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## A STUDY ON CLIMATE CHANGE, ADAPTATION AND MITIGATION

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### ABSTRACT

*Climate change refers to long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle. But since the 1800s, human activities are the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas. Burning fossil fuels generates greenhouse gas emissions that act like a blanket wrapped around the Earth, trapping the sun's heat and raising temperatures. Examples of greenhouse gas emissions that are causing climate change include carbon dioxide and methane. These come from using gasoline for driving a car or coal for heating a building, for example Clearing land and forests can also release carbon dioxide likewise landfills for garbage are a major source of methane emissions. Energy, industry, transport, buildings, agriculture and land use are among the main emitters. Climate change can affect our health, ability to grow food, housing, safety and work. Some of us are already more vulnerable to climate impacts, such as people living in small island nations and other developing countries. Conditions like sea-level rise and saltwater intrusion have advanced to the point where whole communities have had to relocate, and protracted droughts are putting people at risk of famine. In the future, the number of "climate refugees" is expected to rise. We chose current study on climate change adaptation and mitigation as all human beings have to adopt themselves to changes in climate. In this paper, 400 respondents were selected at random and self-developed questionnaire was employed to collect the information from them on their consent. The study revealed that majority of the respondents (59.5%) were aware of climate change, 78.5% respondents reported that climate change mainly resulted in melting of glaciers, 76.5% reported by frequent storms, 67.5% reported warming/rising of oceans (67.5%), 47.5% reported intense drought (47.5%) and 37.5% reported loss of species. Majority of the respondents believes that for adopting and mitigating climate change, 74.5%*

*believe, we should follow global laws, 71.5% respondents we should implement climate-smart agriculture, forest and landscapes and 68.5% believe that we should improve energy efficiency and increasing use of renewable energy over fossil fuels. Climate change is a crucial global issue as citizen of the world every individual has to play his/her role to tackle this issue.*

**KEY WORDS:** *Climate change, Global warming, Causes, Adaptation and Mitigation*

## INTRODUCTION

Average weather change at a certain location denotes its particular climate that is mainly accountable to various factors like temperature, precipitation, humidity, and windiness. Climate change refers to extreme or secular changes in heat balance of earth-atmosphere system due to external factors like variation in orbital characteristics of earth, Fluctuating radiations from sun, tectonic processes, volcanic eruptions, change in atmospheric conditions etc or by intrinsic factors like exchange of energy between atmosphere, hydrosphere, lithosphere and cryosphere or by both at local, regional and global level. Climochronology has revealed the fact that climate has been changed in geological past and is changing now and has every reason to change in future as well. The changes due to climate are viewed at two levels short term and long term changes as there is periodic alteration in climate due to factors like geologic, chemical, biological, and geographic. Short term changes include changes in energy balance of earth-atmosphere system leading to periodic changes in weather and climate, temporal scale ranges from few to thousands of years and is generally caused by anthropogenic factors compared to long term changes that persist for thousand to millions of years and are slow as they are usually caused by natural factors.

The conditions in the atmosphere are always fluctuating. Solar radiation, the geographic position of continents, ocean currents, the placement and orientation of mountain ranges, atmospheric chemistry, and vegetation growing on the ground surface all influence its physical qualities as well as its rate and direction of motion. Some components, like as heat distribution in the oceans, atmospheric chemistry, and surface vegetation change on extremely short periods. Others, such as the placement and height of mountain ranges and the position of continents, vary over very long durations. As a result, climate, which is determined by the physical qualities and movements of the atmosphere, varies over time. The other factors which influence are oceans, ice masses (glaciers and sea ice), land surfaces and flora. All these factors are interconnected and change in one factor leads simultaneous change in atmosphere. Earth and atmospheric scientists are still trying to figure out how the intricate feedbacks and interactions between the many components of the atmosphere work. The emergence of an interdisciplinary discipline known as Earth system science is assisting this endeavor. Earth system history is a broad and complicated science because different components of the Earth system evolve at different rates and are significant at different timescales. Students of Earth system history are interested in more than merely chronicling what has occurred; they see the past as a set of experiments in which solar radiation, ocean currents, continental configurations, atmospheric chemistry, and other factors all played a role. Earth system history is a broad and complicated science because different components of the Earth system evolve at different rates and are significant at different timescales. Students of Earth system history are interested in more than merely reporting what has occurred; they see the past as a set of experiments in which solar radiation, ocean currents, continental configurations, atmospheric chemistry, and other key aspects have changed. These experiments allow researchers to learn about the relative influences and interactions of diverse Earth system components. Climate change, fortunately, leaves a range of imprints in the natural world. The abundance and geographic distribution of plant

