

A Comprehensive Analysis of Kyoto Protocol

Indrayudh Chowdhury^{1,*}, Nimish Sharma¹

Abstract

The Kyoto Protocol was established on December 11th, 1997. Due to a complicated ratification procedure, it went into effect on February 16, 2005. The Kyoto Protocol makes the United Nations Framework Convention on Climate Change operative by obligating industrialised nations and economies in transition to limit and decrease greenhouse gas (GHG) emissions according to the specified objectives. The Convention itself only requires these nations to implement mitigation policies and actions and to submit periodic reports of their progress. It exclusively binds industrialised nations and lays a higher burden on them in accordance with the notion of "common but differentiated responsibility and distinct capacities", recognising that they are primarily responsible for the present high levels of GHG emissions in the atmosphere. Under Annex B of the Kyoto Protocol, 37 industrialised nations, economies in transition, and the European Union are obligated to reduce their emissions.

Keywords: Environmental law, Kyoto protocol, emission reduction, developed and developing nations

INTRODUCTION

"We think that the Kyoto Protocol is a necessary document, necessary process. I am convinced that we will agree to disagree about substance"

—Goran Persson (Former Prime Minister of Sweden)

Earth is currently the only life incubator known to us to hold life in the vast universe explored by humans till now. This means that we have only a single planet available to us to live out our lives in, and if the environment of this life-giving planet becomes disbalanced in any manner, it may become incapable of sustaining life. The incessant need and the drive of humans for the sake of development has come at the cost of harming the environment. Actions like burning of fossil fuels, excavation of minerals, deep sea mining, etc., have caused irreparable harm to our environment, all for the sake of progress. Recently, schools in Delhi have also been shut down since critical levels of pollution that have made it impossible to go outside without proper respiratory protection [1]. This type of degradation has a serious impact on the quality of human life and causes serious illness among the people. This is one of the most important reasons why we need environmental protection laws in place to protect the state of it.

Environmental laws are sets of statutory regulations and principles whose aim is to protect and

maintain the environment. In pursuance of this, various international laws are formed and ratified by various countries to signify the joint global effort by humanity to save the environment. One of such international agreements was the Kyoto Protocol, which aimed at reducing emissions of carbon dioxide and the level of GHG by the industrialized industries in the global theater. A major summit known as the "Earth Summit" was held in 1992 which gave rise to ratification of an international agreement known as Kyoto Protocol, which came from the UN Framework Convention on Climate

*Author for Correspondence

Indrayudh Chowdhury
E-mail: IC7528@bennett.edu.in

¹Student, Department of law, Bennett University, Greater Noida, Uttar Pradesh, India

Received Date: January 19, 2023
Accepted Date: February 04, 2023
Published Date: February 20, 2023

Citation: Indrayudh Chowdhury, Nimish Sharma. A Comprehensive Analysis of Kyoto Protocol. National Journal of Environmental Law. 2023; 6(1): 1–6p.

Change (UNFCCC). According to the framework, greenhouse gas levels should be maintained “at a level that would prevent dangerous anthropogenic interference with the climate system”.

The present study is an analysis of the Kyoto Protocol wherein section I talks about the background and development of the Kyoto Protocol, i.e., the history of it. Section II talks about the key features of the Protocol and the outcome of the agreement. The conclusion of the study would present with the personal views of the researchers on the Kyoto Protocol.

SECTION I: BACKGROUND AND DEVELOPMENT

The Kyoto Protocol was an international agreement that attempted in the substantial reduction of the emitting CO₂ and greenhouse gas. The underlying premise of the Kyoto Protocol was that wealthy countries must cut their carbon footprints. In the year 1997, the Kyoto Protocol was held in Kyoto, Japan, when the global environment and life were threatened by greenhouse gas emissions. The Treaty was the initial amendment to the UN Framework Treaty on Climate Change (UN framework convention on climate), a convention that required its members to create national policies to reduce emissions of carbon dioxide. Greenhouse gases include carbon dioxide, Sulphur hexafluoride, perfluorocarbons, hydrofluorocarbons, methane and nitrous oxide which result in the increasing of Global temperature of the climate influencing the global climate change by causing global warming, also known as greenhouse effect. In accordance with the Intergovernmental Panel on Climate Change, which was founded by UN Environment Program and the World Meteorological Organization in the year 1988, one of the long-term implications of global warming would be an increase in the level of the oceans, which would flood low-lying coastal regions and might lead to the extinction of certain island nations; the dissolving of glacier, ice cover, and permafrost in the Polar regions; a rise in the number of disastrous climatic events; as well as a rise in the frequency of severe weather events which are all consequences of climate change. The Kyoto Protocol decided to bind most of the UN framework convention on climate Annex I member nations (participants of the Organization for Economic and Development and Cooperation and a number of nations with "transition economies") to legally mandated emission-reduction targets that are highly dependent on each country's particular circumstances. Other members of the UNFCCC and the treaty, who were largely developing nations, were exempt from having to cut their emissions. The treaty went into effect 90 days when it was adopted by at least 55 nations included in Annex I [2], which together were responsible for a minimum of 55% of the world's emissions of carbon dioxide in the year 1990.

