

Q Define global warming. What are its cause and how it is a menace for world. Also discuss challenges and opportunities to counter global warming.

1- Introduction :

Global warming is a global issue which is deleterious not only for underdeveloped countries but also for developed states. There are multiple causes of global warming that includes deforestation, greater population size, vehicular emissions etc. They have resulted into climatic catastrophes and have also altered the weather patterns. Several steps have been taken to curb global warming however lack of financial and technological constraints, absence of super power in climate conventions are challenging. In this bleak picture, international organization and public awareness are the ray of hope.

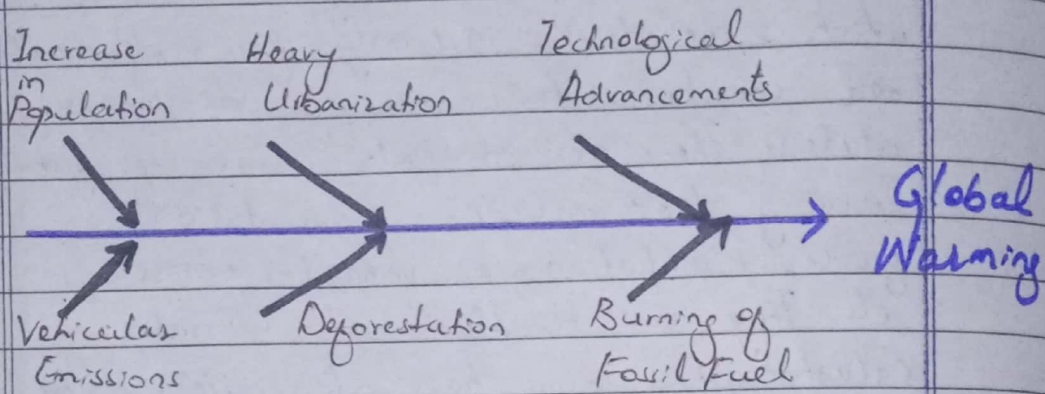
2- Defining Global Warming :

IPCC defines Global Warming as,
 "increase in average temperature of earth atmosphere over a period of time."

By delving into historical events, from ice age to industrial era there has been changing trends in global warming.

This shows that global warming is inevitable but the current scenarios have instigated the process. The impacts which were estimated in the late upcoming centuries have begun to appearing now.

3- Causes of Global Warming :



i- Increase in Population :

Increase in population is directly linked with instigated global warming. In the past decades, population was relatively smaller and it was easy to meet their demands. The current population of world is 8 billion, which puts pressure on world to meet their demands by exploiting natural resources.

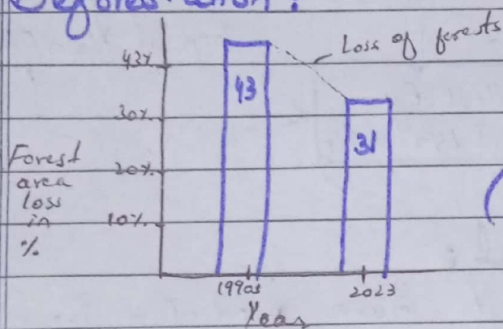
ii- Vehicular Emissions:

Emission from vehicles like oxides of Nitrogen, Sulphur and carbon contribute to increase in green house gases in atmosphere. According to an estimate, there are 4 million cars and 24 million motor bikes in Pakistan, which can be the direct source to contribute global warming.

iii- Heavy Urbanization and Technological Advancements:

According to UN estimate, 60% of population lives in cities which cause expansion of cities and loss of green covers. Further more, technological advancements like refrigerators and other electronics are source of emitting CFCs (Chloroflourocarbons) in the atmosphere which have increased the global warming.

iv- Deforestation:



(As per FAO and WB)

v- Burning of Fossil Fuels:

Burning of Fossil fuels provides another important reason for increase in global warming. Most of states in the world are dependent on petroleum products which are source of CO₂ production - a main greenhouse gas. Among top emitters, US and China take the lead.

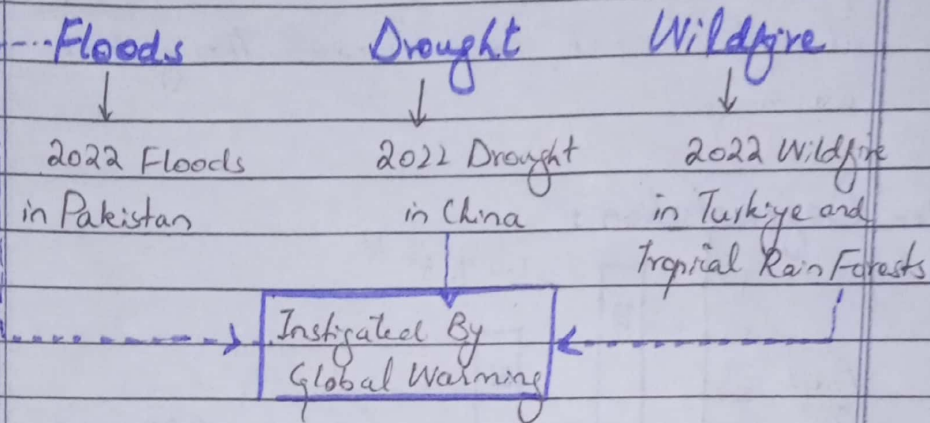
4. Impacts of Global Warming: Menace to the World

