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A STUDY ON GLOBAL CLIMATE CHANGE

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ABSTRACT

Climate change is one of the major challenges of our time and adds considerable stress to our societies and to the environment. From shifting weather patterns that threaten food production, to rising sea levels that increase the risk of catastrophic flooding, the impacts of climate change are global in scope and unprecedented in scale. Without drastic action today, adapting to these impacts in the future will be more difficult and costly. This overview deals with the concept of Global Climate Change, the associated terms, causes, consequences, solutions and its potential health impact. It shows the need to act urgently if we are to avoid an irreversible build-up of greenhouse gases (GHGs) and global warming at a potentially huge cost to the economy and society worldwide. Therefore, addressing climate change requires an "unprecedented level of cooperation, not only between countries, but also between different levels of Governments, private sector and individuals.

Keyword: Global, *warming, climate, temperature* , change.

INTRODUCTION

The evidence of climate change is compelling: sea levels are rising, glaciers are retreating, precipitation patterns are changing, and the world is getting warmer. According to the Intergovernmental Panel on Climate Change (IPCC), the current rate of greenhouse gas emissions is likely to cause average temperatures to rise by 0.2˚C per decade, reaching by 2050 the threshold of 2˚C above pre-industrial levels. Recent evidence suggests even more rapid change, which will greatly, and in some cases irreversibly, affect not just people, but also species and ecosystems (Elizabeth et al., 2010).

Climate change indeed is real. Super typhoon Haiyan is the latest natural disaster that has also led credence to the reality of climate change. This sad occurrence hit land and devastated the Philippines. This record-breaking storm is the strongest storm in history to make landfall. It tore apart buildings and left entire provinces without power or communication. The 370-mile-wide storm packed winds 3.5 times as strong as Hurricane Katrina. Winds reached 195 mph and had gusts of up to 235 mph. Walls of water as high as fifteen feet swept over the country washing away towns on many islands and washed ships ashore where homes once stood. The U.N. says, "Around 920,000 people were displaced by the storm and a total of 11.8 million people have been affected. Officials said the deadly storm left more than 3850 injured and at least 77 people reported missing across the Phil ippines." (The Argo, 2013).

Climate change is a serious risk to poverty reduction and could undo decades of development efforts. While climate change is global, its negative impacts are more severely felt by poor people and poor countries. They are more vulnerable because of their high dependence on natural resources and limited capacity to cope with climate variability and extremes. Restoring and maintaining key ecosystems can help communities in their

adaptation efforts and support livelihoods that depend upon the services of these ecosystems. Moving towards low-carbon societies can help reduce greenhouse gas emissions, improving human health and well-being and creating green jobs. Climate change is a fact of life. We need to act urgently if we are to avoid an irreversible build-up of greenhouse gases (GHGs) and global warming at a potentially huge cost to the economy and society worldwide. Organisation for Economic Co-operation and Development (OECD) analysis suggests that if we act now, we have 10 to 15 years' "breathing space" during which action is possible at a relatively modest cost. But every year of delay reduces this breathing space, while requiring ever more stringent measures to make a difference. Current financial turmoil is not a reason to delay. Indeed, its macroeconomic consequences will be resolved in a relatively short time, after which growth will resume, while the consequences of inaction on global warming will continue to grow more and more costly over time. This study presents an overview of Global Climate Change with a view to help appreciate the concept, its urgency and to give an insight to the ways it affects society and the natural environment and proffering solutions.

THEORIES OF CLIMATIC CHANGE

The job of insolation is basic in climate and climatic methods. In this way most climate change speculations manage likely effects of adjustments in the world's imperativeness spending plan.

The most un-troublesome hypothesis expresses that any change in the sort and measure of essentialness transmitted from the sun causes changes. Expanded sun oriented radiation warms the air and achieved events, for instance, the frosty dissolving.

A couple of speculations dependent on an analyzing the amount of sunspots during more than two centuries uncovers their example of around 11.3 years, yet the period has been pretty much as short as 9 years and up to 16. Results of the 11-year cycle and optional cycles having lengths of 35 years, 80 years and different periods have additionally been proposed. In view of these a couple of relationships between's sunspot numbers and climate have been set up for unequivocal districts as it were. Changes in the hotness spending plan, the overall flow and precipitation designs on the earth can be seen due to the united effect of sunspot action and sun's revolution and the sun powered breeze. Paleo-climatologists have found relationships between's earth attraction and climatic changes, particularly those related with ice ages and the termination of species in the fossil record as the world's attractive field is known to be influenced by the outflows of charged protons by sun based flares during greatest sunspot periods.

