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SENSITIVE APPROACHES FOR GLOBAL CLIMATE CHANGE

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ABSTRACT----------
Climate changes, which were the talk of academic circles a decade ago, are now issues that people face. These impacts continue to negatively affect life. Problems such as food security; water problems, health problems, shrinkage of fertile lands are increasing day by day. The impacts of these problems will peak in the coming years. Therefore, preventive decisions must be taken and implemented as soon as possible. In this respect, the principles of preventive decisions, individual responsibilities, social and state responsibilities should be determined. Also, the requirements for continuous motivation in this regard should be determined.

KEY WORDS: *Climate change, Global warming, sea level rise, responsible, sustainability*----------

INTRODUCTION

Climate change and its effects such as, desertification, severe floods, hurricanes and melting ice sheets draw attention as the most common subjects we have heard in the media in last years:

In Spain, at least four people are dead after extreme torrential rains caused flooding in the southeastern part of the country.

In Brazil, at least 60 thousand animals and ten people are dead after a wildfire at Amazon Basin Forest.
In Poland, at the start of a two-week climate change conference in Katowice, U.N. Secretary-General Antonio Guterres says the issue is already a matter of life and death for many people and called for bold action to avert a catastrophic rise in temperatures.

People around the world are taking to the streets for "Fridays for Future" global climate strikes.
Severe floods in Cambodia have forced thousands of families to evacuate.
Monsoon flooding and landslides caused 78 people to die and 32 people to be lost in Nepal.
Alaska is disappearing slowly but surely.

A world that we collectively felt in 2016 as the hottest year in recorded history since 1880. When looking at decades' worth of data, the ranking of 2014, 2015 and 2016 as the hottest years reinforces the long-term trend of rising global temperatures. The findings were announced today in a new report from NASA's Goddard Institute for Space Studies in New York. Global average temperatures have increased by 1.4 degrees Fahrenheit since the first meteorological records in 1880. This trend driven by the increase of carbon dioxide levels in the atmosphere is the most urgent threat facing our entire species.

Australia's worst drought, Bangladesh floods, İncreased storm intensity in Atlantic, melting of polar glaciers, extended heat waves, Great Barrier Reef threats, life risk of polar bears and penguins are the result of global climate changes. Now, let's take a look and detailed elaborate at this issue of global climate change, the codes of which we have given above:

All-weather events such as temperature, rainfall, wind, and humidity take place in the air sphere called the troposphere, the lowest layer of the atmosphere that surrounds the earth and consists mostly of gas and steam. These are meteorological variables hourly, daily and weekly measured and it is indicated as the state of the weather. Weather is

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the changes we see and feel outside from moment to moment. It might rain in the morning and be sunny in the afternoon.

Climate is an average in the pattern of weather and at least 30 years of statistical description of the state of the weather system. So, the climate system is the usual weather of a place. Climate change is a change in the pattern of usual climate and occur over time scales from several decades to millions of years throughout geological chronology in Earth's climate. That's why to weather instantaneous changes in just a few hours in the atmosphere cannot be expressed as climate change. Climate change is related to long-term changes, and extremes in melting glacial, sea-level changes, desertification, deforestation, and land surfaces.

Outline the Causes of Climate Change

Global climate changes occur due to two main factors. The first is the natural factor and processes and the other is human-induced causes.

Natural processes that cause climate changes are generally the causes of long-term changes. Global climate changes naturally over time scales from thousands of years and longer. Changes in energy coming from the sun, changes in the composition or properties of the atmosphere, and changes in the physical geography character of the earth are the main natural factors.

Variations in the energy received from the sun are related mainly to natural changes. The energy coming from the sun, which is the main temperature source of the earth, is the ultimate driver of climate on Earth. However, energy from the Sun is not always the same, it is accepted as an average of 2.00 Cal/cm²/ minute at the upper limit of the atmosphere. The solar energy received by Earth depends on how much the Sun emits, how much energy the world absorbs, and the distance between Earth and the Sun. This value given in calories is the average of 1366 W/m² per year. Sunspots are one of the signs that allow us to understand the value of the solar constant. It was found that the number of sunspots decreased in cold periods, while it increased in hot periods. This is the "sunspot cycle". Sunspot cycles have been regularly numbered since 1755 and currently, the 25th cycle has been continuing. The movements of the earth are periodic, cyclical and variable. All of the changes seen in the earth's rotation and orbital movements have affected the radiation coming from the sun, and it appears as climate change. According to Milankovitch, all movements of the earth are not following a fixed axis. An orbit cycle is renewed over a period of 96,000 to 125,000 years. The axis inclination, which is 23° 30´ today, varies between 21°.8´ and 24°.4´ and is completed in 41,000 years.