and animal species, the chemistry of oceans and lakes, the building of ice in cold locations, and the erosion and deposition of minerals on Earth's surface are all influenced by climate. Paleo climatologists investigate the traces of these effects, devising ingenious and deceptive methods to learn about previous temperatures. Because most evidence of previous climate change is circumstantial, paleoclimatology necessitates a large quantity of research. Paleo climatologists aim to cross-check their results whenever possible by using numerous lines of evidence. New data sources, analytical techniques, and devices are being developed, and the area is rapidly evolving. Since the 1990s, there have been revolutionary shifts in our understanding of Earth's climatic history, and the following decades will bring many new discoveries and interpretations. Networks of sensors in space, on the ground, and on and below the surface of the world's oceans are monitoring ongoing climate changes. Instrumental data and other archives document climate changes during the last 200–300 years, particularly since the early 1900s. These written papers and recordings detail climatic change in specific regions during the last few centuries. Some of the records are almost 1,000 years old. Natural archives, which are biological or geologic processes that record some aspect of historical climate, are increasingly being used by researchers examining climatic changes that predate the instrumental record. These natural archives, also known as proxy evidence, come in a wide range of forms, including, but not limited to, fossil records of former plant life and animal distributions, sedimentary and geochemical markers of prior ocean and continent conditions, and land surface features associated with historical climates. Paleo climatologists investigate these natural archives by collecting cores, or cylindrical samples, of sediments from lakes, bogs, and oceans; studying surface features and geological strata; examining tree ring patterns from cores or sections of living and dead trees; drilling into marine corals and cave stalagmites; and drilling into the ice sheets of Antarctica and Greenland, as well as the high-elevation glaciers of Tibet's Plateau, the Andes, and other montane. Techniques for retrieving paleoclimatic data are constantly being improved, and new types of natural archives are being discovered and utilized. In the literature, there exist a number of studies on climate change and its effect on environment as well as on human health (e.g., Epstein, 1999; Kovats *et al.* 2000; Epstein, 2001a; Blashki *et al.*, 2007; Costello *et al.* 2009; Altizer *et al.* 2013; Willox *et al.* 2015 and Bilal *et al.*, 2018). In view of the literature cited above, we chose present study with the following objectives:

### AIMS AND OBJECTIVES OF STUDY

The present paper, mainly based on secondary sources of data, has the following aims and objectives to:

- (i) Understand the concept of climate change
- (ii) Highlight indicators and causes of climate change
- (iii) Measures for mitigating and adapting to climate change

### METHODOLOGY

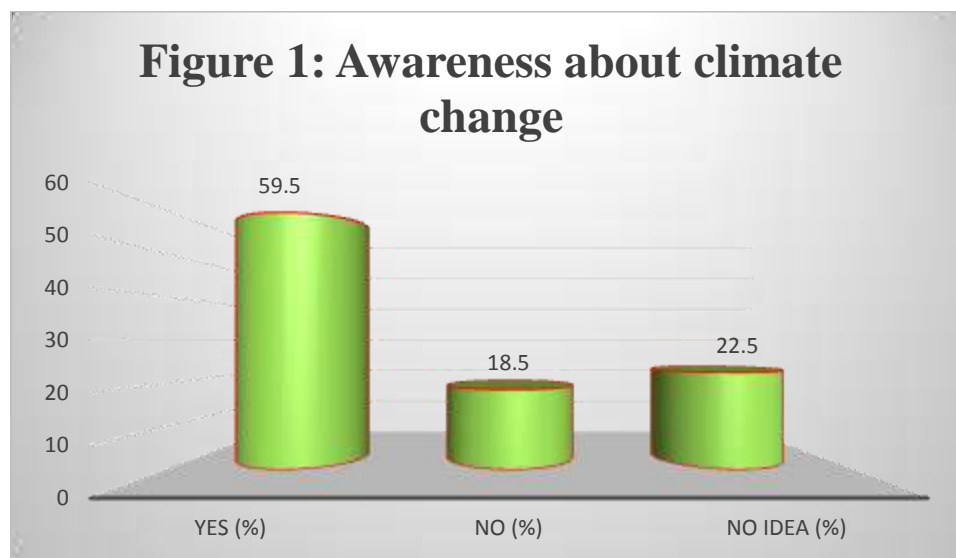
The current study qualitative in nature (questionnaire survey, focus group discussions, online and face to face interviews) was carried out in Kashmir valley to understand the concept of climate change, indicators of climate change, causes of climate change and measures for mitigating and adapting to climate change. The sample size for present study was computed following (Cochran, 1977)

