Environmental Issues at the Global Level: Causes and Strategies to Control

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Abstract -This research study aims at underlying the various global environmental issues and the factors that lead to those issues on the planet. The global environment is affected by the various activities and conditions of different countries of the world like increasing industrial practices, population, etc. and these activities adversely affects the natural resources of the global environment like land, fossil fuels, etc. Two major causes were reported against the environment and they were global warming and energy crisis. The global issues related to the environment occurred due to the excessive emission of the green house gases. The green house gases are the harmful gases that results in the increasing surface temperature of the earth and thus resulting in the global warming. The carbon dioxide, methane and nitrous oxide are some of the green house gases out of which the methane is the most powerful whereas the carbon dioxide s maximum emitted by the human activities.

Keywords: Global environmental issues, global warming, biodiversity, greenhouse gases, climate change, and animal agriculture.

I. INTRODUCTION

This research study aims at discussing the environmental issues in the global world and strategy that can be use for reducing the adverse affects of these issues. The global environment is affected by the various activities and conditions of different countries of the world like increasing industrial practices, population, etc. and these activities adversely affects the natural resources of the global environment like land, fossil fuels, etc. Different factors lead to natural degradation in different countries (Cranfield, 2001). For instance: in the developing country like India the growing economy, population and growth resulted in the degradation of the natural resources like land, forests, biodiversity, etc. The major issue associated with the global environment is the increasing temperature of the world i.e. global warming and this in turn would led to several severe consequences to the natural resources like increasing the sea level, ocean level, etc. (Bisgrove and Hadley, 2002). The population of the world is increasing and is resulting in different patterns of the consumption, in some regions of the world; the population is very dense like China, India, etc. The population is not evenly distributed round the globe and there are three demographic birth factors, which affect the population of a place, and they are: migration and immigration, mortality and natality (Cassar, 2005). There are various environmental issues which are related to the global world like diminution of natural resources, water, air, ground water, toxic chemicals and soil pollution, depletion of the ozone layer, loss of bio-diversity, global warming, issues related to the nuclear wastes and radiation and extinction of wildlife and natural habitat (Anand, 2013).

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There are various environmental issues at the global level and they are discussed in detail under this report. In addition, the various ways by which the global issues can be handles and strategies that can control the global warming are discussed as well with the factors that lead to the global warming.

Environmental issues at the global level

The issues related with the environmental degradation in the world are increasing rapidly. Initially, only two major causes were reported against the environment and they were global warming and energy crisis. However, later on various other issues were disclosed and were considered equally important and hazardous. First issue is the changing climate. The seasons and the climate were fixed but the scene is rapidly changing since last decade. The planet is experiencing the rapid increase in the temperature and this in turn had resulted in several other issues like irregularity in the weather, melting of the glaciers, frequent storms, rising sea and ocean water levels, etc. Various human activities lead to increase in release of the green house gases in the environment. It is been reported by the IPCC (Intergovernmental panel of climate change) that 0.6^0 C increase in the surface temperature of the planet is reported in the 20^{th} century. It is also been reported that emission of the green house gases including the carbon di oxide in the world is rapidly increasing and this is resulting in the frequent change in the climate. It is been estimated that the emission of the green house gases would increase at twice the current rate by the end of this century and this in turn is expected to increase the temperature by 1.4^0 C to 5.8^0 C (Holman, Loveland, Nicholls, Shackley, and Berry, 2001). The climate change is an important issue, as it would result in the cause of various other issues such as increase in the occurrence and concentration of the flood, drought and other natural calamities. The climate change would also lead to rapid change in the temperature and the increase in temperature would led to increase in the sea and ocean level and this in turn would lead to elimination or over flooded of the small islands and areas which are not situated at height (Karanth, 2006). The increase in water level and flood would cause disaster and loss of the wealth as well as would result in various epidemic diseases thus, causing loss of health and species as well. The higher temperature due to change in climate would lead to high rainfall and this would promote the diseases such as dengue, malaria, yellow fever, etc. Therefore, it is very essential for the humans to understand the adverse affects of the increase in emissions of the green house gases else with the environment the human too will be destroyed (Hulme, Jenkins, Lu, Turnpenny, and Mitchell, 2002). The other issue that need to be resolved is to preserve the flora and fauna. Every species has its role in the environment and extinction of single specie would result in the dramatic change in the ecosystem,

