

CLIMATE CHANGE AND ENVIRONMENT

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Abstract

Nature is a special gift of earth that is given to us for our life but being mankind, consuming resources, are we giving something back to the earth? The answer we all know that is big 'No'. We are continuously using the resources and the resources are depleting day by day. Excess use of resources is polluting the environment and bringing forth climate change that is leading nature into a destruction that is going to be harmful in the coming time. Use of resources not in a proper way and the environmental destruction, just like we can see an increasing level of greenhouse gases that are leading to the global warming and this is creating the imbalance in nature, it is harming the climate. Scientists believe that the harm will increase more from the next century by 2100 it is estimated that sea level will rise 1/4 feet that can be harmful to the mankind. We are aware of the consequences that are going to happen in the future than also we are neglecting it. Considering the harms in the future, as the earth is warming so we can say that in future the places will get hotter but this is not true, places will get hotter and places which belong to north side will become colder, everything will be in excess. We can experience the heat waves, inevitable disasters. Its time to take the step otherwise the future will not be clear. Pollution will destroy everything.

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1. “Introduction”:

“Climate Change is no longer some far-off problem; it is happening here, it is happening now” said by Barak Obama, Former President of USA. Climate Change is referred as the change in a climate for the longer period of time or for decades. It can be due to natural variability or as a result of human activity. According to United Nation Framework Convention³ on Climate Change (UNFCCC) refers to climate change as a change of climate that is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods. The Earth’s climate has changed throughout the history. In the last 650,000⁴ years, there have been 7 cycles of glacial advance and retreat, with the abrupt end of the last ice age about 7,000 years ago. It marked the beginning of the prevailing climate era and human civilization. The changes in the environment and the scientific evidence are proof of it. The earth is becoming warmer, most of the warming happened in the last 35 years with 16 out of 17 warmest years on the record since 2001. 2016 was the warmest year on record. From January to September, they were reordered as the hottest month. Warming of the ocean and shrinking of the ice sheets in Greenland and Antarctic, all the fresh water is going to the ocean and it is leading to the rise of sea level. The oceans are becoming more acidic, since the starting of the industrial revolution and the increase in the carbon emission from the human activities; the carbon emission is absorbed by the ocean surface, and almost 30 percent of ocean water has now become acidic. All these are the evidence of the climate change and in the future, they are going to become the worse that will lead to the disturbances in the environment.

[³] UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE, (Last Opened December 27, 2017)
https://unfccc.int/files/essential_background/background_publications_htmlpdf/application/pdf/convention.pdf

[⁴] Climate Change for Dummies #1: How do we know that recent increases in CO2 levels are man-made? (March 29, 2016) <http://www.astro-sharp.com/2016/03/29/climate-change-for-dummies-1-how-do-we-know-that-recent-increases-in-co2-levels-are-man-made/>

2. “Causes of Climate Change”:

The things are changing now; the disturbances in the environment can be seen as it is affecting the nature and civilization. We all are aware of the changes in the environment but we are not taking it seriously, we are neglecting the changes and living our lives. The climate change is caused by the natural factors as well as human factors, but this climate change that is happening now, the biggest shareholder is human causes, not the natural causes. Our civilization is dependent on fossil fuel. We were burning fossil fuels in the large amount to fulfil our needs. We were in the misconception that the burning of the fossil fuel would not harm our environment, and this misconception leads to the present changes and it proved us wrong, burning of a large amount of fossil fuel is contributing in the greenhouse gases. The greenhouse gases are Carbon dioxide, methane, nitrous oxide and chlorofluorocarbons. The increase in the greenhouse gases in the environment is contributing to global warming. The best known and the most important greenhouse gas is Carbon dioxide. The concentration of carbon dioxide in the atmosphere is subject to variation even without human intervention. The carbon cycle causes an exchange of carbon dioxide between the biosphere and the oceans on the one hand and the atmosphere on the other. Forests are vital to the equilibrium of our atmosphere by removing Carbon dioxide through the process of Photosynthesis. Cutting down forests is contributing to rising greenhouse gases levels and global temperatures. Scientists from the Intergovernmental Panel on Climate carrying out global warming research have recently predicted that average global temperatures could increase between 1.4 and 5.8 °C by the year 2100. Changes resulting from global warming may include rising sea levels due to the melting of the polar ice caps, as well as an increase in occurrence and severity of storms and other severe weather events⁵. Deforestation is also responsible for it, humans are cutting trees for land, land is limited and population is increasing, people need shelter so they are cutting forest and building their houses, use of vehicles on the roads, they are emitting gases which are harmful to the environment and it is disturbing the balance of it.