The treaty offers several choices for achieving national objectives. Using natural systems known as "sinks" to eliminate greenhouse gases from the atmosphere was one option. One illustration of this would be the growing of trees, which removes the air's carbon dioxide as they do so. There was also the Sustainable Development Mechanism, which was an international effort that motivated rich nations to invest in facilities and new technology in certain under-developed nations. These were nations that frequently had vast potential to reduce emissions, and the Sustainable Development Mechanism motivated these investments. The Clean Development Mechanism (CDM) enables the country that spends to get a credit toward the fulfilment of its legal commitments equal to the realistic decrease in carbon. One example is replacing Coal-fired power stations by investing in natural gas-fired one. Another option was emission trading, which lets member states of the international treaty to sell and buy rights of emission, giving carbon dioxide emissions a monetary value. As part of their efforts to fulfil their Kyoto Protocol responsibilities, Emission trading market was set up European nations. Members nations that do not fulfil their emissions regulations would be obligated to compensate for such discrepancy between their own aimed and existing emission levels which would amount to 30% financial penalties during the next commitment period, which will start in 2012. These nations will also be prohibited from taking part in emission trading until it is determined that they have all the necessary compliance with the protocol. Later agreements were to specify emission targets for further obligated period of term.

In 18th Parties Conference in Doha, Qatar, in 2012, member nations resolved to extend the Kyoto Protocol until 2020. At the 17th Conference of the Parties, which took place in Durban, Africa, in 2011, participants reiterated their commitment to create a new climate change agreement that is both thorough and legally enforceable by the year 2015. This treaty would oblige countries that produce greenhouse gases, including big carbon emitters that are not bound (such as China, US, and India), to control and prevent the amount of carbon emission and other GHG that they release into the atmosphere [3]. The new agreement, which has taken effect in 2020, will supersede the Kyoto Protocol entirely.

Following a number of contentious discussions, Nations who participated at the Conference COP21, which was held in Paris and France in the year 2015 where the nations signed a worldwide but quasi arrangement to control the rise in the world's average global temperature to not more than 2°C above the pre-industrial level, with goal of maintaining this increase at 1.5°C [4]. This agreement is intended to limit the nation's average global temperature increase to not more than 2°C above the pre-industrial level. The historic agreement, which was adopted by all 196 parties to the UNFCCC, effectively replaced the Kyoto Protocol. In addition, it required a progress review every 5 years and the establishment of a \$100 billion budget by 2020 (to be refilled yearly) to aid developing nations in adopting technology that does not produce greenhouse gases. In 2001, the United States, which had joined the first Kyoto Protocol, departed from it. The United States contended that this international agreement was not fair as it required developed members nations to limit emission reductions, and that would be detrimental to the US economy. Even though the Kyoto Protocol was formed in 1997, overall emissions continued to rise until 2005, when it was ratified. Numerous nations, including EU members, looked to be thriving. By 2011, they hoped to meet or exceed their agreed-upon targets. The United States and China, two of the largest polluters of the world, emitted enough carbon dioxide emissions to negate any advances made by nations who met their targets. Global emissions grew by around 40% between 1990 and 2009 [5].

The Convention was a landmark political victory, but its continuation was in no means assured. In addition, studies conducted during the first two years of the treaty's implementation revealed that the majority of signatories might not meet their emission targets. Even though China, the World's largest emitter of greenhouse gases, and the United States, the second-highest emitter, were not bound by Kyoto treaty, some sceptics assert that the best outcome for the environment would be minor regardless of whether the objectives were fulfilled.

Even if completely implemented with US participation, some opponents said that the program's carbon reductions were insufficient to have a noticeable impact on the global temperature over the next few generations. In the meanwhile, a number of developing nations asserted that adjusting to climate uncertainty and variability was as important as reducing greenhouse gas emissions.