The more sunbathing an area on earth is, the more energy it will receive. This is related to day-night lengths and clouding. The time and degree of sunbathing are short at night and in cloudy times.

Changes in the composition or features of the atmosphere are affected factors on climate change. The basic idea of these approaches is that the changes and losses suffered during the passage of radiation energy from the atmosphere generally cause climate fluctuations. The greenhouse effect that is frequently mentioned today affects the gas rates in the atmosphere and causes changes.

Increase some gases such as CO_2, ozone, methane, which make up the atmosphere and whose rates are different, cause in global climate changes. The change of gases can depend on natural or human factors. For example, gases emitted to the atmosphere as a result of natural volcanic activities in the geological process also caused climate changes.

Elevation, slope, and aspect properties affect the climate. The change of these topographic features will change the climate. However, it is more noteworthy in climate changes that the Pangea breaks down, disintegration, separation, and the continents slip and displace.

In addition to the natural processes mentioned above as the main factors causing climate change, it is not possible to ignore the anthropogenic processes that have an impact today. Earth's climate also has always changed under natural factors before the effects of humans. There have been eras when Earth's climate has been warmer or cooler than it is

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now, and these eras have taken thousands or millions of years. However, there are some remarkable differences between the changes in the climate today and those experienced in the past.

The global temperature has increased by nearly 1 degree (0.9 degrees Celsius) since the late 19th century. This increased value may seem very small, but given that the global temperature has not changed by more than 1.5 degrees from the Neolithic over the past 10.000 years, a one-degree increase turns out to be important.

Furthermore, a change was driven largely by increased carbon dioxide and other human-made emissions into the atmosphere.

Science is telling us that the impacts of climate change are happening now faster than the earth had lived before. Also, Earth's climate is now changing faster than at any point in the history of modern civilization.

Exceeding 8 billion population wants to live with fulfilling all their requests and for this purpose, it tries to use our world unlimitedly. The source of nutrition and shelter, which is the basic need of the increasing population, is the Earth as expected.

Thus, as a result of excessive requests and pressure on natural resources large forest areas disappeared, wetlands were dried and opened to agriculture, dense settlement tissues accumulated especially in coastal areas and were trapped in a narrow area called the city in the name of increasing population.

Human activities have influence climate by changing concentrations of CO2 and other greenhouse gases in the atmosphere, altering the concentrations of aerosols and altering the reflectivity of Earth's surface by changing land cover. These changes in land use such as cutting forests, wrong land use and wrong urbanization, and the use of more fossil fuels have caused changes in local or regional climate characteristics by changing natural albedo rates.

The flows of radiation in the atmosphere are very important in determining climate and its changes. The solar energy absorbed by Earth is returned to space as infrared radiation. In the process, it interacts with whole climate system components such as atmosphere, oceans, ice sheets, land surfaces, and its cover.

It should be first noted, the main gases that make up the atmosphere, nitrogen, and oxygen, do not interact with infrared radiation. However, aerosols and certain gases such as Carbon dioxide (CO_2), Ozone (O_3), Methane (CH_4), Diazoate monoxide (N_2O), Water Vapor present in smaller quantities absorb infrared radiation flowing upwards from Earth's surface, and reradiate the solar energy in all directions, including back downwards. The normal process is this radiation that has bounced off the earth's surface would escape into space. But as stated some gases and pollutants collect and trap the infrared radiation. By doing this they impede the outward flow of infrared energy from Earth to space and cause the earth to get hotter and occur global warming. This atmospheric case is called the 'Greenhouse Effect' and the gases that interact with infrared radiation are called greenhouse gases.

We need some heat, of course. Earth's surface would be about 33°C cooler without the greenhouse-like carbon dioxide, methane and water vapor retain enough heat from the Sun to sustain life on Earth. So, these gases keep Earth habitable. However, in the last two centuries, human activities have directly increased atmospheric concentrations of greenhouse gases and have broken off balance.

Why We Must be Sensitive to Climate Change?

"They lent to Great Alexander the power of Hercules, the wisdom of his foreheads, and the cunning of his knees like elephants" express Jungle Book author Rudyard Kipling. But even the mighty elephant will not live in this environment conditions like ancestors of themselves called Mammoths. Most people see today that the greatest threat to wildlife might be global warming, which might be the loss of habitat. In that case, going green isn't just about recycling, it's about conservation and protection.

Global warming, sea-level rise, drought, erosion, inundation, risks to infrastructure and increasing ocean acidity will pose major threats.

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Global climate changes are expected to change Earth's weather in dramatic ways. So, it seems that climate change and its effects will continue throughout this century. Unless we curb global-warming emissions, average world temperatures could increase by up to 10 degrees Fahrenheit over the next century.

