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RESPONDING CLIMATE CHANGE AND ITS CAUSE AND EFFECT

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ABSTRACT: Renewable energy sources operate inherently without degradation, as they inherently replenish themselves. Some of the renewable energy sources include geothermal energy, solar energy, hydropower, bioenergy, wave and tidal energy and wind energy. Unfortunately, the planet is undergoing uncontrollable population development, which contributes to constant and unsustainable use of renewable energy sources. As a result, trade and investment have also grown internationally with individuals and states trying to meet their basic and economic needs. Over time, the excessive use of energy has resulted in a variety of problems, including the depletion of fossil fuels, greenhouse gas emissions and other environmental concerns.

Keywords: Climate change; Renewable energy; Biosphere; Green House Effects

INTRODUCTION

Climate change and global warming have been used interchangeably. That's what both explain the changes in the atmosphere of the planet. Though global warming focuses on the increasing average temperature of the earth, climate

change generally refers to changes in things like precipitation, wind patterns, and temperatures over a given period. Measured climate change could continue for a few years, decades, or even millions of years.



Climate change has been going on for as long as the world has existed. It occurs if Earth's climate patterns change and stay in place for a measurable period of time. This has expressed itself in particular in the natural cycles of cooling and heating. Until human causes began to alter the global environment, five key influences interacted with each other as climate change occurred. These five considerations shall include:

- Atmospheric (air)
- Biosphere (living)
- Cryosphere (ice and permafrost)
- Hydrosphere (water)
- Lithosphere (the crust of the earth and the upper mantle)

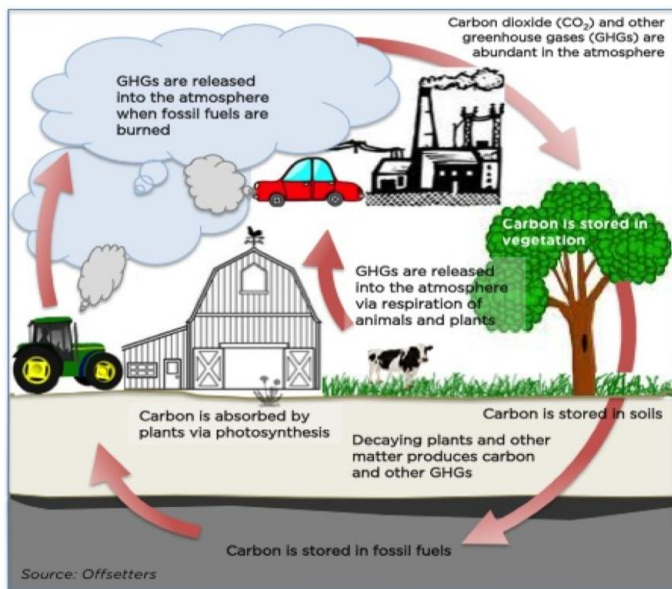
Objectives: To find out the solution as to why climate change is having its consequences and how to minimise it.

Methodology of analysis

The present research is of an explanatory cum descriptive sort. It depends on secondary data obtained from various journals, blogs, books and online posts.

What are the reasons for climate change?

The American Association for the Advancement of Science has confirmed that the scientific evidence is clear: global climate change, triggered by human activity, is happening now and is a growing danger to society.



Below are some of the ways people are driving climate change.

Greenhouse Gas

Greenhouse gases play a crucial role in the climate cycles of the planet. When the earth is struck by the sun's rays, some of the energy is absorbed, and the majority of the energy and heat is reflected in space. Greenhouse gases in the atmosphere are capturing the reflected radiation, redirecting it back to Earth and ultimately leading to global warming. Various gases play this part, including:

- Vapor of water
- Carbohydrate (CO2)
- Methane
- Nitrose oxide
- Chlorofluorocarbons (CFC)

Although some of these greenhouse gases, such as water vapour, are naturally occurring, others, such as CFCs, are synthetic. CO2 is emitted into the environment from natural and human-made sources and is one of the leading contributors to climate change. CO2 has been rising at an unprecedented pace and has the ability to remain in the Earth's atmosphere for thousands of years unless it is consumed by the ocean, soil, trees and other sources. However, as CO2 production has gradually increased, the Earth's natural resources to absorb it have also decreased. This is already happening in many ways, as food supplies vanish from factors like deforestation. Some reports also suggest that plants and soil will be able to consume less CO2 as food continues to warmpossibly worsening climate change even further.

Solar Events

Solar activity, as mentioned above, plays a role in the climate of the earth. Although the sun is going through natural cycles, rising and decreasing the amount of energy it contributes to the earth, it is unlikely that solar activity will make a significant contribution to global warming or climate change. Since scientists started to calculate the energy of the sun that reached our atmosphere, there has been no observable upward trend.