$$n = \frac{Z_{\alpha}^2 P(1 - P)}{d^2}$$

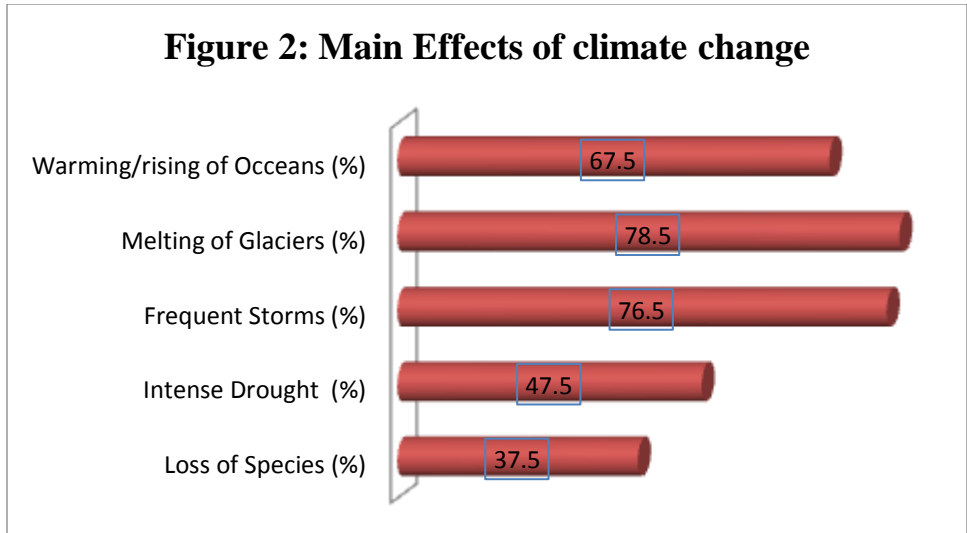
Here, we take  $p=0.5$ ,  $Z_{\alpha} = 1.96$  and  $d=0.05$ . That gives the appropriate sample size  $n \sim 384$  and we decided to chose sample size  $n = 400$ . The data collected from our survey was tabulated, analysed and interpreted statistically. The statistical software SPSS (version 21) was used for analysis of data.

## RESULTS AND DISCUSSION

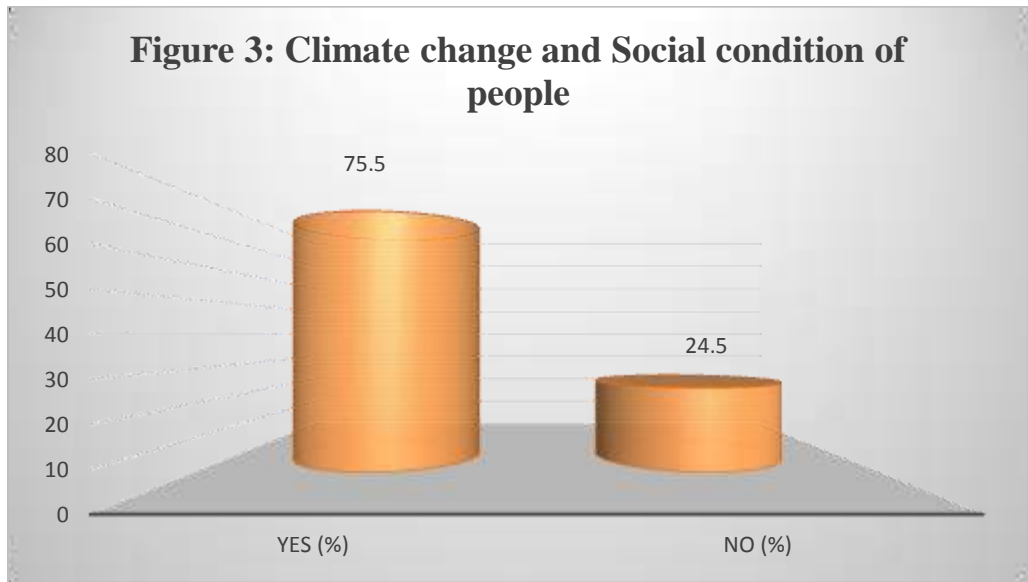
The data presented in Figure 1, shows the awareness about climate change among respondents. The respondents were posed many questions related climate change and majority of the respondents reported that they have heard about climate change and are aware about its impacts. They told that print and electronic media is playing its role to aware people about climate change, its ill effects and our responsibility as a global citizen to play our positive role to tackle the problems and adopt it.