[⁵] Global Warming: News, Facts, Causes & Effects, (Last Opened December 27, 2017)
<https://www.livescience.com/topics/global-warming>

3. “Effects of Climate Change on Environment”:

Climate change affects the people and the environment in both the ways positive or negative but the huge chances rests on negative effects because climate change creates many problems in day to day life of farmers, peoples, animals, environment. There can be the effect like hurricanes and heat waves that can be life-threatening. There is also a long growing crop season that can be seen as positive in climate change. But as I said earlier the chances will be more like in a negative way that will harm the eco-system. Climate change can affect the health of the people, pollution all can lead to the degradation of the health of the peoples and as well as the animals. Climate change can lead to the heat waves that are really dangerous for infants, and peoples. In 2003 heat wave in Europe caused about fifty thousand deaths, and a 1995 heat wave in Chicago caused more than six hundred deaths. In fact, heat waves cause more deaths in the United States every year than hurricanes, tornadoes, floods, and earthquakes combined. Heat Waves is a serious issue that is caused due to a climate change. You all have come across a word ozone layer, that protects harmful ultraviolet rays reaching us that is ‘good ozone’ that is found at the topmost but the one that is found close to the surface of the earth is called ‘bad ozone’ because of that harm peoples. People suffering breathing problem, and asthmas. The reason for this is ‘bad ozone’ layer. There are many other incidents that state that the reason is climate change. In 2008 there were series of floods in different parts of India. The states that were hit by the flood were Assam, Bihar, Maharashtra, Andhra Pradesh, West Bengal, Orissa, and Uttar Pradesh. The irregularity in the monsoon, heavy rains, untimely monsoon all these is responsible for the floods in India from 2005 to 2017. The future consequences can be worse the temperature will continue to increase more; it will not be uniform and smooth over the time. The chances of unpredicted monsoon, heavy rains and precipitation are there that will result in the flood, and in some places, there will be little or no rain that will lead to the drought. Agriculture is dependent on the monsoon; the uneven precipitation will affect the agriculture. Globally the change in rain patterns could lead to severe potable water shortage especially in poorer countries. The Arctic Ocean is expected to become essentially ice-free in summer before mid-century. There are also the predictions of the increase in sea level. All current models agree on a rise of about half a meter by the end of the century. Since most of the global population lives in coastal areas, sea level rise will have a major

effect on world population displacing millions of people. Sea level rise will also have drastic impacts on water resources (salt contamination of fresh water supplies). Agricultural lands will become infertile and flooded.

4. “How We Can Curb Climate Change”:

4.1 Say ‘NO’ to Global Warming

The way by which we can protect our planet is by saying No to the global warming. The biggest reason for the shift in the climate change is global warming. We can control it by first of all not burning coal, oil and gas this will lead to the reduction of gases in the environment. Trees are the sources that can help in the reduction of global warming. Plant more and more trees and avoid cutting of trees. Trees can easily filter the harmful gases we have to save more and more trees for the future. Vehicles also emit harmful gases, try to make less use of them and use CNG fuel in them they are eco-friendly, they will protect our nature. The smokes emitted by the planes are very harmful. Researchers even say that try to make less use of planes or make very fewer trips, there are many other ways to get connected the reason behind this is the harmful gas released by the planes. Day by day our environment is becoming too prone to the pollution, there is a lot of pollution in the environment, air pollution, noise pollution and water pollution all-together they make the environment dirty. Try to save energy as possible; to make electricity it requires a larger amount of fuels to be burnt in their creation. Use LED bulbs instead of the bulbs, they will save energy and give you more light. The best that can be done is the use of alternative source of energy that is the use renewable resources.