Global Warming has altered the life of human beings and other life forms on earth. The indicators of global warming are visible and the impacts are also witnessed. Some of the impacts

area as :

i- Climatic Catastrophes :

There has been increase in climatic catastrophes e.g floods, droughts, wildfire etc in the past decade.



ii- Rise of Sea Level :

Environmentalists have predicted the rise of sea level as an impact of global warming. As per NASA, Antarctica has shed 150 billion tons of ice in recent decade due to global warming.

iii- Melting of Glaciers :

Most of water is stored in the form of ice sheets however, global warming have ^{made} faster melting of glaciers. Among most vulnerable glaciers to global warming, one prominent example is Himalayan Glaciers. **UNF** predicted that even if significant efforts are made to curb the emissions, still most of glaciers - third of total glaciers - will melt by 2021.

iv- **Loss of Biodiversity :**

Global warming has also impacted the biodiversity, as most of species are cold-blooded and high temperature may cause them to extinct. Similarly, due to acidification of oceans, coral reefs population is estimated to decline by 2100.

v- **Disappearance of SIDS (Small Island Developing States) :**

Along with other issues, disappearance of small island developing states are also at risk of disappearance. For instance, with 1 meter rise in sea level, 12% of Bangladesh will submerge under water. Similarly, environmentalists predicted that Maldives will soon disappear from world's map.

vi- **Food Insecurity :**

Temperature trends has direct impact on crop yield and high temperature may reduce the production of crops. Thus, there is a risk that world may witness food insecurity. According to IPCC 6th assessment report published in March 2023 - if climatic conditions persist as they are now, Africa will be the most vulnerable country. It will lose 30% of its maize cultivation and 50% of beans cultivation.

v- **Challenges to Counter Global Warming :**

Currently, the world is witnessing

the catastrophic incidents caused by global warming and is taking different steps. However, there has not been a significant decline in emission of gases which have caused global warming. There are different challenges which have curb the reduction of global warming and are as follows:

i- Non-Binding Nature of International Agreements

Since 1992, Earth Summit, efforts have been made to curb the global warming by reducing its root causes. However, the problem lies here is the non-binding nature of these international agreements. For instance, non-annex countries under Kyoto Protocol had no legal bindings and since then, they have contributed enough to global emissions of CO₂. China and India are the prominent examples.

ii- Absence of Super Powers in Legal Environmental Commitments:

In 2015, a significant milestone in the history was achieved in the form of Paris Summit. Later on, in the era of Donald Trump, US withdraw from the agreement. Such incidents are concerning as these powerful states set examples for other states to fulfill or quit the commitments.

iii- Recent Military Exercises in Geopolitical Competitions

In the recent years, competition among the

states have been started. Every state wants to enhance its dominance in another state. This fierce competition involves joint military exercises i.e. among China and Russia, which contributes to emissions and eventually global warming. This is a significant concern for all around the world.

iv. Financial Constraints:

Global warming is a real phenomena which is happening all around the world. With its mitigation, adaptation is also required which needs funds. In COP-meeting, a ~~look at~~ climate fund was established for developing states which are vulnerable to effects of climate change. However, there are constraints in availability of funds to develop resilience and adaptation against global warming.

6- Opportunities:

In this bleak picture of concern and disappointment, there is a ray of hope that global warming will be mitigated and community will build adaptation as well. Some of the opportunities available are as follows:

i- Social Media is Addressing Issues:

In the recent years, social media has increased its influence in raising awareness among individuals. For example, a video regarding wildlife of Antarctic region, creates concerns for environmental management.

Similarly a Tiktok environmental activist "Alaina Wood" - garbage Queen - makes videos in raising awareness about impacts of global warming.

ii- International Forums :

Many international forums like United Nations is playing role in addressing environmental concerns. For instance the recent statement of UN Secretary General creates concern among the people :

"The era of global warming is over. It is era of global boiling."

Similarly, COPs are happening every year to set targets and to discuss achievements and failures of previous years. The most recent COP-28 was in UAE from 30th November to 12th December.

iii- Cut of Oil Outputs by OPEC :

Many oil producing states have engaged in cutting oil output, which also provides an opportunity to curb global warming. Among them, Saudi Arabia has announced to extend its oil output cut for 1 million per barrels per day till end of December 2023.

Good

7- Conclusion

In nutshell, it can said that global warming is a concern for everyone in the world. However, there is also a ray of hope that world is taking steps to overcoming its effects. A time will come, where people and other organisms will live their life peacefully.

You have addressed all points aptly
Good luck!