Section II: Key features and outcome

One of the main features of the Kyoto Protocol is that it addressed the issues of the emission of various harmful greenhouses in the environment which negatively impact it. The major greenhouse gases addressed in the Protocol are [6]:

- (a) Carbon dioxide (CO₂),
- (b) Methane (CH₄),
- (c) Nitrous oxide (N₂O),
- (d) Hydrofluorocarbons (HFCs),
- (e) Sulphur hexafluoride (SF₆), and
- (f) Perfluorocarbons (PFCs).

Some of the major tenets of the Kyoto Protocol show that developed and industrialized countries promised to cut their hydrocarbons by an average of 5.2% per year by the year 2012, which would be equal to about 29% of all greenhouse gas emissions in the world. One of the interesting points of the

Protocol is that each of the different parties have different goals that they have to achieve by the end of the target date, setting real-life and achievable goals for the countries according to their capabilities. Developed and industrialized countries were given higher targets to achieve as compared to developing countries due to the concept of Sustainable Development such as European Union members planned to reduce their level of carbon emissions down by 8%, whereas Canada and US were obligated to reduce their level of carbon emissions by 6–7% by the year 2012 [7].

The researchers would now expand on the features of the Kyoto Protocol in a point format to highlight the importance of those features. Some of the main features are:

1. Member nations of the UNFCCC came to an international agreement in 1992 to lower greenhouse gas concentrations in the atmosphere in order to avert a catastrophic climate change. However, one of the drawbacks of the Protocol was that the members were not required to follow this, and no firm goals were established under it.
2. The UNFCCC is expanded by the Kyoto Protocol, which also requires parties to agree to a specific reduction target. On December 11th, 1997, the protocol's text was unanimously approved, and it was enforced by February 2005. There are currently 192 parties to the protocol.
3. A layman's reading of the protocol shows that it sets binding targets for member countries' reductions in their greenhouse gas emissions. However, a proper analysis displays that only developed and industrialised nations have legally binding targets because of the assumption that due to their earlier industrialization phase for the sake of development than emerging nations, they historically contributed a greater portion of the emissions of pollutants in the environment, based on the principle of shared but distinct responsibility. The range of the goals extends between –8 and +10% of the nations' emission level in 1990.
4. The treaty allows some level of flexibility in how countries accomplish the targets in order to make the concept of "binding targets" under the Protocol more tolerable. Countries are permitted to increase what are referred to as "sinks", i.e., forests, to partially offset the emissions due to the fact that woods lower the amount of carbon dioxide in the atmosphere.
5. The Kyoto Protocol also set up three different mechanisms for countries to meet their goals of limiting greenhouse gas emissions via the:
 - i. International Emissions Trading Mechanism: This mechanism allows countries to possess surplus emission units (EUs) beyond their requirements. These unused units can be utilized for carbon trading, enabling countries to sell the excess units to those with a higher demand than their allocation.
 - ii. The Joint Implementation Mechanism: The Joint mechanism allows counties that have promised to reduce or limit their emissions to earn ERUs from a developing nation to establish in developed countries.
 - iii. The Clean Development Mechanism: With the Clean Development mechanism, countries that have promised to reduce or limit their emissions can set up units in developing countries that produce less amount of emission in order to earn CERC.
6. The treaty was ratified by most countries due to the fact that they were committed to the cause of fighting environmental pollution and global warming. However, certain countries stood out after they refused to accept the Protocol, for example, the US refused accepting the Protocol on the principle that setting legal binding standards solely for industrialised nations and excluding polluting nations like China and India could be detrimental to its own economy. Even Canada withdrew its support of the Protocol in 2012.
7. Another main component of the Kyoto Protocol was its compliance mechanism and punishment in case of failure to meet the set goals. A country would have 1.3 t of emissions subtracted from its allotted amount for a subsequent commitment period for each tonne of emissions by which it exceeded its quantifiable emission limitation and reduction aim.
8. Another talking point was that the Kyoto Protocol was considered to be a hard law, i.e., it had legal obligations towards member states that were legally binding on the member nations who were party to the treaty and violation of the terms would be legally enforceable before the court

against that particular member nation. Therefore, if any one of the member states violates the principles or failed to meet the goals set out under the Protocol, they could have been brought before the international court for violating the principles.

9. A main point of significance is that the framework of the treaty does not extend its application to India, as India is a non-Annex I country under the rules of the Protocol, but India still ratified the treaty in August 2002.