4.2 Alternative Energy Sources

Energy is one of the most important resources in all the industries out here; it is significant to have its optimum utilization and sustainable use. Rapidly decreasing availability of resources of energy could lead to major problems in future. Major sources of energy that is popular in the whole world and in India also is the fossil fuel one but some alternatives sources of resources not only help us in making the sources last forever but can also help us when there is also a support when we are out of fossil

fuels. Now looking at the present situation of India, alternative resources have become one of the most important ways to fulfil the needs of various industries in our country. It is a necessity and sustainable renewable energy is a vital link in industrialization and development of India. We are switching to the alternative source of energy for fulfilling our further requirements.

Looking at the various reasons why the alternative source of energy is must, let's see what actually alternative sources of energy are, these are basically those resources which are directly provided by nature or which are renewable and environmentally friendly, like solar energy, wind energy, hydroelectric energy, biomass energy, etc.

5. “Kyoto Protocol”

The Kyoto Protocol is a UN-based agreement between the various nations to reduce the emissions and help in reducing pollution. As the developed nations are the major contributors in this emission, so there is a heavier burden on them.

In the Rio Convention, terms were made that lead to the formation of Kyoto Protocol. The Convention was held in 1992 also known as “Earth Summit” and the theme was basically made to see the relationship between environmental trends and development at the national and international levels. This Convention led to the formation of the Rio Declaration, Agenda 21 and an agreement on two conventions. The two conventions included the FCCC Framework Convention on Climate Change and Biological Diversity, both legally binding.

FCCC was then signed by 154 countries focusing mainly on stabilization of the number of greenhouse gases in the atmosphere, while also ensuring that food production is not put under threat, allowing for economic development to proceed. Developed countries should take the initiative in reducing levels of greenhouse gases in the atmosphere no specific greenhouse-gas-reduction aims, time frames, or penalties for violators were agreed on

The participating countries decided on meeting at COPs (Conferences of the Parties) on a regular basis to work on the implementation of the Convention's objectives.

After having 2 COPs in the third COP, Kyoto Protocol was prepared in Kyoto, Japan in 1997.

With the main focus being: -

- 1) Targets are to be set for the emission reduction of greenhouse gases for each member.
- 2) A program for greenhouse gas emission
- 3) Penalties for the violators of the established targets and rules and regulations.

In 2001, a doubt was created by the then-president George W. Bush of USA as he did not support and said that there could be possibilities that the US does not ratify it and this created a confusion whether framework that they wanted to introduce globally for the issues of climate change will be effective or not as a framework to be enforced 55% of the developed nations are supposed to agree upon it and the US being 36% shareholder of it became difficult for the UN to get it into force.

And after 7 years of its proposal on February 16, 2005, it came into force because Russia ratified it and making it as 55% from the developed countries.

The first commitment period was established from 2008 to 2012.

Doha Amendment was an amendment to the Kyoto Protocol by the conference of parties. It was held on 8 December 2012 in Doha, Qatar. This amendment established the second commitment period of Kyoto Protocol⁶ that began on 1 January 2013 and will end on 31 December 2020 and will be binding on 37 countries. Though it has not come into force yet.

Objectives:

The main objective of the Protocol was to reduce the emissions and try to lessen greenhouse effects. The ultimate goal is “stabilization of greenhouse gas concentrations in the atmosphere at a level that would stop dangerous anthropogenic interference with the climate system”.

If we see the stabilizing of the GHGs, which is more focused by this protocol. The anthropogenic gases need different stabilizing level so that the emission could be reduced in order to stabilize the atmospheric concentrations and carbon Dioxide (CO₂) is the most important anthropogenic GHG. For stabilizing the concentration of CO₂, elimination of anthropogenic CO₂ emissions is an ultimate require.