as all the species are dependent on each other. Therefore, the loss of biodiversity is the other issue and need to be focused on. One of the other global environmental issues is the energy crisis. The dependency on the fossil fuels i.e. non-renewable resources for receiving the energy in order to fulfil the requirement of growth of various sectors is increasing and resulting in the crisis of the energy. The fossils fuels are non-renewable source of energy and due to high usage rate is at the threshold of exhaustion. Various renewable sources can be used as a replacement to the fossil fuels but this attempt is not completely successful, as renewable sources do not have full potential to replace the fossil fuels (Epstein, 2002). One of the other global environment issue is the over utilization of the natural resources. The natural resources are available to the humans and are free of cost. The natural resources are not evenly divided round the globe instead the natural resources and their way of usage varies from region to region. The natural resources are not only available for the utilization of the humans instead they have their own roles to perform in the nature and over utilization of one would result in the depletion of other resources automatically. The fishing, mining and agriculture are some of those human activities, which are resulting in the degradation of the nature as for mining and agriculture the forests are cut down and fishing is resulting in the reduction of various marine species even some of the species are extinct while some other are at the urge of extinct. The humans are highly dependent on the natural resources and therefore are using it at rapid rate but severe consequences have to be faced after the exhaustion of the natural resources (Cranfield, 2001). Therefore, it is better to use the available natural resources as per the requirement and not just for the greed.

One of the highly available natural resources is the land and this resources plays an important role in the day to day life of the human beings but some of the human activities are degrading this resource. The gradual degradation of the land is called as the land pollution. Once a piece of land is polluted, the humans cannot use it in any way. The polluted land also is not suitable for the vegetation purpose and this in turn would result in the soil erosion. There are various human activities which causes the degradation of the land such as the disposal of the waste, deforestation, etc. The land is important natural resources and is required by the humans and other species in various ways and degradation of it is causing in severe imbalance and loss to the ecosystem. One of the major reasons for the degradation of the land is the improper utilization of the land available. The trend of urbanization is growing and for this the land is used and destructed. In addition, the world is growing as a concrete jungle and this lead to the degradation of the natural resources such as the land, forests, soil, etc. The power of a country is measured by its nuclear power as the potential of this power id very high but the major thing that need to be focused on while using the nuclear power is that there are various problems which is associated with this power such as the radioactive waste which results from the nuclear power plants. The humans use the natural resources and they keeps on increasing in this world whereas the natural resources are limited in this world. The population of the world is increasing at an alarming rate especially in the countries like India, China, etc. whereas the availability of the natural resources is limited. In addition, on the top of that the major issue is that the growing population is over utilizing the natural resources and as a result, degradation and depletion of the natural resources is taking place in the global environment. The basic requirement of the human population is the food, shelter and clothing (Cranfield, 2001). However, various other resources are also considered as the basic requirement in the changing scenario. The food and shelter is directly obtained by the natural resources and with increasing population, the food and land are under the crisis. The increasing population would also led to pressure on the economy for growth and for creating more jobs and this would result in construction of more industries and thus more utilization of the natural resources. However, the increasing population is the major issue associated with the global environment but various countries due to some or the other reasons ignore this issue. For instance, the China is the top most densely populated country of the world but it had designed and implemented the policies for the restriction and control the population growth in the country. Whereas though the India is second highest densely populated country of the world but in India no law against the increasing population is been implemented as it is marked as against the religion and India is a democratic country. However, the government of the country is trying to create awareness about the consequences of the increasing population but this process is slow and not that effective.

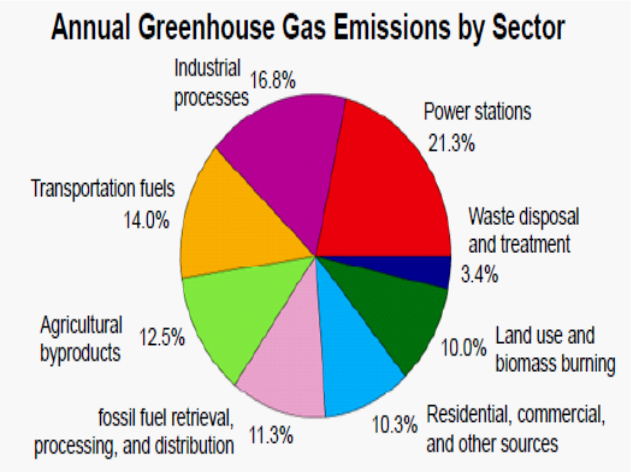
The other issue associated with the global environment is the management of the waste. The human population in the world is increasing and with this the various activities of the humans is increasing as well. The various human activities are associated with the processes, which led to the creation of the waste. The management of this waste is very important, as ineffective waste management would cause harm to the environment and in turn to the various species and humans itself. The waste may consist of the harmful and toxic gases and therefore, proper care must be made for release of such waste. Generally, these waste are exposed to the air or water resources such as the rivers, seas, etc. but, this should be controlled as it will not only cause harm to the nature but would also result in the toxicities of the water and air and would cause death of various species including the human. Nevertheless, with the increasing population the major part of the world is occupied by the humans only and as a result it is very difficult to find a place for disposal of the waste. In addition, the tie required for the waste treatment is very high in respect to the waste disposed and as a result, the waste is polluting our planet at a rapid speed.