However, because human-induced warming the weather some places would get hotter, while other places might have colder winters with more snow. So, more snow and ice will melt, and ocean and sea level would be rising higher nearly 1-4 feet by 2100. Sea level rise poses widespread and continuing threats to these region's agricultural and settlement areas. Rising sea levels will harm economic sectors such as fisheries and agriculture, tourism, and insurance. In coastal areas are particularly under the risk related to nutrition. It can be stated that with the sea level rising 50 cm, people reaching 200 million will be at risk. According to the current sea level, it's the level rise in global waters is 1 m. With rising, it is estimated that 0.05% of Uruguay, 1% of Egypt, 6% of the Netherlands and 17.5% of Bangladesh will be inundated. As a result of the increase in the expected sea level, the coastal flat areas will remain under saltwater and the coastal production areas will be damaged. As a result, millions of people will migrate from coastal areas and small islands.

Ocean and sea waters will continue to warm because the oceans take a very long time to respond to new conditions. Hurricanes and typhoons will become stronger and more intense on the oceans. The intensity, frequency, and duration of North Atlantic hurricanes and Pacific Typhoons as well as the frequency of the strongest hurricanes, will increase.

The best computer models predict the US, West Mediterranean nations and Brazil will be "hot spots" that will get extremes at their worst. These areas will likely suffer more extended droughts, heavy rainfalls, and longer heatwaves. Average Earth precipitation will increase, but some areas will have increases greater than the world average, and some areas will have decreases. More winter and spring precipitation are projected for North America, and less for the South, over this century.

In East Asia, such as Korea, and Chine, the expected consequences of global warming will be very bad. In particular, the tropical night's phenomenon which is already very bad will get much worse as the average nighttime temperature is expected to greatly increase. Extreme heatwaves, heavy downpours, and flooding will affect health, tourism, fishery, infrastructure, agriculture, forestry, transportation, air and water quality, and more in South Asia. Extreme heat, sea-level rise, and heavy downpours are affecting infrastructures like roads, rail lines, airports, port facilities, and energy infrastructure.

When heatwaves and their intensity, length, and occurrence increase; people die. For these areas, another negative impact will be much less predictable monsoon seasons. This will lead to more drought and at the same time more flooding, both of which will hurt food self-sufficiency. Sea level rise will cause East Asia to lose land like in south Asia. Extreme heat will affect firstly health, later water, energy, agriculture and more. In some regions, particularly the Equator and its surroundings the periods of high temperatures associated with heat waves contribute to conditions that lead to larger wildfires and longer fire seasons. The northern forests of the Earth will be more affected by the rising temperatures than tropical forests.

In a future in which heat-trapping gas emissions continue to grow, the length of the frost-free season will be increased. The growing season that affected ecosystems and agriculture is projected to continue to lengthen across the middle latitudes

Warming at 1-3.5 ° C over the next 100 years will cause middle latitudes to move towards ~ 150-550 km polar latitudes. Climate changes will force ecosystems and species to move from sea level to peaks, from the equator to polar, and vice versa. Firstly, droughts in the deserts will spread to their surroundings. Semi-humid areas will turn into semi-arid and semi-arid areas will become arid areas.

In this case, the geographical distribution and composition of ecosystems will be shaped according to the new conditions. Probably some of the species may adapt to new conditions and may continue to exist, while some may not adapt quickly enough. But it is clear that biodiversity will reduce. Observations, experiments, and models show that a 1C ° rise in global average temperature may affect the composition and function of forests. A climate change scenario

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for the 21st century shows that the most important impact will be on the species composition of 1/3 of the forests in the world.

Any change in precipitation will affect surface humidity, surface reflectance coefficient, and vegetation. This will affect evaporation and sweating and affect precipitation. In this way, the hydrological cycle may be subject to change. There will be a decrease in freshwater resources in the drought areas and their surroundings, and their quality will decrease due to the saltwater mixture near the coastal zone. Estimates show that downpours will increase the severity by regional. This shows that water infiltration to the ground will decrease and water floods will increase. Indirectly, this indicates that there will be great differences from the change of groundwater level to agricultural production. As a result of regional decreases in agricultural production, increases in hunger and malnutrition will be seen. All these conditions will create problems especially for children in the long term. Declining water supplies, reduced agricultural yields, health impacts in cities due to heat will affect food assurance.

Mountainous areas are under the influence of the deterioration caused by human activities. This change shows that hydrological systems and soil stability will be very affected due to the reduction of glaciers and snow cover in the mountains. The permanent snow limit in the mountains will increase even more. Ice that falls below this level will melt. Glacial regions will have the change to peri-glacial areas. Heatwaves everywhere particularly North Africa and Europe are projected to become more intense, and cold waves less intense everywhere.

