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Strategies to overcome the problems of global warming.

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Abstract

Global carbon emission is the main source of global warming. Due to lack of implementation of proper planning and techniques for the reduction of corbon emission, now a days global warming is a global matter of concern. Although different countries have adopted so many strategies to overcome the problem of carbon emission. In this reference, our country has started roof top solar panel scheme to enhance dependency upon renewable energy resources and promote clean energy based green hydrogen mission to overcome the dependency upon fossil fuel and to fulfill the target of zero carbon emission. Apart from all these, we have to increase our forest cover in coming years because forest are the carbon absorber. Establishment of biorefinaries and ethanol production from the remains of various crops may also be innovative approach to replace fossil fuel based products. Nagar van yojna, green credit programme, panchamrit mission and many other steps are also initiated by our government to mitigate the problems of carbon emission and global warming.

Keywords: Carbon emission, Solar panel, Renewable energy, Clean energy, Forest cover, Biorefinaries.

Introduction

We have been shifted in the era of global boiling from global warming, due to globally emitted carbon which became the major issue for the floral and faunal biodiversity and their survival. So, it is necessary to review the current status of the global warming and its impacts on various aspects of the ecosystem, and steps to mitigate and overcome this global problem.

Finding of so many researches suggest that components of Earth's atmosphere has been continuously changed due to irresponsible human activities. Tons of CO_2 is being released due to swiftly increasing industrialization of developed and developing countries in last few decades. Apart from CO_2 other green house gases also contributed in the environment by human and industrial activities which continuously increasing global temperature. Now a days, term global boiling is used in place of global warming because of extreme temperature (Amnuaylojaroen 2023) due to rise in CO_2 and other greenhouse gases which results in the rise of oceanic water level because of the melted mountain glaciers that may lead to ecological imbalance, there are so many glaciers has been in melting condition which are a cause for concern.

Contributing factors of global warming

(A) Industrial emission: Global industrialization enormously increased the carbon level. CO_2 and other greenhouse gases getting released through industrial activities (Moomaw, 1996). Industrial emission is also a leading source of carbon emission. It pollute not only air but water and soil too. Primary air pollutants sometimes combines other pollutants and they form secondary pollutants which directly harm the floral and faunal diversity. There are so many policies to limit the air pollutants emitted from manufacturing units but still the conditions are not properly favorable to mitigate the problems of air pollution through industrial emission.

(B) Vehicular emission: Number of motor vehicles increases due to over population pressure, pollution due to vehicles, accelerates air pollution. Apart from motor vehicles, released chlorofluorocarbons lead to reduction of the ozone layer (Kumar *et al.* 2021). High level of fossil fuel based CO_2 emission observed in 2022 (World economic forum, 2022). It is due to high level use of petrol and diesel in vehicles, generators and machines of various industrial units. Vehicular emissions include various gases which are directly responsible for green house effect it also include particulate matter and organic compound i.e. hydrocarbons. Bad

AQI of urban areas is mainly due to vehicular emission. Such emissions creates so many physiological problems in animals and plants.

Fossil fuels based electricity production (Shahzad 2015) also generates green house gases. Apart from carbon dioxide (CO_2), other gases like methane (CH_4) and nitrous oxide (N_2O) also related to green house emission, these gases released into the Earth's atmosphere through various activities. Increased concentration of these gases absorb radiations, due to that, radiations do not escape to upper layer of environment which leads to increase in temperature.

(C) Agricultural sources: Apart from industrial and vehicular emission, agricultural practices are also emitter of green house gases. Due to increase in population pressure, there is a need to increase in agriculture production and it is possible by the use of different types of fertilzers, chemical pesticides for the control of crop damaging biological agents and animal waste material for the improvements of crops, these all can be considered as a source of green house gas emission in agricultural practices (IAEA resources).Gases like methane, nitrous oxide also produced through agriculture based anthropogenic activities. Although green house gas emission can be overcome by the application of number of practices related to agriculture (Smith et al. 2008) and also by the use of products generated through agriculture waste. Apart from CO_2, CH_4, and N_2O, emission, agriculture sources are also emitter of NH_3, CO, and NO (Duxbury 1994). There are so many agriculture based technologies has been developed to mitigate the problem of green house gases which are emitting through agricultural practices.

Increasing green house gas emissions and shifting to global boiling

Concentration of green house gases increases due to industrial and vehicular emission. Scientists and experts are continuously trying to warn the resulting situation of global warming but rapid industrialization at global level and anthropogenic activities due to over population pressure and greed of economic growth now leads to global boiling.