Different layers surround the earth and these layers have their own important. The upper most layers of these layers are stratosphere and this layer is surrounded by the ozone layer. The ozone layer is also called as life saving layer as this layer helps the humans, animals and plants from the UV-B radiation of the sun, this radiations are deadly and would not allow any living organism to survive on earth under its presence. The ozone layer traps this radiation in its layer and does not allow it to reach earth. But, due to increasing adverse activities of the humans i.e. activities of the humans which causes harm to the nature such as increasing use of the CFC (chloro fluoro carbon) and ODS (other ozone depleting substances) the ozone layer is been depleting.

Initially, the ozone layer was very thick but now it is gradually depleting and if the use of CFC and ODS are not controlled than it will result in the complete depletion of the ozone layer. The depletion of the ozone layer would cause the UV-B radiation of the sun to reach the earth and would cause the heath and species on earth in several ways such as skin cancers, development of the eye cataracts, reduction of the immunity power system, reduction of the yield of fish by destroying the microbial organisms.

The chief Seattle, in the eighteen century defined humans as threads of the web where web is the life. The web is the complete life system i.e. the eco system and humans are the main builders of this web. In addition, if the humans were supporting in the development of the web then this would help them in the development of the human life on earth whereas if their activities were destroying the ecosystem this would result in the destruction of their own life. Due to increase adverse affects of the human activities on the environment, it is resulting in the extinction of various species of flora and fauna on earth. The extinction of one specie would affect the life of other species living on earth and thus gradually all the species would extinct and so the humans. Therefore, the other important environmental issue associated at the global level is the loss of the biodiversity. The human activities such as the excessive use of the inorganic fertilizers in agricultural activities, destructive mining and fishing activities, etc. and other activities which causes the air pollution, water pollution, reduction of the forests, soil erosion, land pollution, etc. would cause the extinction of the various species on the earth. Already several species are extinct in the nature and this is resulting as the obstruct in the treatment of the various diseases caused in the humans. As a result, the government of different countries and the world as a whole are focusing on evaluating the ways by which the air, water and land can be made pollution free and maintenance of the soil and other natural resources to save the biodiversity. There are various species that plays an important role in the ecosystem and the extinction of various such species hurdles the treatment of various heath diseases. There are various factors, which need to be focused on for the conservation of various species of the flora and fauna on the earth such as detoxification of the environment, efficient and effective ways for the decomposition of the wastes, pollution free air, water and food. In addition, organic fertilizers must be used in the agriculture farming; fish farming must be done for controlling the adverse affects of the fishing occupation, control over the emissions of the green house gases in the environment, etc.

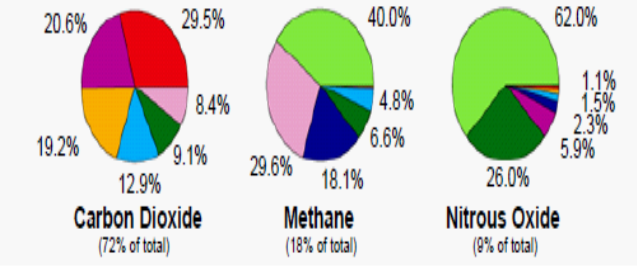
One of the major issues associated with the environment at the global level is the global warming. The global warming is the result of increasing surface temperature of the earth and usually is the result of the excessive use of the fossil fuels (by burning of the fossil fuels) and excessive emission of the green house gases. The global warming is rapidly increasing and in turn various adverse affects associated with the global warming is increasing round the globe. There are various adverse affects of the global warming such as increasing temperature, melting of the glaciers, etc. These adverse affects are not only observed on the nature but also on various species of the flora and fauna as hundreds of species of flora and fauna is extinction and some other species are reducing due to global warming. For instance, the reduction of the 33 per cent of the population of the Adelie penguins in the Antarctica is been noticed. In addition, the 20 per cent to 30 per cent of the reefs of the world is extinction (Anand, 2013). The factors that causes global warming are different in different countries i.e. in under developing, developing and developed countries. In addition, the contribution of the different countries is different in the green house gases emissions. In addition, there are variations in the contribution of the green house gases emissions based on the sectors. For instance, the annual emissions of the green house gases can be measured based on the emissions by per sector. In the year 2012, it can be observed that the power station sector is the one, which resulted in the highest emission of the green house gases i.e. 21.3 per cent. The disposal and treatment of the waste is the sector which had resulted in the least green house gas emissions and i.e. 3.4 per cent. The industrial processes, transportation fuels, agricultural by products, fossil fuel retrieval, processing and distribution, residential, commercial and other sources and land use and biomass burning are other sectors, which had contributed to the global environment issues by emitting 16.8 per cent, 14.0 per cent, 12.5 per cent, 11.3 per cent, 10.3 per cent and 10.0 per cent respectively (Anand, 2013).