Temperatures are projected to continue rising, and a reduction of soil moisture, which exacerbates heat waves, is projected for much of the center of the continents. The disease will be seen in effects due to the increase in temperature such as wildfire. Hot air also will allow insects and other disease carriers to spread. Different bacteria and viruses and outbreaks will occur according to the new environmental conditions. In this case, it will be possible to spread the organisms to high latitudes and longitudes. In areas under floods, diarrhea, tuberculosis, cholera and similar infectious diseases will increase. The number of insects and other disease carriers will increase and spread to new areas. Even today, there are 300 million malaria outbreaks that result in two million deaths each year. Approximately 45% of the world's population lives in climate zones with flies that pass malaria. Models predict that this rate will increase to 60% by the half of the next century. The incidence of asthma, allergic diseases, and cardiac respiratory diseases may increase. As global warming is thought to cause heart, respiratory tract and some other diseases, it is accepted that it may cause psychological disorders, diseases, and deaths from continuous hot weather, floods, storms, and other extreme weather events.

Biomes, agriculture, fisheries, and other ecosystems will be increasingly endangered. Increasing wildfire, insect outbreaks, and tree diseases will cause the trees to disappear in critic regions. Agriculture, tourism, timber, and other economic activities will be adversely affected, and the nutrition and fuel resources of the people will be damaged in many developing countries. Finally, some business lines will not survive, but some will expand their volume and even new business sectors will emerge. For example, the air conditioning industry can develop. Current benefits of warming include longer growing seasons for agriculture and longer ice-free seasons for shipping on the above 70 degrees latitudes.

People who search in a shelter, water, nutrition and health services will transport from uninhabitable sites, so this action will be exposed to huge migrations.

Basic Principles for Responsive Approaches

Sensitive approaches to global climate change typically involve strategies that acknowledge the complexities of the issue and prioritize inclusivity, equity, and sustainability. Here are some key sensitive approaches:

- *Equity and Justice:* Recognizing that climate change affects different communities and regions unequally, sensitive approaches prioritize equity. This includes ensuring that vulnerable populations are not disproportionately burdened by climate impacts or mitigation measures.
- *Community Engagement:* Involving local communities in decision-making processes fosters a more sensitive approach. Communities often have valuable knowledge about local conditions and potential solutions, which can enhance the effectiveness and acceptance of climate action.

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- *Interdisciplinary Collaboration:* Climate change is a multifaceted issue that requires input from various disciplines such as science, policy, economics, sociology, and more. Sensitive approaches encourage collaboration across these fields to develop holistic solutions.
- *Respect for Indigenous Knowledge:* Many indigenous communities have traditional knowledge systems that offer insights into sustainable practices and resilience strategies. Sensitive approaches value and integrate this knowledge into broader climate change initiatives.
- *Adaptive Management:* Given the uncertainties surrounding climate change, sensitive approaches emphasize adaptive management. This involves flexible, iterative approaches that can adjust based on new information and changing conditions.
- *Long-term Thinking:* Climate change requires long-term solutions that consider future generations. Sensitive approaches prioritize sustainability over short-term gains and aim to create enduring changes in behavior, policy, and technology.
- *Education and Awareness:* Building public understanding and awareness of climate change issues is crucial. Sensitive approaches invest in education initiatives that empower individuals to make informed decisions and advocate for change.
- *Innovation and Technology:* Embracing technological advancements and innovative solutions can accelerate climate action. Sensitive approaches encourage the development and deployment of clean technologies while considering potential social and ethical implications.
- *Policy Integration:* Effective climate action requires coordinated policies at local, national, and global levels. Sensitive approaches advocate for integrated policy frameworks that address mitigation, adaptation, and resilience.
- *Global Cooperation:* Climate change is a global challenge that requires collective action. Sensitive approaches support international cooperation and agreements to achieve ambitious climate goals and ensure fair burden-sharing.

By adopting these sensitive approaches, stakeholders can contribute to more effective and sustainable responses to global climate change, promoting a balanced approach that considers environmental, social, and economic dimensions.

Approaches to Individual Responsibilities

Before giving a comprehensive answer to this question, let us listen to the leading names in this field.
Al Gore, one of America's environmentalist politicians, focuses on what individuals can do to climate change:

"I want to focus on what many of you have said you would like me to elaborate on. What can you do about the climate crisis? What can you do? Reduce emissions in your home. Most of these expenditures are also profitable. Insulation, better design, buy green electricity where you can. I mentioned automobiles: buy a hybrid. Use light rail. Figure out some of the other much better options. It's important. Be a green consumer. You have choices with everything you buy, between things that have a harsh effect or a much less harsh effect on the global climate crisis. Consider this. Decide to live a carbon-neutral life. Those of you who are good at branding, I'd love to get your advice and help on how to say this in a way that connects with the most people. It is easier than you think. It is."

Famous artist, Leonardo DiCaprio, known for his environmental awareness, tries to draw attention to climate change at the ceremony he received his first Oscar.