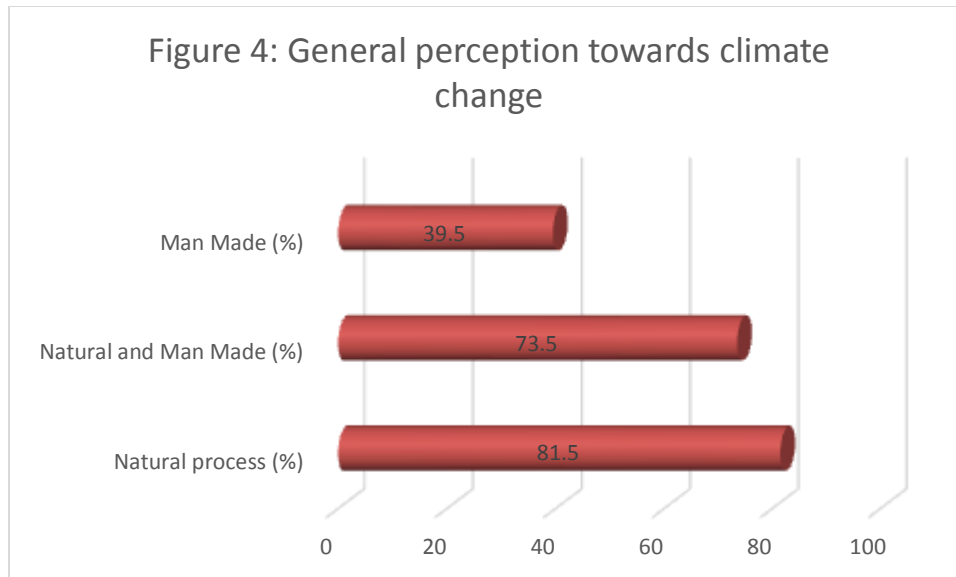
The data shown in Figure 2, reveals that in response to the question posed to respondents with multiple choice of options with freedom to chose more than one option, majority of the respondents 78.5% reported that climate change mainly resulted in melting of glaciers, followed by frequent storms (76.5%), followed by warming/rising of oceans (67.5%), followed by intense drought (47.5%) and loss of species (37.5%). The results of our study are in general with the earlier studies on this topic conducted worldwide.



The data presented in Figure 3, shows that majority of the respondents believe that climate change and social condition of people is related. We notice that climate change resulted in many problems including food security issues, economic issues and health issues.



The data shown in Figure 4, reveals that majority of the respondents believes that climate change is a natural process, followed by natural and man made (73.5%) and man made 39.5%. In group discussion, majority of the respondents believed that climate change is a natural process and we can not stop it. We can delay and not deny climate change impacts.



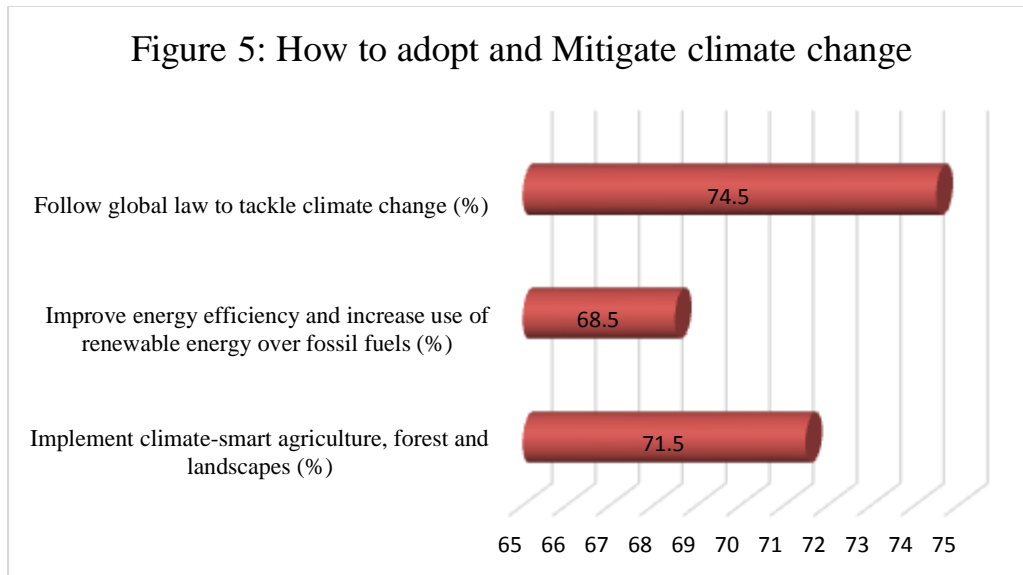
The data presented in Table 1, reveals that in response to statement 1, i.e., In general, people of Kashmir understand the effects of climate change, majority of respondents (63.5%) said yes, whereas in response to statement 2, i.e., In my opinion mass media can play a significant role to aware people about climate change and its impacts, majority of the respondents (72.5%) said yes and in response to statement 3, i.e., Are you conscious about the negative impact of climate change , majority of the respondents (43.5%) also said yes. The results of this study are in agreement with the earlier study conducted by Bilal et al., (2018).