Agriculture

There are several important aspects in which agriculture has an effect on climate change. From deforestation in places like the Amazon to transport and livestock that are required to sustain agricultural efforts around the world, agriculture is responsible for a large portion of the world's greenhouse gas emissions. However, agriculture is also a sector that is making considerable progress in being more sustainable. As efficiency increases, less carbon is produced to produce more food. Agriculture also has the ability to serve as a carbon sink and will potentially consume about the same amount of CO₂ it emits.

Deforestation

Deforestation and climate change also go hand-in-hand. Not only does climate change increase deforestation by wildfires and other severe weather events, but deforestation is also a significant contributor to global warming. According to the Earth Day Network, deforestation is the second leading contributor to global greenhouse gases. Many individuals and organisations battling climate change point to reducing deforestation as one, if not the most important, problem that needs to be resolved in order to delay or avoid climate change.

Human Events

According to the Environmental Protection Agency, the most powerful contributor to climate change in the United States is the combustion of fossil fuels for power, heat and transport. Of these factors, transport in the form of cars, trucks, ships, trains and aircraft produces the largest percentage of CO₂ – worsening global warming and remaining a major cause of climate change.

Livestock:

Although we have already touched upon many of the issues of agriculture and deforestation, livestock in the form of cattle, sheep, pigs and poultry play a significant role in climate change. According to one report, 'Livestock and Climate Change,' livestock worldwide account for 51% of annual global greenhouse gas emissions.

Immediate effects of climate change

From melting glaciers to more severe weather patterns, people everywhere are starting to note the real impacts of climate change. Although several nations around the world are taking action on measures such as the Paris Climate Agreement, others are trying to do business as normal – pouring millions of tonnes of carbon into the atmosphere year after year. Although long-term effects remain to be seen, climate change continues to cause extreme weather, security and economic problems on a global scale.

Extreme weather conditions

Changing weather is probably the most visible effect of climate change on the average citizen. One explanation for this is that extreme weather events may have a financial impact. According to the National Climate Assessment, extreme weather events will continue to rise in frequency and severity as climate change continues to occur. Extreme weather impacted by climate change includes:

- Stronger storms and hurricanes
- Thermal waves
- The wildfire
- More floods
- Heavier drought

Security & Economic Challenges

The study claiming that climate change was a significant and imminent danger to national security. According to former Defence Secretary Chuck Hagel, rising global temperatures, evolving precipitation patterns, rising sea levels, and more severe weather events will exacerbate the challenges of global instability, hunger, poverty, and conflict.

Furthermore, climate change is expected to pose economic problems in many areas of the world. Some reports that the US already spends about \$240 billion annually due to human-caused climate change, and potential costs are estimated to be even higher. However, placing an exact figure on the direct costs of climate change is daunting when you consider the immense costs of destroying natural resources, such as clean air and water.

Long-term effects of climate change

The long-term effects of climate change will be utterly catastrophic for the world and for those who work on it. If the planet continues on its current course, it is inevitable that we will continue to see growing impacts on daily life.

Education

There are several aspects in which climate change may have an effect on human health. Depending on age, place and economic status, climate change already impacts many people's health and has the potential to influence millions more. According to the centre for Disease Control and Prevention, the health threats associated with climate change may include:

- Heat-related illnesses
- Extreme weather accidents and deaths
- Asthma & cardiovascular disease caused by air pollution
- Respiratory problems caused by increased allergens
- Diseases of low water quality
- Instability of water and food supply

Negative Environment Effect

Ecosystems are interconnected networks of living organisms that help to sustain all kinds of plant and biological life. Climate change is now altering seasonal weather patterns and affecting the delivery of food to plants and animals around the world, possibly causing mass extinction. Some reports suggest that approximately 30% of plant and animal species are at risk of extinction if global temperatures continue to rise.

Water & Food Assets

Climate change will have a huge effect on the availability of food and water. Extreme weather and elevated temperatures will continue to reduce crop production and increase demand for water. With food demand predicted to grow by nearly 70 % by 2050, the problem is likely to get worse.

Rising levels of the sea

Growing sea levels will have far-reaching impacts on coastal cities and ecosystems. Increased ocean temperatures and

melting ice sheets have gradually led to rising sea levels on a global scale. At current rates, the National Oceanic and Atmospheric Administration predicts that sea levels will rise by at least 8 inches by 2100, potentially causing increased flooding and a reduction in ocean and wetland ecosystems.