"Making the Revenant was about man's relationship to the natural world. A world that we collectively felt in 2015 as the hottest year in recorded history. Climate change is real. It is happening right now. It is the most urgent threat facing our entire species and we need to work collectively together and stop procrastinating. We need to support leaders around the world who do not speak for the big polluters or the big corporations, but who speak for all of humanity, for our children and future generations and outside there for people whose voices are overwhelmed by the politics of greed. I thank you all for this amazing award tonight. Let us not take this planet for granted. I do not take tonight for granted."

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Greta Thunberg, a young girl yet, is calling for unity for the protection from the effects of climate change:

"My name is Greta Thunberg. We are living in the beginning of a mass extinction. Our climate is breaking down. Children like me are giving up their education to protest. But we can still fix this. You can still fix this. So, what should we do? We need to protect, restore and fund. All around the world, amazing movements are fighting for nature. Join them. Everything counts. What you do counts."

The rising sea level, drought, water scarcity, glacial melting, and global warming are a wake-up call for us to do something about climate change. The choices we make affect the number of greenhouse gases we add to the atmosphere. Making a few changes around our environment can cut carbon emissions. Starting right now, we need to explore what we can do to protect our Earth and combat climate change, the biggest environmental problem our world is facing today. Now we might ask! What we can do to help minimize the effect of climate changes?

Yes, What Can We Do?
"Can we fix it?" or "Can we help?"
Yes, we can!
We can reduce our carbon footprint impact, and increase our handprint by following a few easy steps.
We can make conserving energy a part of our daily routine and our decisions as a consumer.
We can buy "Energy Star" qualified products, like home housewares, computers, and printers.
We can help by using less energy and water.
We can turn off lights and TVs when we leave a room.
We can shut off our computer, monitor and other electronics when we are not using them.
We can also reduce our emissions by taking public transportation or carpooling when possible.
We can green our commute by walking, biking, taking public transportation and carpooling.
We can buy a car, with the lowest emissions.
We can turn off the water when brushing our teeth.
We can help save the planet by using renewable energy and recycling.
We can buy products that use recycled content.
We can recycle many items like paper and plastic.
We can use both sides of the paper we use.
We can reduce the amount of our waste.
We can help by planting trees and increasing the green.
We can just do all around good environmental unique things for the Earth.
We can know and learn our unique world to protect it and ensure its sustainability.
We can help solve climate problems, by knowing more about Earth.
We can state that we support climate-friendly and climate change preparedness policies, and we can explain to our representatives that the transition from dirty fossil fuels to clean power should be a top priority.
We can prevent climate change to destroy the world that we live in if we all work together.
There is still time for us to save our world, but a few!
Act now on climate change.

Approaches to Governments and Corporations Responsibilities

Before giving a comprehensive answer to this question, let us listen to the eco-friendly famous statesmen and CEO of social and economic institutions:

A re-elected President Obama's inaugural address underlines the need to preserve the Earth and take the lead as a USA in using green energy:

"We, the people, still believe that our obligations as Americans are not just to ourselves, but to all posterity. We will respond to the threat of climate change, knowing that the failure to do so would betray our children and future generations. Some may still deny the overwhelming judgment of science, but none can avoid the devastating impact of raging fires and crippling drought and more powerful storms. The path towards sustainable energy sources will be long and sometimes difficult. But America cannot resist this transition, we must lead it. We cannot cede to other nations the technology that will power new jobs and new industries. We must claim its promise. That's how we will

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maintain our economic vitality and our national treasure: our forests and waterways, our croplands and snow-capped peaks. That is how we will preserve our planet, commanded to our care by God. That's what will lend meaning to the creed our fathers once declared."

President Obama Explains the importance of clean energy at the Massachusetts Institute of Technology:
"Windows generate electricity by directing light to solar cells. Lightweight, high-powered batteries that aren't built but are grown. That was neat stuff. Engineering viruses to create batteries. More efficient lighting systems that rely on nanotechnology. Innovative engineering that will make it possible for offshore wind power plants to deliver electricity even when the air is still. And it's a reminder that all of you are heirs to a legacy of innovation, not just here but across America. Countries on every corner of this Earth now recognize that energy supplies are growing scarcer. Energy demands are growing larger, and rising energy use imperils the planet we will leave to future generations. That's why the world is now engaged in a peaceful competition to determine the technologies that will power the 21st century. From China to India, from Japan to Germany, nations everywhere are racing to develop new ways to produce and use energy. The nation that wins this competition will be the nation that leads the global economy. I am convinced of that and I want America to be that nation. It's that simple."