Table 1: Perception about the impact of climate change among people of Kashmir

S.No.	Statement	Yes (%)	No (%)	No Idea (%)
1.	In general, people of Kashmir understand the effects of climate change	254(63.5)	86(21.5)	60(15.0)
2.	In my opinion mass media can play a significant role to aware people about climate change and its impacts	290(72.5)	54(13.5)	96(24.0)
3.	Are you conscious about the negative impact of climate change	174(43.5)	88(22.0)	138(34.5)

The data presented in Figure 5, reveals that majority of the respondents believes that for adopting and mitigating climate change, majority of respondents (74.5%) believe, we should follow global laws, followed by 71.5% respondents who believe that we should implement climate-smart agriculture, forest and landscapes and 68.5% believe that by improving energy efficiency and increasing use of renewable energy over fossil fuels. It is a crucial global issue as citizen of the world every individual has to play his/her role.

Figure 5: How to adopt and Mitigate climate change



## INDICATORS OF CLIMATIC CHANGE

Evidences of climate change in past that help us to construct past climate (climochronology) are termed as indicators of climate, which is constructed by proxy records not by direct records.

### (A) Biological Records

Include fossils of plants and animals preserved in geological formations. By analysing these fossils through various techniques we are able to reconstruct past climate. Biological indicators are divided into two categories Floral and Faunal

#### 1. Floral indicators

At present we see relationship between climate and vegetation and this relationship might have prevailed throughout geological past. Physiology of plant help us to know the climate of past as physiology of plants is adaptation of plant to particular climatic condition for example presence of abundant plant fossils in any region means excessive hot and humid climate, similarly fossils of trees in carboniferous coal seams do not show annual rings which reveal that such trees have grown in warm and moist climate with no seasonal contrast etc.

Also pollens are the best indicators of past climate. By comparing pollens preserved in fossil fuels with pollens of modern vegetation it is possible to infer climate of the time when pollens were preserved.

By studying the annual rings of trees to determine past climate (Dendrochronology). Different aspects of rings provide different clues of past climate for example when rings are thick it means climatic conditions are favorable such as good rainfall and when they are narrow means conditions are not favorable such as dry climate.

#### 2. Faunal Indicators

Analysis of fossils of animals preserved in sedimentary formations provide knowledge about ancient climate that existed during the period of their survival for example fossils of beavers have been found in Siberian tundra since

beavers live in forests which means that climate in Siberia was once warmer similarly occurrence of large number of animal fossils in close proximity denotes the fact that they might have been killed during any catastrophic disaster etc

(B) Morphological Indicators

Includes glacial features, erosional features, fluvial features, per glacial features etc. Since each climate produces its own characteristic assemblage of landforms thus on the basis of landforms we can conclude the climatic conditions at the time of their formations which help in construction of paleoclimate for example presence of glacial boulders in coal seams of orrissa of Gondwana period means that India was once having cold climate as presence of glacial features indicate cold climate

(C) Geological respective

Include varves, evaporites, laterization, red beds, limestone deposits and coal deposits which indicate periglacial climate, drier and warmer climate , wet and dry climate ,tropical climate ,tropical warm climate ,moist climate respectively

(D) Cryogenic Indicators

Related to proxy data from evidences of glaciation, glaciers and ice sheets for example air bubble trapped in annual ice layers record the atmospheric composition of ancient atmosphere.