Apart from direct effect of global warming on animals, plants and aquatic animal. At present we are facing the problem of seasonal imbalance and extreme effect of weather patterns. Impact of Global warming also affects population density of the vectors i. e disease transmitting agents (Khasnis & Nettleman 2005). Which are the transmitter of various type of viral and protozoan diseases.

Steps to overcome the carbon emission

It has been decided in Paris agreement and COP-21 to limit the carbon emission at global level so that increment in the temperature not more than 1.5^{o}C but surprisingly this limit will be crossed after few year. Carbon emission is the source of global warming, due to it we are facing so many environmental, seasonal problems. It creates several issues for health status of animals, plants and also affects our economy.

Mitigation means to control carbon emission by the implementation of policies, schemes at global level and also by awaking common peoples. Now a days its very urgent to reduce carbon emission and global warming for the survival of floral and faunal biodiversity of our earth.

Indian strategies to mitigate the problems of carbon emission

Government of India is always worried about conservation of nature and natural resources not only by awaking peoples but also by implementing various acts and laws to protect wild life and our forest. In Indian traditions worship of plants, different rivers and our earth is directly related to the conservation of environment but industrialization and irresponsible human activities continuously increases pollution in bioshphere. Therefore to overcome the environmental issues govt. of India has started so many missions, schemes which can contribute a large to protect our environment and fulfill the target to achieve net zero emission by 2070.

Solar roof top

Government of India has recently started solar roof top panel scheme and providing subsidy for the same to speed up green energy based technologies to overcome the problem of carbon emission. Solar roof top scheme promotes self dependency for electricity

production. Apart from this scheme, projects like Solar Parks and Ultra Mega Solar Power are also in progress to promote non fossil fuel based energy source.

Biorefinaries

Biorefinaries use biomass and produce valuable products for the use of human beings. Biomass is renewable (Fernando *et al.* 2006) ecofriendly, do not harm our environment, it should not be burn. As we know, burning of remains generated through various crops after harvesting increases carbon content and also creates smoky environment. To overcome this problem, Government of India has focused to establish biorefinaries in different cities of our Indian states to promote ethanol production from the remains of crops. It will be the milestone to mitigate the problems of burning of remains of various crops and it will be benefitted by several ways firstly farmers will get the price of crop remains and generated ethanol will be used for many purposes secondly carbon content will not increase in environment and AQI will not be affected due to the use of crop remains like *parali* in biorefineries for ethanol production.

Van mahotsav

As all of us know, trees are the absorber of CO2 and producer of oxygen through the process of photosynthesis. Plant cover can also reduce the problem of global carbon. India has to increase the forest cover upto 30% in coming years. Every year, we celebrate Van Mahotsava in 1st week of July and plant large number of trees. Plants not only clean the air but also conserve floral and faunal diversity by reducing the chances of habitat fragmentation which may arise due to deforestation.

Nagar van yojna

Launched in 2020 on occasion of world environment day to promote tree cover in urban areas. Vehicular carbon emission is the main problems of all urban areas specially in metrocities. This scheme definitely will become a milestone to overcome the problem of carbon emission and bad AQI as well. For the reduction of particulate matter in air and to improve the quality of air National Clean Air Programme (NCAP) has also been started.

National green corps 'Ecoclub'

This scheme has been started at school level to protect environment through the involvement of students who are attentive for the conservation of nature and natural resources and learned for the same by participating in various activities related to environmental awareness programme.

Green Credit Program (GCP)

This scheme has been started in 2023 to promote the afforestation and other activity related to sustainable development by awarding green credit to a person or NGO who are engaged for the same.

Panchamrit

It has been presented in COP 26, held in Glasgow and it was stated that, India will achieve 500 GW '**Non-fossil energy capacity'** by 2030, fulfill its 50% energy requirements from '**renewable energy'** by 2030 and '**reduce total projected carbon emissions'** by one billion tonnes from now to 2030 with the '**reduction of the carbon intensity of the economy'** by 45% by 2030, over 2005 levels and achieve the target of '**net zero emissions by 2070'** (PIB 2023).

Conclusion

With the development and implementation of so many policies to mitigate the problems of climate change by Indian govt., there are so many campaign like carbon credit trading scheme, National Mission for Enhanced Energy Efficiency and National Mission for a Green India are running to overcome the problem of carbon emission. The implemented schemes, missions and efforts made by government of India at national level for the protection of environment will definitely overcome the problems of carbon emission and global warming at large scale. Apart from all these, people should follow the concept of mission LiFE (Lifestyle For Environment). Small efforts of every person through their lifestyle in relation to save our Earth's atmosphere will create large change to mitigate the problems environmental issues.

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