5G network, though the latter is necessary to support improved mobile broadband, IoT devices, and AI applications. The COVID-19 crisis emphasises the importance of a well-coordinated strategy for digital transformation. This necessitates a fine balancing act that will vary in each country, as cultural, social, and economic considerations all determine the most appropriate policy environment.

During the covid lockdown, there was a noteworthy environmental effect due to the closure of businesses, industries, construction sites, schools, and offices, as well as lower traffic activity. In the twenty-first century, climate change is a big concern. Because of the outbreak, both land and commercial aviation has been suspended. The reduction of GHGs and effluents released by businesses and transportation has reduced pollution in the environment. COVID - 19 regulations have provided residents of heavily polluted cities with clean air and clear skies. The air quality index (AQI) had improved in several cities. Noise pollution has also decreased dramatically. In India it had decreased by about 50-70 percent as a result of empty roadways and closed businesses. A good lesson has been taught to humans that if **we protect the environment, the environment will protect us.**

Environmental protection must be at the heart of any strategy for long-term inclusive growth. Because of the mounting evidence of global warming and the accompanying climate change, the topic has recently taken new importance. Environmental goals necessitate activity in multiple sectors, which is an important component of any environmental plan. Environmental goals can only be met if environmental considerations are factored into policymaking across a multitude of sectors. This would necessitate a sharing of responsibilities for pollution monitoring, regulatory enforcement, and the creation of mitigation and abatement strategies at all tiers of government and across sectors.

Climate Change- A change in normal conditions over a significant period of time is referred to as climate change. Climate change takes place due to natural and human influences. Since the

Industrial Revolution (1750), humans have contributed to climate change through the emissions of GHGs and aerosols, and through changes in land use, resulting in a rise in global temperatures.¹ One of the most severe environmental challenges of our day is global climate change, which is caused by rising quantities of Greenhouse gases (GHGs). The World Meteorological Organization and the United Nations Environment Programme founded the **Intergovernmental Panel on Climate Change (IPCC) in 1988** to evaluate previous and future trends of changing climate.² According to Jacobs (2012), it is a one-of-a-kind, unprecedented, and extraordinary body that "brought together nearly every climatologist in the world from a variety of disciplines to generate general agreement on the nature of the issue, the scientific proof on what was happening now, and how much you could do about it now."

"**Climate Change 2021**," the IPCC's **Sixth Assessment Report**, was published in three parts. According to the assessment, human activities are driving climate change, and the globe is on course to warm 1.5 degrees Celsius over pre-industrial levels over the next twenty years. Even in the best situation, the IPCC has said for the first time that 1.5 degrees of warming is unavoidable. More frequent and intense heat waves, more incidences of heavy rainfall, dangerous rises in sea levels, droughts, and ice melting are all predicted to occur around the globe, according to the report.

Other findings:

- Oceans and land, two critical sinks, would be substantially reduced in their capacity to absorb carbon dioxide in the atmosphere if emissions continue to rise.
- Marine heatwaves are triggering coral bleaching and increasing acidity, which is decimating fish stocks.
- The last ten years have been the hottest in the last 125,000 years.
- Young folk's participation is essential if future generations' interests are to be protected.

Implications of Climate Change- Climate change could have a broad variety of environmental, social, and economic implications. In most cases, these effects will be negative; however, in a few rare cases, they may be positive (such as increased crop yield). The intensity of the negative consequences will worsen as the average world temperature rises. Even if global warming is

¹http://www.wmo.int/pages/themes/climate/causes_of_climate_change.php

²WMO (World Meteorological Organization) and UNEP (the UN Environment Programme) which was established earlier in 1972 to coordinate United Nations environmental activities and assist developing countries in implementing environmentally sound policies and practices.

limited to 2 degrees Celsius above pre-industrial levels, negative consequences will occur, and the planet will need to adapt to the new weather conditions. Melting of glaciers, defrosting of permafrost, elongating of mid- and high growing seasons, pole-ward and elevational shifts of animals and plants variations, downturn in some animals and plants communities, early flowering of trees, increased temperatures, floods, and other climate changes are all mentioned in the IPCC Assessment reports. If climate change continues to progress as predicted, it will have a direct impact on human health, just as extreme weather events do, with greater risks of mortality and disability.

Adaptation and Mitigation- The IPCC reports describe the consequences of uncontrolled global warming. Continued emission of greenhouse gases will cause further warming and long-lasting changes in all components of the climate system, increasing the likelihood of severe, pervasive and irreversible impacts for people and ecosystems.³ Even with the best mitigation response, a significant detrimental shift in climate is unavoidable, the process of climate change adaptation must be prioritised. The most important adaptation metric is development. A robust economy is better equipped to adapt in respect of both cost and scientific competency. Emphasizing the importance of international cooperation in creating a strong mitigation strategy, the United Nations Framework Convention on Climate Change (UNFCCC) was established in 1992, establishing the concept of "common but differentiated responsibility" among both developed and developing countries, taking into account their respective capabilities. **The Kyoto Protocol**, approved under the **UNFCCC in 1997**, established legally binding GHG reduction targets for individual developed countries. **'Net zero' carbon targets**, which several nations have stated, may be a "destructive diversion" from the aim of reducing carbon emissions, according to Oxfam, an independent not for profit organization. To keep global warming below 1.5°C and avoid irreparable harm from climate change, the world has to get on track and strive to cut emissions by 45 percent from 2010 levels by 2030, with the major polluters leading the way. The **UN COP26 climate summit in Glasgow** saw the launch of the **Global Methane Pledge**. The United States and the European Union are leading the charge. This pledge has been signed by over 90 nations so far.