(E) Tectonic Indicators

Changes in global pattern in plate motion indicates the changes in climate at global level. for example in tertiary period mountain ranges formed due to collision of convergent plates followed by subduction of heavier plate become effective in controlling global atmospheric circulations and generate new climate types.

(F) Sea Level Fluctuations

Sequence of rise and fall in sea level during Pleistocene ice age have revealed several phases of glacial periods and interglacial periods separating two glacial periods.

Other indicators include historical records, flood records, drought records, migration records etc

## CAUSES OF CLIMATE CHANGE

Two causes of climatic change are Natural and Anthropogenic

Natural causes

Climate at any given point depends on three factors

1. Amount of energy received by climatic system from sun
2. manner in which this energy is distributed and absorbed over the earths surface
3. Nature of interaction processes between various components which make the climatic system

Variation in above three factors over time leads to climate change.



Following natural causes are responsible for climate change

1. Change in output of solar radiations because it is the amount of solar energy received at earth's surface which determines the nature and pattern of energy exchange and atmospheric circulation which in turn determine temperature and precipitation.
2. Change in carbon dioxide content in atmosphere plays a role in world wide climatic changes. Change in CO<sub>2</sub> content can be both due to natural as well as anthropogenic sources.
3. Large scale volcanic dust in atmosphere.
4. Astronomical causes which include eccentricity of earth's orbit, wobbling of earth's axis etc.

It is much easier to document the evidence of climate variability and past climate change than it is to determine their underlying mechanisms. Climate is influenced by a multitude of factors that operate at timescales ranging from hours to hundreds of millions of years. Many of the causes of climate change are external to the Earth system. Others are part of the Earth system but external to the atmosphere. Still others involve interactions between the atmosphere and other components of the Earth system and are collectively described as feedbacks within the Earth system. Causes are as follows:

### **1. Generating power**

Generating electricity and heat by burning fossil fuels causes a large chunk of global emissions. Most electricity is still generated by burning coal, oil, or gas, which produces carbon dioxide and nitrous oxide - powerful greenhouse gases that blanket the Earth and trap the sun's heat. Globally, a bit more than a quarter of electricity comes from wind, solar and other renewable sources which, as opposed to fossil fuels, emit little to no greenhouse gases or pollutants into the air.

### **2. Manufacturing goods**

Manufacturing and industry produce emissions, mostly from burning fossil fuels to produce energy for making things like cement, iron, steel, electronics, plastics, clothes, and other goods. Mining and other industrial processes also release gases, as does the construction industry. Machines used in the manufacturing process often run on coal, oil, or gas; and some materials, like plastics, are made from chemicals sourced from fossil fuels. The manufacturing industry is one of the largest contributors to greenhouse gas emissions worldwide.

### **3. Cutting down forests**

Cutting down forests to create farms or pastures, or for other reasons, causes emissions, since trees, when they are cut, release the carbon they have been storing. It is noticed each year approximately 12 million hectares of forest are destroyed. Since forests absorb carbon dioxide, destroying them also limits nature's ability to keep emissions out of the atmosphere. Deforestation, together with agriculture and other land use changes, is responsible for roughly a quarter of global greenhouse gas emissions

### **4. Using transportation**

Most cars, trucks, ships, and planes run on fossil fuels. That makes transportation a major contributor of greenhouse gases, especially carbon-dioxide emissions. Road vehicles account for the largest part, due to the combustion of petroleum-based products, like gasoline in internal combustion engines. But emissions from ships and planes continue to grow. Transport

accounts for nearly one quarter of global energy-related carbon-dioxide emissions. And trends point to a significant increase in energy use for transport over the coming years.

### 5. Producing food

Producing food causes emissions of carbon dioxide, methane, and other greenhouse gases in various ways, including through deforestation and clearing of land for agriculture and grazing, digestion by cows and sheep, the production and use of fertilizers and manure for growing crops, and the use of energy to run farm equipment or fishing boats, usually with fossil fuels. All this makes food production a major contributor to climate change. And greenhouse gas emissions also come from packaging and distributing food.

### 6. Powering buildings

Globally, residential and commercial buildings consume over half of all electricity. As they continue to draw on coal, oil, and natural gas for heating and cooling, they emit significant quantities of greenhouse gas emissions. Growing energy demand for heating and cooling, with rising air-conditioner ownership, as well as increased electricity consumption for lighting, appliances, and connected devices, has contributed to a rise in energy-related carbon-dioxide emissions from buildings in recent years.