The former Prime Minister of Japan put forward an international framework to reduce greenhouse gases and shares principles needed in aiding developing countries:

"Climate change affects the entire globe and requires long-term and international efforts. Thus, it is imperative for all countries to address the issue under the principle of common but differentiated responsibilities. With the change of government, as Prime Minister of Japan, I will now seek to unite our efforts to address current and future global climate change, with due consideration of the warnings of science. Japan deems the following four principles essential in assisting developing countries: First, the developed countries including Japan must contribute through substantial, new and additional, public and private financing. Second, we must develop rules that will facilitate international recognition of developing countries' emission reductions. In particular, those achieved through financial assistance in a measurable, reportable and verifiable manner. Third, on assistance to developing countries, consideration should be given to innovative mechanisms to be implemented in a predictable manner. And an international system should be established under the auspices of the UN Climate Change Regime. This system should facilitate the one-stop provision of information on and matching of available bilateral and multilateral financing while securing transparency and effective utilization of assistance. Fourth, Japan proposes to establish a framework to promote the transfer of low carbon technologies which ensures the protection of intellectual property rights. I would like to propose to the international community a Hatoyama Initiative based on what I have just outlined. The Kyoto Protocol was a historic milestone as the first international framework that obligated nations to reduce greenhouse gases. Effective efforts however, cannot be realized unless a new framework is created. To that end, towards establishing a fair and effective new single undertaking, I will exert every effort for the success of Copenhagen, in the course of formulating this initiative. Mr. Secretary-General, active measures to address climate change such as the Green New Deal initiated by President Obama will open new frontiers and create new opportunities for employment in the world economy. Particularly, in such fields as clean energy technologies, including electric vehicles and solar power generation. Japan has a relatively strong potential for technological development as well as considerable financial capacity. Thus, I recognize that Japan is expected to take the lead in the international community in setting its own reduction target and to achieve such targets through the development of innovative technologies. I have full confidence in the abilities of the Japanese people and our companies. Political leaders at this time also have a responsibility to future generations to create a sustainable society by transforming the social structure that we have known since the Industrial Revolution. Mr. Secretary-General, in conclusion, I wish to make a strong appeal to you to work together, so that we will be able to make significant achievements in Copenhagen in December. And that the people of the world will be able to say that their leaders made crucial decisions for the sake of future generations."

Microsoft co-founder Bill Gates sets out approaches that motivate him to produce electricity with clean energy:
"The world at night is beautiful. But it also tells a story of energy poverty. Almost a billion people live here in Europe nearly everyone has access to electricity. A billion people live here in this part of Africa only half have access to electricity. There is no question that reliable electricity unlocks a better life for people. With electricity, food can be kept from spoiling. Vaccines can be kept at a safe temperature. Lights at night let people read and do homework.

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Electricity powers businesses and creates jobs. The world would become a richer, healthier, and more equitable place if everyone had reliable access to electricity. Right now, the most effective way to create this access is to build traditional electric generating plants that burn fossil fuels. Electricity generation creates 25 percent of planet-warming greenhouse gas emissions. What's needed are affordable ways to bring clean energy to nearly a billion people who deserve more access to electricity. That's why I'm making investments in clean, affordable, and reliable ways to generate electricity and I'm encouraging others to do the same."

Virgin Group CEO explains their contribution to protecting the environment:
"Our generation has inherited an incredibly beautiful world from our parents and them from their parents. Let us leave a good legacy for our children, and it is in our hands. We have to wean ourselves off our dependence on coal and fossil fuels. Our generation has the knowledge, has the financial resources and, as importantly, has the willpower to do so. We're very pleased today to be making a commitment to invest 100% of all future proceeds to the Virgin Group, from our transportation interests, our train businesses, and our airline businesses, into attacking global warming for an estimated, thank you, for an estimated value of three billion over the next ten years. I hope that this contribution will help in a small way our children experience our beautiful world and encourage others to also do what they can. And I'd just like to thank President for enabling me to make this commitment today."

The magnitude of climate change depends primarily on the number of greenhouse gases emitted globally, and how sensitive the Earth's climate is to those emissions. In recent decades, China has been a pioneer in global warming pollution, generating about 28 percent of all CO_2 emissions. Despite making up just 4 percent of the world's population, The United States produces a whopping 16 percent of all global CO_2 emissions and comes in second. The European Union comes in third, and India fourth place. And the U.S. still maintains its first place in cumulative emissions over the past 150 years.

In the report titled "United in Science" published on the Climate Action Summit, it is emphasized that the first national climate commitments made following the Paris Agreement are insufficient because global warming will continue even if countries implement their current climate plans.

The Secretary-General While emphasizing their expectations from the states in the Climate Action Summit, he points to the following:
Grounded in science and building on the global framework of the Paris Agreement, the Summit focused on nine key action areas: youth and public mobilization; social and political drivers; energy transition; finance and carbon pricing; resilience and adaptation; nature-based solutions; industry transition; mitigation strategy; and cities infrastructure and local action.