Many member nations, including those in the EU, had calculated that they would reach or surpass their targets set forth in the accord by 2011. However, despite having set and defined goals, many countries also failed to reach their targets and even exceeded them in certain cases. For example, countries like the USA and China emitted enough greenhouse gases to negate any gains made by the other member parties who fulfilled their part of the commitment, which was evidently seen when emission levels rose by approximately 40% between the years 1990 and 2009. The US also backed out of the agreement in 2001, claiming discrimination between the goals set forth by the Protocol in reference to developed and developing nations, citing that the heavy targets set forth by them would hinder the goals of the US economy.

Due to such reasons, once the first commitment period of the Protocol finished, another meeting was held in Qatar, called the Doha Agreement. This new agreement sought to amend the principles of the Kyoto Protocol in order to ease the burden of reducing emissions of the member nations to increase its acceptance among them and to assign easier goals to achieve. This agreement too fell through after another sustainable development summit was held in Paris, where the member nations signed the Paris Climate Agreement in 2015. This new agreement encouraged all major greenhouse gases emitting nations to reduce their climate-altering emissions and to strengthen their commitments towards climate protection over time. One of the key requirements of the agreement was to cut emissions in order to limit the earth's temperature increase in this century to 2° (also preferring a 1.5° increase over the 2° limit). The Paris Agreement also establishes a framework for transparently monitoring and reporting the member countries' climate targets and offers a method to the developed countries to support developing countries in their efforts to adapt to the mechanisms of climate control.

CONCLUSION

The present report details the history and development of the Kyoto Protocol from its initial stages in the section I. The section II discussed the key features laid down in the Protocol which were characteristic of a strong climate protection agreement. However, the fact that the Kyoto Protocol was a hard law, i.e., it had legally binding obligations that were enforceable in the court of law, made it unattractive to a lot of member nations, especially the developed nations, who believed it to be unfair that they were given higher target goals to reach than developing nations. Regardless of the numerous concerns regarding climate change which were a priority of this international agreement led to a completion which was not the greatest accomplishment but fulfilled a considerable amount of achievement by its process of ratification by member nations including developed and developing countries to meet their objectives over the next 15 years bringing an industrial revolution by growing economic growth in industrialized nations.

The result was mainly the goal of the Kyoto Protocol which was not met with estimates indicating that there was roughly a 40% increase in greenhouse gas emissions instead of a decrease in the same. This indicates that the targets set out by the Protocol were too harsh in nature, demotivating the member nations from trying hard to meet their goals. What was needed was a softer law that did not place a heavy burden on the member nations to meet global expectation but at the same time encouraged them to adopt stronger and evolving conventions for climate protection which resulted in the Paris Climate Agreement of 2015. Kyoto Protocol is an initial step in reducing the greenhouse gases and carbon dioxide concentration present in climate. Given the scarce amount of carbon dioxide present in the atmosphere, it will take years of emission reduction by the member nations that may have to use the

tools of research, technology, and investment to have a clean sustainable environment for future generations.

Abbreviations

UNFCCC:	United Framework Convention on Climate Change
GHG:	Greenhouse gases
CDM:	Clean Development mechanism
COP:	Conference of Parties
EU:	Emission unit
ERU:	Emission reduction Unit
CERC:	Certified Emission reduction Credit
CO ₂ :	Carbon dioxide
OECD:	Organization for Economic Cooperation and development
IPPC:	Intergovernmental Panel on Climate Change

REFERENCES

1. Live mint. "Delhi air pollution: All primary schools to be shut from tomorrow, says CM Arvind Kejriwal". [Online]. Available at <https://www.livemint.com/news/india/delhi-air-pollution-primary-schools-to-be-shut-till-situation-improves-in-the-national-capital-says-cm-kejriwal-11667541169385.html>. last accessed on 20th December 2022.
2. Dominique van der Mensbrugghe. A (Preliminary) Analysis of the Kyoto Protocol: Using the OECD GREEN Model. [Online]. Available at <https://www.oecd.org/dev/1923191.pdf>. Last accessed on 21st December 2022.
3. Chinh Cong Ngo. Climate Change Risk Communication. [Online]. Available at <https://edepot.wur.nl/554534>. Last accessed on 22nd December 2022.
4. International Association of Drilling Contractors. Offshore Division Report on International Regulatory and Standardization Activities Affecting the Offshore Oil and Gas Industry. [Online]. Available at http://dev2.iadc.org/wp-content/uploads/2017/09/InternationalReport_Aug2017_Final.pdf. Last accessed on 22nd December 2022.
5. Carla Tardi. What is the Kyoto Protocol? Definition, History Timeline, Status. [Online]. Available at <https://www.investopedia.com/terms/k/kyoto.asp>, last accessed on 23rd December 2022.
6. Id at 2.
7. Id at 5.