### 7. Consuming too much

Your home and use of power, how you move around, what you eat and how much you throw away all contribute to greenhouse gas emissions. So does the consumption of goods such as clothing, electronics, and plastics. A large chunk of global greenhouse gas emissions are linked to private households. Our lifestyles have a profound impact on our planet. The wealthiest bear the greatest responsibility: the richest 1 per cent of the global population combined account for more greenhouse gas emissions than the poorest 50 per cent.





Figure 7: Impact of Climate change on Environment as well on animals (Source internet)

Policies on adapting to climate change will help us withstand the consequences of global warming.

### MEASURES FOR MITIGATING AND ADAPTING OF CLIMATE CHANGE

Adaptation – adapting to life in a changing climate – involves adjusting to actual or expected future climate. The goal is to reduce our vulnerability to the harmful effects of climate change (like sea-level encroachment, more intense extreme weather events or food insecurity). It also encompasses making the most of any potential beneficial opportunities associated with climate change (for example, longer growing seasons or increased yields in some regions). Many climate change solutions can deliver economic benefits while improving our lives and protecting the environment. We also have global frameworks and agreements to guide progress, such as the Sustainable Development Goals, the UN Framework Convention on Climate Change and the Paris Agreement. Three broad categories of action are: cutting emissions, adapting to climate impacts and financing required adjustments. Switching energy systems from fossil fuels to renewables like solar or wind will reduce the emissions driving climate change. But we have to start right now. While a growing coalition of countries is committing to net zero emissions by 2050, about half of emissions cuts must be in place by 2030 to keep warming below 1.5°C. Fossil fuel production must decline by roughly 6 per cent per year between 2020 and 2030. Adapting to climate consequences protects people, homes, businesses, livelihoods, infrastructure and natural ecosystems. It covers current impacts and those likely in the future. Adaptation will be required everywhere, but must be prioritized now for the most vulnerable people with the fewest resources to cope with climate hazards. The rate of return can be high. Early warning systems for disasters, for instance, save lives and property, and can deliver benefits up to 10 times the initial cost. Climate change is an uphill battle, but with our combined efforts and suitable mitigation actions we can minimise the damage it causes:

1. Improving energy efficiency and opting for renewable energy over fossil fuels.
2. Promoting public transport and sustainable mobility by increasing the numbers of journeys in towns by bicycle, reducing the number of flights and taking more trips by train or in shared cars.
3. Promoting ecological industry, agriculture, fishing and livestock farming, food sustainability, responsible consumption and the 3Rs rule (reduce, reuse, recycle).
4. By taxing the use of fossil fuels and CO<sub>2</sub> emissions markets.

Alongside mitigation measures to stem global warming, measures for adapting to climate change also need to be encouraged:

1. Erecting buildings and infrastructure that is safer and more sustainable.
2. Replanting forests and restoring damaged ecosystems.
3. Diversifying crops so that they are better able to adapt to changing climates.
4. Investigating and developing innovative solutions to prevent and manage natural catastrophes.
5. Developing action plans for climate emergencies.

## MITIGATION

Mitigation – reducing climate change – involves reducing the flow of heat-trapping greenhouse gases into the atmosphere, either by reducing sources of these gases (for example, the burning of fossil fuels for electricity, heat or transport) or enhancing the “sinks” that accumulate and store these gases (such as the oceans, forests and soil). The goal of mitigation is to avoid significant human interference with the climate system, and “stabilize greenhouse gas levels in a timeframe sufficient to allow ecosystems to adapt naturally to climate change, ensure that food production is not threatened and to enable economic development to proceed in a sustainable manner.

### Put a price on carbon

Cutting emissions starts with clear policy signals.

Carbon pricing systems – such as emissions trading systems that cap emissions or carbon taxes that charge per ton – send a long-term signal to companies by creating an incentive to reduce polluting behaviors and to invest in cleaner energy choices and low-carbon innovation. It is witnessed close to 40 countries and more than 20 cities, states and provinces now have or are preparing to implement carbon pricing through emissions trading systems or carbon taxes, and their numbers are growing. Korea launched the newest carbon market in January. China, with seven pilot carbon markets in cities and provinces, saw its emissions drop last year and plans to launch a national emissions trading system as early as 2016.