The United Nations agreement that sets targets for reduced greenhouse gas emissions aimed at holding the warming of the planet at less than two degrees Celsius above its pre-industrial level should be implemented by all countries. Countries, led by United Nations recognize that clean transportation must remain a priority if to address the costly risks of climate change and protect public health. Globally, at the United Nations Conference on Climate Change in Paris, 195 countries, including the United States, agreed to reduce pollution to prevent the average global temperature from rising above 1.5 degrees Celsius. Prevention of climate change requires the search and use of alternatives to fossil fuels worldwide, as well as very effective reductions in emissions. Countries have adopted resolutions that must enable them to get 100 percent of their electricity from renewable sources like wind and solar.

Under the terms of the Paris agreement, participating nations will meet every five years, starting in 2020, will revise their plans for cutting CO_2 emissions and they will have to publicly report their progress. Many countries have begun to incorporate climate change into their planning, however, it's not enough, urgent action required.

Countries have to form the Clean Power Plan and they have to reduce carbon pollution from power plants by the near future. In the future, the cleans energy economy including wind employment and solar jobs must grow. To avoid the worst effects of climate change, States need to do a lot more to reduce dependence on fossil fuels and start using clean energy instead. One way that countries will do its part to slow down global warming will be to use more green power

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to generate electricity rather than using oil and coal which produce greenhouse gases. Countries of the leading producer of automobiles fossil-fuel-free technologies should develop.

Result

There are some basic practices to mitigate and prevent the impacts of climate change. Some of these are individual, some are social and some are at the state level.

Reducing greenhouse gas emissions by reducing fossil fuels draws attention as the leading practice. For this, it is inevitable to spread clean energy sources as soon as possible. We have to move rapidly towards low emission alternatives such as electric vehicles. Planting trees and expanding forests are among our common responsibilities. Technological innovations and process improvements that will reduce greenhouse gas emissions in industry and agriculture should be implemented. Sustainable transportation systems, energy efficient buildings, green areas and waste management practices should be ensured in cities. Another step will be to manage water resources in cities and agricultural areas, strengthen infrastructure against flood and drought risks, and develop environmentally friendly agricultural methods. Individuals' awareness on climate change should be raised and access to sustainable economic management should be ensured. At the international level, common goals should be set to combat climate change, and states should make agreements and develop cooperation towards this common goal.

REFERENCES

1. *Basu, S., Lan, X., Dlugokencky, E., Michel, S., Schwietzke, S., Miller, J. B., Bruhwiler, L., Oh, Y., Tans, P. P., Apadula, F., Gatti, L. V., Jordan, A., Necki, J., Sasakawa, M., Morimoto, S., Di Iorio, T., Lee, H., Arduini, J., and Manca, G. 2022, Estimating emissions of methane consistent with atmospheric measurements of methane and δ 13C of methane, Atmos. Chem. Phys., 22, 15351– 15377, https://doi.org/10.5194/acp-22-15351.*
2. *Climate Change 2023 Synthesis Report, 2023, https://www.ipcc.ch/report/ar6/syr/downloads/report/IPCC_AR6_SYR_SPM.pdf*
3. *Climate Change Information Resources, New York Metropolitan Region. http://ccir.ciesin.columbia.edu/nyc/pdf/q1a.pdf*
4. *Crippa, M., Guizzardi, D., Banja, M., Solazzo, E., Muntean, M., Schaaf, E., Pagani, F., Monforti-Ferrario, F., Olivier, J. G. J., Quadrelli, R., Risquez Martin, A., Taghavi-Moharamli, P., Grassi, G., Rossi, S., Oom, D., Branco, A., SanMiguel, J., and Vignati, E., 2022, CO2 emissions of all world countries: JRC/IEA/PBL 2022 report, Publications Office, LU, https://doi.org/10.2760/07904.*
5. *Cuesta-Valero, F. J., García-García, A., Beltrami, H., GonzálezRouco, J. F., and García-Bustamante, E.2021, Long-term global ground heat flux and continental heat storage from geothermal data, Clim. Past, 17, 451–468, https://doi.org/10.5194/cp-17- 451.*
6. *Cuesta-Valero, F. J., Beltrami, H., García-García, A., Krinner, G., Langer, M., MacDougall, A. H., Nitzbon, J., Peng, J., von Schuckmann, K., Seneviratne, S. I., Thiery, W., Vanderkelen, I., and Wu, T.2023, Continental heat storage: contributions from the ground, inland waters, and permafrost thawing, Earth Syst. Dynam., 14, 609–627, https://doi.org/10.5194/esd-14-609-2023.*
7. *Dunn, R. J. H., Donat, M. G., and Alexander, L. V., 2022,Comparing extremes indices in recent observational and reanalysis products, Front. Clim., 4, 98905, https://doi.org/10.3389/fclim.2022.989505.*
8. *Epstein, P. R. (1999). Climate and Health. Science, 285, 347-348.*
9. *Gasser, T., Crepin, L., Quilcaille, Y., Houghton, R. A., Ciais, P., and Obersteiner, M., 2020, Historical CO2 emissions from land use and land cover change and their uncertainty, Biogeosciences, 17, 4075–4101, https://doi.org/10.5194/bg-17-4075-2020.*
10. *Harvard, & Chivian, E. (2002) Biodiversity: Its Importance to Human Health Harvard Medical School.*
11. *IPCC Online, Glossary of Terms Used in the IPCC Third Assessment Report (2001) IPCC_Third_Assessment_Report (Accessed December 2009). http://en.wikipedia.org/wiki/*
12. *Lan, X., Tans, P., and Thoning, K. W. 2023, Trends in globallyaveraged CO2 determined from NOAA Global Monitoring Laboratory measurements, Version 2023-04, https://doi.org/10.15138/9N0H-ZH07.*
13. *Langford, I. H., & Bentham, G. (1995). The Potential Effects of Climate Change on Winter Mortality in England and Wales. International Journal of Biometeorology, 38, 141-147.*
14. *Montzka, S., 2022, The NOAA Annual Greenhouse Gas Index (AGGI), NOAA Global Monitoring Laboratory, Boulder Colorado, USA, https://gml.noaa.gov/aggi/aggi.html*

