Review article:

Global Warming - Past, Present and Future

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Abstract:
From stone age to modern era man's quest for his comfort and happiness is never ending. In search of his comforts of life man has forgotten and ignored the consequences of pollution and environmental degradation caused by activities against nature. Global warming the term used to describe a gradual increase in the average temperature of the earth’s atmosphere and its oceans. It is slow steady rise in earth's temperature. Global warming has become perhaps the most complicated issue, most discussed issue facing world now a days. Planet is heating up fast, temperature is higher than years ago. Many scientists say that in the next 100-200 years temperature might be up to 6°C higher than it was before the effects of global warming were discovered. Earth beautiful earth throughout the history of earth, all living being lived in a harmony in a healthy environment. Man, trees, insects, wild animals, river, sea, sun, moon, stars lived in friendly, atmosphere interacting each other, enjoying with each other. Environment has played very important role in bringing all together providing fresh air, water, natural fruits and food. They never hurt each other. Beautiful green trees, greenlands, thickforests, tall and cool mountains, beautifalsky, sweet river water, salted sea water, birds melodious song, wild animal roar, wow what a heaven on earth. When season changes, beautiful birds come from different places, man goes and sees. Mother earth looks so beautiful with all her children, But suddenly something happens, sun is too hot, no one can tolerate birds are dying, no rain. No water to drink children is ill no pure air to breathe no pure food why mother earth is angry man’s activity against mother earth outcome is global warming

Key words- Green house gas, pollution, Kyoto protocol, ozone layer

Introduction:

Today global health is affected by human activities such as increased population, industrialization, urbanization, deforestation, unlimited use of vehicles burning of fossils fuel (cool and petroleum products) use of fertilizers for agriculture and underground nuclear explosions natural disasters. All these have spoiled the environment and resulted in ultimate change. This has very bad effecton our main basic determinants of health i.e. Air, Water, Food. We are using coal also. Burning all these has produced air pollution. This has increased carbon dioxide, nitrous oxide, methane, chlorofluro carbons, depletion of ozone layer, sulfahexa fluoride. Normally these gas trap sufficient heat from the sun to sustain life on earth. These prevent heat from radiating out, so they act like glass of green house. So they are called greenhouse gas. Greenhouse effect is when the temperature rises because sun's heat and light is trapped in earth's atmosphere. The heat and light can get through the atmosphere, but it cannot get out. As a result the temperature rises. Sometimes the temperature can change in a way that helps us. The greenhouse effect makes the earth appropriate for
people who live on without it the earth would be freezing. It would be freezing at night because the sun would be down, we would not get the sun's heat and light to make night somewhat warm. In other way it would be burning hot. During the day especially during the summer it would be burning because the sun would be up with no atmosphere to filter it. So people, plants and animals would be exposed to all the light and heat and one can imagine such situation. [1,2,3,4,5,6,7,8,9,10,11,12]

**History** - The term global warming was used first on 8th August 1975 in a science paper by "Wally Brocker" in journal science called are we on the brink of pronounced global warming"? The national academy of science first used global warming in 1979 paper called "Charney Report" Global warming become more popular after 1988 NASA scientists of climate, name James Hansen used. After him the term global warming was commonly used by the press and public.

**Causes of global warming** - We human are being acting against Mother Nature and mother earth. Earth is a beautiful planet. We are destroying mother earth with our activities. All our activities are against Mother Nature. More than 197 international scientific organizations agree that global warming is caused by human activities against nature, when we got freedom in 1947 we thought we will have 1/3 of our earth as forest. But today earth is left not even 10% is with forests. Major cause is too much of carbon dioxide in the atmosphere which acts as a blanket, trapping heat and warming the planet. This is because burning fossils fuels (coals, oil and natural gas)