Basic concepts of this Protocol⁷:

[⁶] Kyoto Protocol (Last Opened December 28, 2017) http://unfccc.int/kyoto_protocol/items/2830.php

[⁷] Kyoto Protocol, Objectives (May 24, 2017) https://en.wikipedia.org/wiki/Kyoto_Protocol

- There are binding commitments for the ANNEX I Parties i.e., they are legally committed to reducing emissions of greenhouse gases that is the main feature of this Protocol. In UNFCCC negotiations, Berlin Mandate on the basis of which such commitments were made, eventually lead to this Protocol.
- Implementation. For implementation, some policies and measures are to be prepared to meet the objectives of the Protocol; these policies are to be formed by ANNEX I Parties with the main objective to reduce greenhouse emission. Absorption of these gases is required to increase and utilize of all the mechanisms available i.e., the joint implementation like the clean development mechanism and emission trading, so as to get more credits that would allow more greenhouse gas emissions at home.
- Establishing an adaptation fund for climate change will minimize the impacts on developing countries
- Accounting, Reporting and Review in order to ensure the integrity of the Protocol.
- Compliance. Establishing a Compliance Committee to enforce compliance with the commitments under the Protocol⁸.

Though under this Protocol, the emissions could be reduced by just using the national measures if any country needs some help they can use the three market-based mechanisms provided by this protocol which is: International Trade Emission, Clean Development Mechanism and Joint Implementation. Basically, under this, the countries are supposed to monitor their emissions as per trade carried out. The system to be followed while monitoring is:

Tracking and recording transactions are done under the registry system. To verify whether the transactions are consistent with the rules of Protocol, The UN Climate Change Secretariat that is based in Germany keeps a log of all the international transactions. Annual emission inventories and national reports are to be submitted by parties under the Protocol at regular intervals.

To ensure that Parties are meeting the commitments, a compliance system is there to not only ensuring but to help them too if they have any problem in achieving commitments.

[⁸] Ibid

Adaptation

The Kyoto Protocol, like the Convention, helps the countries to adjust and adapt to the adverse effects of climate change. It facilitates the deployment and development of technologies that can help increase resilience to the impacts of climate change.

In the very first commitment period, the share of proceeds from the CDM project activities was used as the fund for financing. In the very first commitment period, the share of proceeds from the CDM project activities was used as the fund for financing. In Doha, in 2012, the decision for second commitment period was made and for that international emission trading and joint implementation will provide the fund with a 2 percent share of proceeds.

6. “National Action Plan on Climate Change”:

Climate change was the threat that was increasing day by day to overcome government introduced National Action Plan on Climate Change on June 30, 2008. It focuses on 8 missions they are the first one is National Solar Mission, second one is National Mission for enhanced Energy Efficiency, third is National Mission on Sustainable Habitat, fourth is National Water Mission, fifth is National Mission for Sustaining the Himalayan Eco-System, sixth is Green India Mission, seventh is National Mission for Sustainable Agriculture, and last is National Mission on Strategic Knowledge for Climate Change. For the accomplishment of these 8 missions National Action Plan was implemented.

7. “Laws related to Environment”:

Environment pollution and climate problem is the serious issue now a day to overcome with this Indian government introduced many laws that were further amended and made applicable. On the serious note, the government said that if the laws will not be followed then there will be punishment and fines as according to the law. Air (Prevention and Control) Act was passed in 1981 with the objective to control the air pollution. Environment (Protection) Act was passed in 1986 with the objective to prevent the environment. Protection of Plant Varieties and Farmers right act was passed in 2001 with the objective to protect the plants and rights of the

farmers. Many more acts were passed. The government passed many acts for the sake of the environment. But they are not applied properly.

8. “Conclusion”:

We have consumed the natural resources in our own way without caring about the future and we have seen the effect. We want that our upcoming generations should witness the healthier planet; we want them to start their life fearlessly. If we will not look today at the matter of climate change and global warming then how we can expect our future generation that they can start their life without fear. So we have to take steps today, this is our planet, our home. Just like we keep our house clean and maintained, in the same we have to maintain our planet. We discussed the Kyoto Protocol that is signed by the different countries for the protection of the environment. We should also have the protocol that should be followed by all the peoples who are living on this planet to protect our environment. There are many alternate and renewable sources of energy that can be used for the generation of power and electricity. Solar energy, hydroelectricity all these are helpful. If we use them wisely than we can change the scenario of the future. So we should start using them and try to waste the least we can.

“Adaptation is the only means to reduce the now-unavoidable costs of climate change over the next few decades”

Nicholas Stern

JUS IMPERATOR