## **End fossil fuel subsidies**

Fossil fuel subsidies send a different signal – one that can encourage waste and discourage low-carbon growth. By phasing out harmful fossil fuel subsidies, countries can reallocate their spending to where it is most needed and most effective, including providing targeted support for the poor.

Nearly \$550 billion went into direct fossil fuel subsidies worldwide in 2013, taking up large percentages of some countries' GDP to artificially lower energy prices.

## **Build low-carbon, resilient cities**

Getting prices right is one part of the equation. Another piece is building a sustainable future, because all development happens in the context of climate change.

There will be more infrastructure built in the next 20 years than in the past 6,000, the president told the audience. Cities are growing fast, particularly in the developing world. Just over half the global population is urban today; by 2050, cities are expected to hold two-thirds of the world population.

With careful planning of transportation and land use, and the establishment of energy efficiency standards, cities can build in ways that avoid locking in unsustainable patterns. They can open up access to jobs and opportunity for the poor and reduce damaging air pollution.

Financing that growth to be sustainable can be a challenge, though. Data show that only about 4 percent of the 500 largest developing countries cities are deemed creditworthy in international markets. The World Bank Group is helping cities improve their strategic planning and fix the financial fundamentals that can prevent them from accessing finance.

## **Increase energy efficiency and use of renewable energy**

When we talk about energy, we have to talk about access. Worldwide, about 1.2 billion people lack access to electricity and 2.8 billion rely on solid fuels for cooking, such as wood, charcoal, and coal, which cause harmful indoor air pollution. Through the Sustainable Energy for All initiative, the World Bank Group supports three goals for 2030: to achieve universal access to modern energy, double the rate of improvement in energy efficiency, and double the share of renewable energy in the global energy mix. Energy efficiency improvements are crucial. Every gigawatt saved is a gigawatt that didn't have to be produced. Globally, energy use is about one-third lower today than it would have been without the past 20 years of energy efficiency improvements. Renewable energy, meanwhile, is becoming increasingly affordable as prices fall. In many countries, developing utility-scale renewable energy is now cheaper than or on par with fossil fuel plants.

## **Implement climate-smart agriculture and nurture forest landscapes**

The fifth area for action takes in both mitigation and adaptation. Climate-smart agriculture techniques help farmers increase their farms' productivity and resilience to the impacts of climate change, such as droughts, while also creating carbon sinks that help reduce net emissions. Forests, too, are valuable carbon sinks that absorb carbon and store it in soils, trees, and foliage.

## CONCLUSION

Worldwide climate change has shocking impacts on food production and Kashmir region has also experienced climate change as we notice increase in temperature, erratic rainfall, frequent floods, erosion etc. The results obtained from survey and group discussions revealed that 59.5% respondents were aware of climate change, 78.5% were of the opinion that that climate change mainly resulted in melting of glaciers, frequent storms (76.5%), warming/rising of oceans (67.5%), intense drought (47.5%) and loss of species (37.5%). Majority of the respondents believes that for adopting and mitigating climate change, 74.5% believe, we should follow global laws, 71.5% respondents we should implement climate-smart agriculture, forest and landscapes and 68.5% believe that we should improve energy efficiency and increasing use of renewable energy over fossil fuels. It was concluded on the basis of group discussion that climate change has adversely affected human activities in study area also. The results of present study are in agreement with the previous study (Kaul and Ram, 2009, Bilal et al., 2018). Infact, climate change is an uphill task but with our sincere combined efforts and proper mitigation actions we can minimize damage. We must improve energy efficiency and opt for renewable energy over fossils fuels. At present, climate change is a crucial global issue as citizen of the world every individual has to play his/her role to tackle this issue. Every world religion is against the cutting or destruction of plants and trees unnecessarily. Holy Prophet Muhammad (PBUH) said: “He who cuts a lote-tree [without justification], Allah will send him to Hellfire.” (Abu Dawud). Quran guides that human beings have been given the responsibility of guardianship over the natural environment. Like corruption, Climate change, is a matter of life or death. The evidence is *hard* and clear. Infact, both are most devastating for the poor and vulnerable people. We should participate in climate change awareness programs. Government organizations as well as NGOs should collaborate to combat the climate change. It is important to promote ecological industry, agriculture, fishing and livestock farming, food sustainability, responsible consumption and the 3 Rs (reduce, reuse, recycle). Restoring ecosystems, replanting forests, diversifying crops are measure to adapt climate change.

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