**Deforestation** - Cutting the trees has become another biggest cause. It is not possible to list here that entire trees do for human being. Trees have been worshipped for ages in different cultures. Indian mythology contains about the "kalpavriksha" it is wish fulfilling divine tree. Trees are holy and worshipped in many parts of India and world. Trees and forests give shelter for indigenous communities and diverse flora and fauna. Trees provide material for construction, fuel for cooking & heating fruits, seeds roots, leaves branches for medicines. Most important role of trees is moderating the climate. Trees absorb carbon dioxide remaining and storing carbon in their tissue (Photosynthesis) and releasing oxygen back in to atmosphere. They also absorb odors. This is one reason public parks and gardens provide a refreshing air. Trees cool their surroundings by providing shade, release water vapor through their leaves, they can reduce cooling cost by half, reduce electric bill. Trees also help to hold soil and reduce storm, water run off. Trees also act as wired breaker. Protect people, animal, property against strong wired, sand and cold. They prevent desertification psychological value of trees are not overlooked patients with views of free from their windows heal faster; seeing trees, nature reduces mental fatigue reduces stress. Computer worker are asked see green trees and greenery in between their working hours. This improves vision and protects vision too.

**Release of Methane and Nitrous oxide** from agricultural activities -Methane is produced by microbes in natural wet lands, rice paddies, digestive tracts of farm animals, cattles, and sheeps.

**Nitrous oxide** - This is produced when nitrate and ammonium (in human produced fertilizer) break down in the soil.

**Chlorofluorocarbons** - CFCS- Entirely of industrial origin. AC, Refrigerators. Contribute to main destruction of the ozone layer.
**Water Vapor** - Most abundant green housegas, but acts as feedback to climate. Water vapor increases as earth’s atmosphere heats up. Does some feedback mechanism? Other gases perfluorocarbons from paint textile, and aluminum production.

**Sulfur hex chloride** from electric industry, rubber factory.

**Dioxin** is another dangerous product, which is produced by burning plastic.

The earth gets energy from the sun in the form of sunlight. The earth surface absorbs some of this energy and heats up. The earth cools down by giving off a different form of energy called infrared radiation. But before all this, radiation can escape to outer space. Greenhouse gases in the atmosphere absorb some of it, which makes atmosphere warmer. And this makes earth surface and ocean warmer too. Natural greenhouse gas effect has its own natural way. But man made greenhouse gas effect is harmful to human beings and to surroundings.

**Effects of Global Warming**

Even slight rise in global temperature may give rise to very bad effect on human health especially children and old age persons. Most obvious effect is that glaciers and ice caps melt faster than usual. This gives rise to increase in sea level and dilution of sea water.

1) Glaciers and Icecaps cover about 10% of the world’s land today. They have 75% of world’s fresh water. If this starts melting then sea level will rise. This leads to flood in the coastal area and causing homeless to millions of people and forced migration, epidemic of communicable diseases mental stress climate refugees. Most of us depend on glacial melt water for drinking, irrigation and electric power. Rapid loss of these glaciers will lead to worst conditions of human beings.

2) Hydrological changes – These changes lead to or no drinking water, no agriculture. So leads to lack of fertile land.

3) Air Pollution – This gives rise to allergies respiratory tract diseases, infection diseases. Historical movements are destroyed. Fog formation, health problems are more in young children & old age people. (Lack of immunity)

4) Sulphur oxide and Nitrous oxide both come from industry will combine with oxygen and moisture of air and from dilute mixture of sulphuric acid, nitric acid in clouds, when acid rain falls on earth it results in destruction of crops, deforestation destruction of marine life, aquatic life.

5) Effects of Ecological disturbances include more and more of natural disasters. More vector born diseases, emerging and reemerging diseases and destruction of coral reefs.

6) Ozone Depletion – Normally ozone layer is barrier to harmful effect of ultraviolet rays. Depletion of ozone layer leads to more ultraviolet rays on earth give rise to skin cancer and cataract.

Dioxin is the most dangerous produced. It is produced by burning plastic. Somewhere in Central America chemical is mixed with sea water than hurricane comes. These go to land and gets absorbed and get mixed with river. Somehow this may go to North Pole. These are consumed by polar bears and now are having bad effect on gentile tract. This may lead to permanent disappearance of polar bears.

**Impacts on health**

According to WHO following are the health effects on human beings-

23% of all global deaths are linked to the environments. 12.6 million deaths rear.