(Anand, 2013)

There are various gases included n the green house gases like carbon dioxide, methane and nitrous oxide. The ratio of emission of these gases is varying with the variation in the sector. However, the total of all the sectors had emitted approximately 72 per cent of the carbon dioxide and waste and disposal treatment sector had not emitted the carbon dioxide gas (Hulme, Jenkins, Lu, Turnpenny, and Mitchell, 2002). The 18 percent of the Methane was emitted by the above-mentioned sectors but power station, transportation fuel and industrial process are the sector that had not emitted the methane gas. The 9 per cent of the total emitted green house gases was the nitrous oxide however the fossil fuel retrieval, processing and distribution is the sector which had not emitted this gas (Anand, 2013). The power station sector is the one, which had contributed to the maximum emission of the carbon dioxide in the atmosphere i.e. 29.5 per cent and least was made by the fossil fuel retrieval, processing and distribution sector. The maximum amount of methane was emitted by the agricultural by products i.e. 40.0 per cent and least was emitted by the residential and commercial sources i.e. 4.8 per cent.

The agricultural by products sector is again the one that had contributed to the maximum emission of the nitrous oxide in the nature i.e. 62.0 per cent and the power stations i.e. 1.1 per cent emitted least of the nitrous oxide (Anand, 2013). These figures can better understand by the following pie charts where the sectors are represented by the same colour code as in above pie chart.



(Anand, 2013)

II. DISCUSSION

From the above discussion it can be analyzed that maximum amount of the greenhouse gas emission is consist of the carbon dioxide. The Methane is though emitted by different sectors in less quantity but it is double to the total emission of other greenhouse gas emission in the environment. The nitrous oxide is the third maximums emitted greenhouse gases and rest all the emitted gases are just 1 per cent of the total green house gas emission. The community of the environment had recognized that the temperature of the earth is increasing and the acceleration of the increasing temperature on earth is even more than its actual estimation and this is an alarming situation. The planet is facing the highest temperature than ever before in the past millennium. The increasing temperature is expected to result in the occurrence of adverse effects such as coastal flooding, climate changes, mass extinctions and spreading diseases. Due to increasing sea level and other water sources level many small islands had entirely merged in the water with no sign of their existence, the climate change is resulting in severely high temperature in summers, severely low temperatures in winters and heavy rain falls in rainy season. The increasing use of the carbon dioxide is resulting in acceleration of the global warming. The community of the environment are trying to control the emission of the carbon dioxide from different sectors such as power stations, transportation fuels, etc. Some of the factors that lead to the maximum emission of the carbon dioxide such as the increasing use of the vehicles and other transportation systems, the use of such factors must be reduced but they are developing as the basic requirement of the life in some of the communities of the developed and developing countries. The according to the data collected and analyzed by the Dr. Hansen (2001), director of NASA (Goddard institute of the space studies) that the accelerated main cause of global warming is not the increasing emission of the carbon dioxide. Dr. James Hansan is also called as the grandfather of the theory of the global warming (National Aeronautics and Space Administration, Goddard Institute for Space Studies, 2005). Hansan (2001) argues that though the maximum amount of the total emission of the green house gases, by the human activities, is the carbon dioxide i.e. approximately 72 per cent to 73 per cent. However, the amount of the carbon dioxide emission in the atmosphere is the most but it is not the major cause for the global warming. Instead, there are several other green house gases like methane and nitrous oxide are more powerful and therefore are the major cause of the global warming. These powerful green house gases are capable of trapping the heat and does not release the heat as a result the surface temperature of the earth increases resulting in the global warming. The scientific reason that supports the argument that the carbon dioxide is not the major cause for the global warming is that the vehicles such as cars and power plants emit the carbon dioxide. But, these sources of the carbon dioxide emission also produces the aerosols and aerosols has the cooling effect on the surface of the earth. Therefore, the carbon dioxide cannot be the major cause for the global warming as it is by product is the aerosol, which eliminates or reduces the effect of the carbon dioxide in the global warming. The community of the environment due to its adverse effect not widely and commonly accepts this argument such as industries may use it as an excuse for polluting the environment. However, the aerosol does not remain in the environment for a longer period as compared to that of the carbon dioxide therefore, the aerosols are only able to reduce the effect of the carbon dioxide and in the long run the carbon dioxide also contribute to the global warming but not in the ratio as it is emitted. Therefore, as the carbon dioxide remains in the atmosphere for a longer period therefore, it is very essential to control the carbon dioxide emission in the atmosphere. In effect, all the green house gases other than the carbon dioxide are responsible for the global warming, the planet is currently experiencing. Thus, to control the global warming in the long term the emission of the green house gases need to be controlled.