There can be other possible reasons for changeable insolation whether or not the yield from the sun is viewed as consistent. ―Astronomical speculations consider five chief effects.

1. Changes in the point which the earth makes with the plane of the ecliptic. The slant point fluctuates slowly some place in the scope of 22.1o and 24.5 o during an example of around 41,000 years, probably influencing the seasons, temperature appropriation and the overall flow.

2. Changes in the suggestion of the earths circle time span 96,000 years. Coming with regards to varieties in the mean separation from earth to sun could influence temperatures on the planet.

3. Precession of the equinoxes, the normal change in when the earth is a given separation from the sun. At present the earth is closest to the sun in the Northern Hemisphere winter (around 3 January). Around 10,500 years prior the Northern Hemisphere winter came at a season when the

earth was farthest from the sun. Taking everything into account (which they never are), winters should have been colder and summers hotter than they are as of now. In the Southern Hemisphere the transform applies.

4. Shifting of the earth on its polar hub. This speculation, prescribed by Robert Hooke in 1686 to clarify tropical fossils in England, has been deserted by most climatologists for hypotheses dependent on plate tectonics and mainland drift, which likewise could represent obvious _polar meandering'.

5. Changes in the pace of the world's revolution on its hub, influencing the diurnal hotness spending plan and at last world climates.

Insolation gets influenced by the techniques of ingestion, reflection and dissipating in the outer uttermost spans of the environment. Its potential causes are known to be showers of brief development and time to time increment of volcanic debris. Debris layers in Antarctic ice show a time of unprecedented volcanic movement from around 30,000 to long term prior, during which temperatures diminished by around 3oC. In the front line period the ejection of Mount Tambora on the Indonesian Island of Sumbawa in 1815 jump started out an expected 150 km3 of debris into the air.

DEFINITIONS AND IMPORTANCE OF CLIMATE

Definitions of Climate some definitions of climate enunciated by eminent climatologists are given below:

Trewatha: "Climate addresses a composite of the everyday climate conditions and of the air parts, inside a foreordained region over a long time span. It is more than "normal climate" for no uniform meaning of climate is possible without enthusiasm for occasional and diurnal change and of the progression of climate scene created by adaptable barometrical unsettling influences. While in an investigation of climate accentuation might be given to the normal, still takeoffs, varieties, and phenomenal are likewise significant".

As per Critchfield: "the strategy of exchange of hotness and soddenness between the earth and air over a long time period achieve conditions which are classified "climate". Climate is more than a measurable normal, it is the total of air conditions including hotness, soddenness, and air improvement, cutoff points ought to consistently be considered in any climatic portrayal notwithstanding implies. examples, and probabilities".

Koeppe and De Long describe "Climate as an outline, a composite of climate conditions over a long time span, really depicted: it fuses subtleties of varieties limits frequencies, progressions of the climate parts which occur from one year to another. Especially, in temperature and precipitation, climate is the total of the climate".

Kendrew thinks that "'Climate is a composite thought, a speculation of the complex climate conditions from one day to another reliably - unquestionably no picture of it is at all genuine with the exception of in case it is painted of the seasons which are the truly observable elements. It is deficient to give basically the mean condition of any part".

G.F.Taylor states that "Climate is the mix of climate, and climate is the separation of climate. The

differentiation among climate and climate is Subsequently, for the most part of time".

C.W.Thomwaite has given a sweeping and orderly investigation of climate. He expands the degree of climatology when he recommends that "the investigation of the environment just as that of the world's surface from the situation of this request. This is so clear in light of the fact that every single attribute of climate is directed by the exchange of hotness, sogginess, and power between the world's surface and the environment". (Lai, 1999.pp. 6-7).

The Importance of Climate

Climate as the key to regional differentiation

As we know, geology is the investigation of the earth as the home of humankind, a definitive objective of topography is the consistent examination of the local grouped assortments, and the spatial varieties found on the earth surface. As such, topography focuses on a right and methodical evaluation of the between relationship among man and his current circumstance. If we talk about the between relationship among man and actual climate, we will without a doubt come to the end result that human culture was molded by the geographic effects it was introduced to. Furthermore, basic examination of varying ecological effects clarifies that climate is the most major and sweeping of the normal parts that control human existence.