Shrink Ice Sheets

Although leading to rising sea levels, diminishing ice sheets present their own specific set of challenges, including growing global temperatures and greenhouse gas emissions. Climate change has caused the summer melting of ice sheets covering Greenland and Antarctica to grow by almost 30% since 1979.

Acidification of the ocean

The ocean is one of the key aspects in which CO2 is consumed. Although at first glance it may sound like a net positive, the increasingly human-caused CO2 is driving the oceans of the world to their limits and causing increased acidity. As the pH levels in the ocean decline, shellfish have trouble reproducing, and a large part of the ocean's food cycle is disrupted.

Responding to Climate Change

Although the consequences of climate change may seem dim, there is still hope. By taking drastic steps to combat climate change, we may never see the worst of the consequences. Similarly, as the world adopts cleaner, more efficient energy solutions, millions of new jobs and billions of dollars of economic benefits will be generated. Here are several realistic ways you can combat climate change, including:

Applying Clean Energy

Changing our key sources of energy into clean and renewable energy. The solution could be solar, wind, geothermal and biomass.

Links to sustainable transport

Our transport strategies must be in line with environmental standards and reduce their carbon footprint. It is important to rethink our transport methods from the design stage to eco-friendly transport.

Anti-pollution of air pollution

There are several strategies available to avoid, regulate and minimise air pollution, in particular by reducing the use of fossil fuels and restricting emissions and waste from industry.

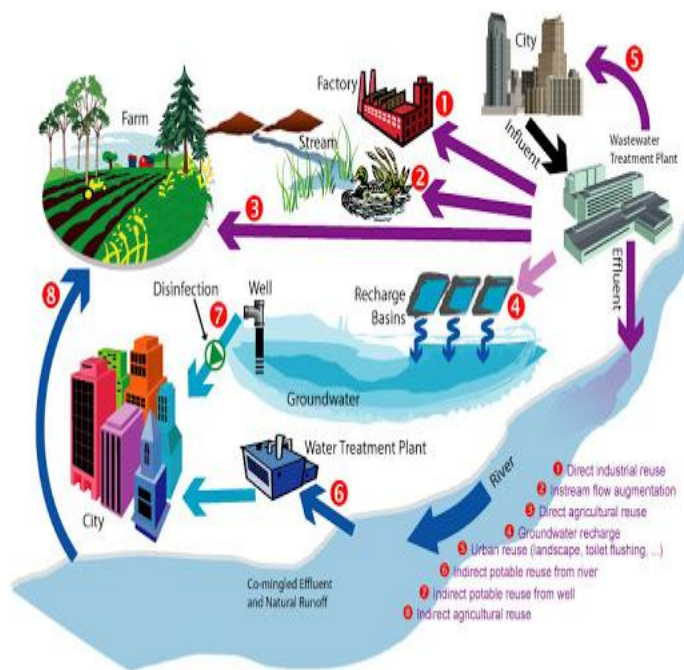
Reasonable Waste Management & Recycling

The best way to minimise waste is to adapt our manufacturing processes to our patterns of consumption. The method of recycling must also be taken into account in our consumption patterns.

Conservation of the sea and oceans

Oceans and seas are the largest storage facility for greenhouse gases and an outstanding life support device on this planet. Limiting overfishing, unsustainable construction practises in coastal areas and the consumption of environmentally friendly goods are now important.

Relevant Circular Economy



Using 3 R of the circular economy Reduce, Reuse and Recycle to drastically reduce our waste and prevent excessive production of new products.

CONCLUSION

The study indicates that climate change is possible and that the evidence is all around us. Though climate change is nothing new in the world, recent effects are clearly having a

devastating impact on countless people, places and wildlife. Climate change is taking place and is mainly due to human activities. Its impacts are starting to be felt and will escalate in the decades ahead, unless we take action. The growing rate of global warming, thanks to carbon dioxide and other greenhouse gas emissions from human activities, has contributed to climate change and environmental destruction, which, in turn, has led to significant challenges in terms of disease and human health. Many previously unknown diseases in some climatic regions are now making their way to these areas, due to changes in weather conditions. Furthermore, several diseases that were considered to be extinct are recurring in areas with altered climatic conditions that favour their recurrence. It is therefore necessary for stakeholders and decision-makers at industrial, governmental and international policy level to come up with strict and workable means of reducing greenhouse gas emissions to combat the spread of global warming and climate change, which has created devastating effects, especially among poorer nations. In addition, increased funding for adaptation and coping programmes and initiatives in affected areas should be given to mitigate the effects on human health and to reduce the spread of diseases. Study shows how climate change is and why it is significant, and to learn more about its causes, consequences, and realistic strategies for stopping it.

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