The most important and adversely effective green house gas is the methane and is the second largest gas after carbon dioxide that is widely emitted in the environment. In addition, the methane is the gas, which is emitted twice the times of the other green house gases emission other than carbon dioxide. However, the percentage of methane gas emitted in the environment is much less than the carbon dioxide but the effect of this gas on the atmosphere is 21 times more than the carbon dioxide. Therefore, emission of the methane must be control to control the global warming (Hansen, 2001). The methane is highly emitted by the human activities such as the agriculture as in the agricultural activities the methane is emitted as the by-product. In addition, some of the countries like India are the agriculture-based country and as a result emits maximum of the methane gas in the environment. The other major sources of the emission of the methane gas are the coal mining, landfills and animal agriculture. In the agricultural sector, the animal agriculture is the one that lead to the emission of more than 100 million tons methane per year. The emission of the methane in the environment would increase in the coming years as the trend of consumption of meat is increasing and this in turn would led to increase in the animal agriculture thus, increasing the methane emission in the atmosphere (Harrabin, 2007). Out of the total methane emission in the atmosphere, the maximum i.e. approx 85 per cent of the methane is released by the digestive process of the livestock. The untreated animal waste produced from the animal agriculture is the second source such as lagoons that produces about 15 per cent of the methane in the agricultural sector.

The animal agriculture is also a source of water pollution in the developed countries like United States. Therefore, the awareness about the global warming must be spread round the globe and about the practices such as vegetarian consumption must be promoted to control the methane emission in the atmosphere, and this will help in conquering half the way in the reduction of the global warming (McCarthy, Canziani, Leary, Dokken, and White, 2001). In addition, as the methane remains in the atmosphere for only eight years therefore, controlling the methane emission would result in effective control of the global warming and this can be done by de- motivating the practices of the animal consumption. The reduction in the animal practices then would restrict the animal agriculture and thus methane emission would be controlled in the environment and thus would restrict the global warming. There are various controversies associated with the controlling of the emissions of the green house gases such as carbon dioxide and the methane as some of the green house gases are beneficial for the environment. For instance, the reduction in the emission of the methane in the environment would affect the formation of the troposphere layer in the atmosphere and that in turn would influence the human health and agriculture as this layer controls the pollutant that can damage the agriculture and human health.

III. CONCLUSION

The temperature imbalance is the major cause of the adverse affect of the global environmental issues and the temperature is increasing at a fast rate. The major reason for the increasing temperature is the global warming and the changes in the climate. In addition, there are several adverse affects of the increasing temperature such as the Tsunami, soil erosion, melting of the glaciers and other natural disasters. The major cause of all these global issues is the excessive emission of the green house gases such as carbon dioxide, nitrous oxide, methane. There are various sources of the green house gases emission and to control the global warming these sources need to be restricted against the emission of the harmful gases. Nevertheless, the emission of the green house gases cannot be restricted completely and as they are beneficial and required in the development of the global environment. However, the excessive emission is harmful and must be controlled else, it would disturb the complete ecosystem. The effective steps for the efficient control over the global issues need to be taken in priority as the adverse impacts of these issues can be seen in different parts of the globe in various forms like climate change, merging of teh coastal areas and islands, extinction of the species, etc.

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