Climate and human affairs

The climatic speculation of progress, as propounded by Ellsworth Huntington doles out a high spot to climate, which is viewed as commonly predominant and fundamental factor in the headway of human advancement.Many progressed developments in the past have grown up and flourished in different districts of the world having disparate climatic frameworks going from the hot. What's more, boycott en deserts of the Nile Valley to the incredibly cold high countries of Sweden. The fundamental factors that conclude life are wellbeing, climate, sustenance, illnesses, and people's social level and among this load of controlling elements climate includes the essential position due to its nearby command over the quality and amount of not solely man's sustenance, but of most of his different resources. Climate is for certain one of the foremost determinants of people's lifestyle through its effects on human occupations just as techniques for living and propensities. The climatic effects are three folds. First thing, climate has a prompt bearing on man's wellbeing and movement. Also, it has a solid underhanded anyway quick effect through sustenance and different resources. In conclusion, climate has been the most prevailing component in causing movements, racial mix, and normal determination. All in all, climate might be supposed to be a main consideration in the geological circulation of human headway.

THE INTERACTION OF CLIMATE AND ENVIRONMENT:

Some definitions of environment

The word reference importance of the word climate is "an including of outside conditions influencing improvement or advancement of people, creatures or plants, living or working conditions".

C.C.Park.: "Climate insinuates conditions which include man at a given point in existence".

A.Goudie: "The idea of the climate has. truth be told, accepted climate as the agent of actual parts of the earth wherein man is a significant factor influencing the climate".

K.R.Dikshit: "Climate is described even more thoroughly by others as an extensive point of view on the world as it capacities al any reason for time, with an immense number of spatial, essential and financial systems perceived by quality and characteristics of room and technique for conduct of abiotic and biotic designs".

While climate is seen in different ways with different points by different social events of people, yet it could be summed up that. "Climate is an indivisible enveloping and is comprised by the connecting structures of physical, organic and social parts which are interlinked separately just as with everything taken into account in heap ways. Actual parts (space, landforms. water bodies, climate, soils, rocks and minerals) choose the variable person of human natural surroundings its possibilities just as restrictions. Natural parts (plants, creature's scaled down scale living beings and man) comprise the biosphere. Social parts are basically man-made provisions which go into the creation of social milieu""

In another sense, climate is the total of the different circles that movement its effect upon itself and cooperate with different circles of climate. The different circles of planet Earth's current circumstance are Hydrosphere, Geosphere/Lithosphere. Environment and Biosphere. Nature as such endeavors to keep an environmental equilibrium. The wonder of upkeep of equilibrium has been perceived as Homeostasis. A condition of agreement is constantly seen between every one of the parts of climate. In the continuous events man has mechanically progressed generally, yet a particularly innovative headway has tested this phase of concordance of nature.

This moment, job has been basic since he has for the sake of innovative improvement manhandled the resources and harmed the climate at the disturbing rates. Thusly there has been a great deal of interruption of the working of regular habitat. Such an effect has been extraordinarily seen in developed existence where people have begun to acknowledge and address the indications of their off-base courses of action. While in the causing situation people have begun meager lang on this line and there has been creating worry of such hurtful effects.

The Impact of climate on Environment

Effect of individual climatic elements on human life

As we presumably know, climate is the rundown on the resultant of the multitude of complex climate impacts. The air temperature, weight, course and speed of wind, moisture, the measure of dimness and precipitation are presumably the main climate parts. Every one of these parts influences human exercises in its own specific way. It is favorable to focus consideration on a piece of these parts which are authentically identified with our physical and mental imperativeness, and which generally choose our wellbeing and satisfaction.

According to the viewpoint of both wellbeing and work, the best climate would be one in which the mean temperature once in a while falls underneath the psychological ideal of 38°F, or rises above the actual ideal of around 64°F.The ideal condition would be found where the mean yearly temperature is around 51°F. The extraordinary metropolitan networks of London, Paris, New York and Peking do have this mean yearly temperature. Practically every one of the economically progressed countries of the world have their mean winter temperatures not a long way from 38° F and the mean summer temperatures close around 64°F.

The overall moisture of air is additionally a significant climatic part. Everybody knows about the unsafe effects of the dry air during winter. Essentially, hot and moist air is similarly destructive. High temperature got together with high relative wetness produces steamy climate, which doesn't support either physical or mental work. Besides, relative tenacity and temperature are immovably related with our actual comfort and efficiency. The ideal temperature obviously controls the wonders of life from the most negligible exercises of cellular material to the most critical exercises of the human understanding.