The Global Methane Pledge is a commitment to reduce the amount of methane released into the atmosphere. One of the main goals of this agreement is to reduce methane emissions by up to 30% from 2005 levels by 2030. In addition, **Indian Prime Minister Mr. Narendra Modi** made the following commitments at the **COP26 summit** in an effort to combat climate change:

³http://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_SPM.pdf

- India will reach net zero emissions by 2070 at the earliest.
- By 2030, India would assure that renewable energy accounts for 50% of the total energy consumption.
- India will also establish technology to generate 500 gigawatts of renewable energy by 2030, up from its current objective of 250 gigawatts.

In August of 2015, the National Adaptation Fund for Climate Change (NAFCC) was constituted by the Government of India. Its goal is to cover the costs of climate change adaptation for India's states and union territories, which are extremely vulnerable to the consequences of climate change. The German think tank published the **17th edition of the Climate Change Performance Index. India is ranked tenth** in the global ranking, **with a score of 69.22**. Except in the domain of renewable energy, where it is graded "medium," it is a strong performer. According to the research, India benefits from its low per capita emissions.

Paris Agreement⁴ Parties to the UNFCCC secured a breakthrough agreement to tackle climate change and expedite and deepen the actions and investments required for a sustainable low-carbon future at COP 21 in Paris on December 12, 2015. The Paris Agreement's main objective is to enhance the global response to climate change by keeping global temperature increase this century to about 2 degrees Celsius above pre-industrial levels and continuing to pursue measures to limit temperature rise even further to 1.5 degrees Celsius. In addition, the agreement intends to improve countries' ability to deal with the effects of climate change, as well as aligning financing flows with a low-carbon, climate-resilient path. All Parties are required by the Paris Agreement to make their best attempts through "Nationally Determined Contributions" (NDCs) and to enhance these efforts in the coming years. It went into effect on November 4, 2016. Since then, more nations have ratified the Agreement, bringing the total number of parties to 192 plus the European Union.

Sustainable Governance- We need a pluralistic strategy to deal with the shared objective of sustainable development, one that can deal with different actors and levels, one that can help construct a shared vision for sustainable development and resolve trade-offs. In other words, we require governance in order to cope with long-term growth. Sustainable development means different things to different people, but the most frequently quoted definition is undoubtedly '**development that meets the needs of the present without compromising the ability of future generations to meet their own needs**', and was published in 1987 by the

⁴<https://unfccc.int/process-and-meetings/the-paris-agreement/the-paris-agreement>

Brundtland-Commission in their report 'Our Common Future'. **Sustainable governance** is a concept in political ecology and environmental policy that emphasises the importance of sustainability (development) in all human activities- political, social, and economic.

The following are some of the most important principles of sustainable governance:

- Considering cities and communities, as well as economic and political life, as a subset of the environment, at all stages of decision-making and actions.
- Highlighting people's interdependence with the environments in which they reside.
- Encouraging the shift from open-loop/cradle-to-grave systems (such as disposal of garbage without composting) to closed-loop/cradle-to-cradle methods (like permaculture and zero waste strategies).

The 21st edition of the **World Sustainable Development Summit** was recently held in a virtual environment by **TheEnergy and Resources Institute** (TERI).It is the world's only Summit on global concerns to be held in a developing country. Now the question arises- How do we accomplish long-term policy outcomes and instil a longer-term perspective in policy decision? Economic globalisation, societal inequalities, resource shortages, and changing demographics, all of which cut through policy sectors and beyond national borders, force policymakers to quickly adapt and learn from others' failures. Governments should, in theory, act with the long term in mind. This entails developing policy solutions that preserve or raise the standard of living for current and future generations without imposing an undue burden on future generations.

Indeed, the greatest risk of destabilization is a rise in global population's material desires. Nonetheless, immovable planetary restrictions limit our capacity to satisfy these needs. As a result, environmental sustainability entails just using regenerative resources to the degree that they can be replaced. Any evaluation of sustainable governance must consider not only policy outcomes, a country's underlying democratic system, and the rule of law, but also the political leadership's ability to successfully manage operations.



Figure 2. International climate change negotiations: A timeline

Some concluding thoughts- Climate change policies have a variety of historical roots, functions of the system, political drives, and societal repercussions. Nevertheless, when it comes to planetary concerns like climate change, the dangers are intrinsically global, necessitating global sustainable leadership and, hence, inter-national remedies. The mitigation strategies presented by countries as part of the Paris Agreement are insufficient to keep global warming below 1.5°C or even 2°C. As a result, it is critical that world powers, the private sector, and citizens act quickly and do everything possible to protect our planet.

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