- 3.8 million in south east Asia region
- 3.5 million in western Pacific region
2.2 million in Africa region
1.4 million in European region
854000 in eastern Mediterranean region
847000 in the region of America

(World health organization environmental health)
Land degradation—it is caused by human activity. It is more in this century. Over cultivation, over grazing, forest destruction, urbanization, draughts. Desertification is type of land degradation by which fertile land becomes desert. As land degraded desert expand. Food production is reduced. Water sources dry up. People are forced to migrate. Increased threats of malnutrition, more water born and food born diseases, due to lack of poor hygiene & lack of clean water, more respiratory diseases caused by polluted air, spread of infectious diseases due to migration.

Who is worst polluter? Who are sufferers?
Developed countries are the worst polluter like United States of America, Russia, Japan

- Approximately 55% of carbon emission is produced by 15% of the population.
- This is going to be increased by another 50-100 years.
- The effects of climate change are mainly from industrialized and developed countries.
- But sufferers are underdeveloped and developing countries. Who are least contributors of the problem?
  - The population group that are sufferers are young, old and malnourished group and medically infirm & socially poor group.[13,14,15]

KYOTO Protocol
United Nations secretary called the climate changes as biggest changes of 21st century.
To consider worldwide cooling of earth on 16th Feb 1997, Kyoto protocol was adopted in Japan.

As an international agreement for industrialized countries to (cut down) reduce their greenhouse gas emission at least 5.2%.
Whoever will not adopt will have to pay penalty.
It was supported by 141 countries.
Bycotted by USA.
34 countries signed.
If committed country fails to reach target it can do by buying clean development mechanism (CDM) from low emission nations.
It comes into action in 2005.
1st period was 2005-2012. Most of the nations have failed to fulfill rule.
The second commitment is from 2012-2016.
Copenhagen summit was held from Dec 7-18 2009.
It was to make sure that rich nations reduce GHG emissions and provide finance and technology to poor nations.

What We Can Do
What we can do to prevent global warming? Is a big problem in front of human being today? It is not so easy to answer this question. We have to take action immediately.

Think Globally Act Locally (WHO theme 1990)
We all have to adopt this in our life,
- We have only one beautiful planet earth, mother earth.
- It is high time now we have to protect our mother earth.
- Educate people, public, parents, and children. Conduct awareness campaign.
- Plant more trees.
- Try to save trees.
- Use ecofriendly electrical cars.
> Save fuel.
> Use wind mills for power.
> Use of solar energy.
> Use of ecofriendly bicycles.
> Short distance cover with walk.
> We can use email instead of papers.
> Encourage for biogas.
> Ban on plastic which is causing lot of problem on earth.
> Proper waste disposal.
> Rain water harvesting.
> Save Himalayyas.
> Stop industrial waste mixing in river, including other waste.
> Reduce nitrogen based fertilizer.
> Animal manure should be dried if not if releases methane gas.
> Recycling water.
> Desalination.
> Build sea walls and surge barriers.
> Create wetlands against sea level.

Some scientists are working to store carbon dioxide underground. This is called carbon sequestration.

Future Changes - Climate Changes - Will differ from region to region. Anticipated effects include-

- Rising global temperature, rising sea level, changing precipitation, increase in deserts in subtropics, retreat of glaciers, permafrost, and sea ice. Other effects are extreme weather conditions include heat waves, draughts, heavy rain fall, floods, ocean acidification, speciesextinctions, effect on food security, because fall in crop yields, increased poverty and migration.

Mitigation—Adaption-. Get adjusted to rising temperature. Climate engineering or Geo engineering—Is modification of climate. Ex-Solar radiation management and CO2 removal. Scientific discussions, seminars, cme, add in media, public involvement in popular TV channel. Survey of public opinion- students, parents, teacher, doctors, engineers, and farmers.[16,17,18,19,20,21,22]


Conclusion

- If we save our nature, nature will save us.
- It is high time we all together understand and take action, precaution.
- We are forcing our nature to take action against us by doing activities against nature.
- We should stop all our activities against nature. Definitely it will save us.

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