Climatic conditions have complex bearing on soil, crops, vegetation, business, plant infections or more all. Human wellbeing For sure, even the outer layer of the land is changed generally by the activity of climatic parts. For instance, in sweltering wet climate districts, tacky landforms are interesting corresponding to those dry landforms where a dry blistering climatic condition exists. Likewise, the landforms of Polar Regions where climate is over the top will differentiate from the landforms of temperature and tropical locales.

Kendrew. a renowned climate Scientist, has appropriately commented that Climate is the most essential and far responding of the regular parts, which control life. As indicated by him. The vegetation of the earth is eagerly dependent on it. what's more, the variations in the creature domain are different. Eskimos of the snow bound Arctic area, the white races of the mild areas, and the Negros of the tropical downpour woods are generally aftereffects of the different climatic conditions. Thus, the effect of climate on human existence has been suitably commented by Papadakis that climate is awesome and the most noteworthy part of our indigenous habitat".

Effects of Climate on adaptation of ecosystem

The speed and extent of climate change influences the accomplishment of species, populace, and local area transformation. The pace of climatic warming might surpass the pace of movements in specific reach species, these species could be truly influenced or even vanish in light of the fact that they can't adjust. Some plant and creature species, (for example, imperiled species by and large) and species adjusted to limit specialties for which territory is intermittent and boundaries hinder or block relocations and normal frameworks (like coral reefs, mangroves, and other waterfront wetlands, grassland wetlands, remainder local prairies; montage eco-frameworks close to edges and mountain ridges; and biological systems overlying permafrost) could be unfavorably influenced by local climatic varieties.

Impact of Oimate on bio geophysical environment

Worldwide climate change will influence the bio-geophysical attributes of the seas and coast, changing their environmental design and influencing their capacity to support beach front occupants and organizations. Effects in the seaside zone will reflect nearby land, natural, and financial conditions inside a more extensive territorial and worldwide setting. A couple of times one distinctively react to short and long haul fluctuation and examples in ocean level, wave imperativeness, leftovers supply, and other convincing. Waterfront social class especially on low lying deltas, atolls and reef islands, face dangers of immersion, expanded flooding, and salt water interruption, with impacts on wellbeing and security, water supply. fisheries, farming, hydroponics, property, transportation joins and other framework.

Impact of Climate on Agriculture

Every one of the farming exercises rely upon climate; crops foster best, just when ideal temperature and

precipitation are free. Also, climate change might expand requests for water system from the horticultural division, and if these additional necessities are drawn from streams or springs, there will be an effect on hydrological and biological frameworks. Different kinds of yield examples can be seen due to the variable climatic example, crops from bone-dry districts would not be like that of sodden climate regions.

Indirectly, natural aggravations, air contamination, changes in sustenance and water supplies, and beach front flooding are largely instances of potential effects that might influence human wellbeing. How people and nature adjust to climatic change will choose how really it impacts human wellbeing. A couple of individuals and spots are likely going to be influenced more than others. By and large, penniless people and helpless countries are more opposed to have the cash and resources they need to adjust to hindering and treating medical problems. Little youngsters and old grown-ups will run the most raised risk.

OBJECTIVES OF THE STUDY

1. To study the concept of climate change.
2. To study the factors responsible for climate change.

CONCLUSION

Climate change is happening and it is caused largely by human activity. Its impacts are beginning to be felt and will be worsen in the decades ahead unless we take action. The increasing rate of global warming—courtesy of carbon dioxide and other green house gas emissions from human activities—have led to climatic changes and environmental degradation, which in turn have resulted to great challenges in relation to diseases and human health. Many diseases which were previously unknown in certain climatic zones are now finding their way to such areas, due to changes in the weather conditions. Further, many diseases that had been thought extinct are reemerging in areas with altered climatic conditions that favor their comeback. It is therefore important that stakeholders and decision makers at industrial, government and international policy levels come up with stringent and workable means of cutting down on green house gases emission to combat the spread of global warming effects, and the resultant climate change, which has produced devastating impacts especially among poorer nations. Further, there should be increased funding of adaptation and coping programs and projects in affected areas to minimize the impacts on human health and curtail the spread of diseases.

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