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EPRA International Journal of Climate and Resource Economic Review
-Peer Reviewed Journal
Volume: 12 | Issue: 4 | June 2024 || SJIF Impact Factor (2024): 8.298 || Journal DOI: 10.36713/epra1213

15. *McCarthy, J. J. et al. (2001). Report of the Intergovernmental Panel on Climate Change. New York, USA: Cambridge University Press.*
16. *http://www.thegreatwarming.com/pdf/ClimateChangeFactSheet.pdf*
17. *https://youtu.be/qLTcC7srnLw*
18. *https://youtu.be/J7POOR8UO0c*
19. *https://youtu.be/KAJsdgTPJpU*
20. *https://science.nasa.gov/climate-change/*
21. *https://youtu.be/vTyLSr_VCcg*
22. *https://youtu.be/0__6kx-vTO4*
23. *https://www.un.org/en/climatechange/reports?gad_source=1&gclid=EAIaIQobChMIiJzN-PD0hgMVECR7Bx3rowDZEAAYASAAEgIKaPD_BwE*
24. *Patz, J. et al. (2000). The Potential Health Impacts of Climate Variability and Change for the United States: Executive Summary of the Report of the Health Sector of the US National Assessment. Environmental Health Perspectives, 108, 367-376.*
25. *P. M. Forster et al., 2022, Indicators of Global Climate Change 2022: annual update Sci. Data, 14, 4811–4900, https://doi.org/10.5194/essd-14-4811- 2022.*
26. *Pounds, J.A., & R. Puschendorf (2004). Clouded Futures. Nature, 427, 8 January 2004.*
27. *Rens Kortmann (CE Delft), Edgar Peijnenborgh (RPS), Judith Harrewijn, Lindske van Hulst (SME Advies) (2007). Climate Change: Causes, Consequences, and Solutions, Scientific Background to the On-Line Platform Climate Quest.*
28. *Richardson, M., Cowtan, K., and Millar, R. J.2018, Global temperature definition affects achievement of long-term climate goals, Environ. Res. Lett., 13, 054004, https://doi.org/10.1088/1748- 9326/aab305.*
29. *Stern, N. (2006). The Economics of Climate Change – The Stern Review. Cambridge: Cambridge University Press Sudip Mitra, Global Climate Change an Introduction.*
30. *http://www.climate-leaders.org/wp-content/uploads/global-climatechange-sudipmitra.pdf*
31. *The Argo (2013) Typhoon Haiyan Hits Philippines: Stockton Community Takes Action, The Independent Student Newspaper of the Richard Stockton College of New Jersey. 83.*
32. *UNFCCC (UN Framework Convention on Climate Change) (2007). Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries (p. 12). Bonn: UNFCCC.*
33. *Willetts, E., Guadagno, L., & Ikkala, N. (2010). Addressing Climate Change, Issues and Solutions from around the World (40 p). Editors. Gland, Switzerland: IUCN*
34. *Vanderkelen, I. and Thiery, W. 2023, GCOS EHI 1960– 2020 Inland Water Heat Content, World Data Center for Climate (WDCC) at DKRZ Earth Syst. Sci. Data, 15, 2295–2327, https://doi.org/10.5194/essd-15-2295-2023*