International Journal of Scientific Research in Engineering and Management (IJSREM)
Volume: 07 Issue: 05 | May - 2023 Impact Factor: 8.176 ISSN: 2582-3930

Global Climate Change: A Review

Ms. Nikita Sunil Chavan[1], Mr. Digvijay Dhanraj Patil[2], Prof. Tushar Bhambare[3]

[1] *Department of Project & construction Management, MITCOM, MIT-ADT University, Pune.*
[2] *Department of Project & construction Management, MITCOM, MIT-ADT University, Pune.*
[3] *Department of Project & construction Management, MITCOM, MIT-ADT University, Pune.*

Abstract –

Over the beyond century, the weather of Earth has changed. Sea levels have increased, glaciers and ice sheets have shrunk in size, the atmosphere and oceans have warmed. According to the best known data, greenhouse gas emissions from human activities are the primary culprit. The physical environment and ecosystems of Earth will experience additional warming as a result of continued increases in greenhouse gases. Long-time period modifications in temperature and climate styles are called weather change. These adjustments can be due to herbal processes, such oscillations with inside the sun cycle. The number one motive of weather alternate has been human activity, usually due to the burning of fossil fuels like coal, oil, and gas. Fossil gasoline combustion produces greenhouse fuelling emissions that function a blanket across the planet, trapping warmness from the solar and growing temperatures. Carbon dioxide and methane are examples of greenhouse fuelling emissions which are contributing to weather change. These are produced, for instance, when burning coal or petrol to heat a building. Carbon dioxide also can be launched at some stage in woodland and land clearing. Methane emissions are in most cases produced through waste landfills. Among the foremost emitters are energy, industry, transportation, buildings, agriculture, and land use. Climate extrude may also have an effect on our work, housing, safety, and cap potential to develop food. Some of us, such as residents of small island states and other developing nations, are already more susceptible to the effects of the climate.

Key Words: Climate, Sustainable development, greenhouse gases, carbon footprint

1. INTRODUCTION

Climate change has an effect on how the country is developing. In such a case, an adaptation strategy based on general climate change projections and risk and probability management is as follows. Climate change is the long-term alteration of the average temperature and weather patterns. The term "weather change" describes the evolution of the planet's climatic circumstances. the alteration of Earth's weather patterns brought on by both human activities and the cycle of the planet's climate. One of the most important issues the sector is presently experiencing is weather change. If nothing is done to stop it, our future will be in danger. According to general definitions, climate change refers to a change in the average weather, such as warmer and wetter circumstances. Climate change is caused by global warming because of its negative effects on the environment. The increase in temperature and subsequent changes to the climate are brought on by greenhouse gases. Long-time period modifications in temperature and climate styles are called weather change. The fast weather alternate we're now seeing is due to human beings the usage of oil, fuel line and coal for his or her homes, factories and transport. When those fossil fuels burn, they launch greenhouse gases on the whole carbon dioxide (CO2).These gases entice the Sun's warmth and purpose the planet's temperature to rise. The amount of CO2 in the atmosphere has increased by 50%, and the world is currently 1.1C hotter than it become with inside the nineteenth century. Climate change refers to a shift in a region's long-term average conditions, such as temperature and rainfall. For instance, the US changed into in large part included through glaciers 20,000 years ago. There are fewer glaciers and a warmer temperature in the United States today.

Global weather alternate refers back to the common long-time period modifications over the complete Earth. These consist of warming temperatures and adjustments in precipitation, in addition to the results of Earth's warming, such as:

- Rising sea levels
- Shrinking mountain glaciers Ice melting at a faster rate than usual in Greenland, Antarctica and the Arctic
- Changes in flower and plant blooming times.

Even before people arrived on Earth, the climate was continually shifting. Scientists have recently noticed strange alterations, though. For instance, over the past 150 years, Earth's average temperature has been rising far more swiftly than they would have anticipated.

The greenhouse impact is the number one motive of weather change. Some gases in the Earth's atmosphere mimic the effect of greenhouse glass by trapping solar heat and preventing it from escaping back into space, which would otherwise contribute to global warming.

While many of these greenhouse gases are produced naturally, human activity is raising the levels of some of them in the atmosphere, particularly: carbon dioxide (CO2)

- Methane
- Nitrous oxide
- Fluorinated gases

The main source of CO2 created by human activity is global warming. By 2020, its atmospheric concentration had increased to a level that was 48% higher than pre-industrial (before 1750) levels.

Smaller amounts of other greenhouse gases are also released by human activity. Although methane has a shorter atmospheric lifetime than CO2, it is a more potent greenhouse gas. Like CO2, nitrous oxide is a long-lasting greenhouse gas that builds up in the atmosphere over many years to centuries. Aerosols like soot, which are non-greenhouse gas pollutants, have a variety of warming and cooling effects in addition to being linked to other problems like poor air quality.

Between 1890 and 2010, it is estimated that natural factors, such as variations in solar radiation or volcanic activity, contributed less than plus or minus 0.1°C to global warming. This essay's goals are to examine alternative environmentally friendly methods for combating climate change and advancing world growth.

2. OBJECTIVE

Humanity must reduce its emissions of climate-warming greenhouse gases, such as carbon dioxide, and also remove excess carbon from the atmosphere in order to avert irreversible damage to Earth's life-support systems. This will necessitate a swift and extensive switch to clean and renewable energy sources.

The Climate Risk and Vulnerability Assessment's broad goals are:

- To assess the exposure, sensitivity, and adaptive capacity of the project roads to climate risks, and
- To examine climate-risk adaptive interventions to build resilience.

3. IMPACTS OF CLIMATE CHANGE:

- Some extreme weather events are becoming more common and severe due to climate change.
- Heat waves become more frequent, intense, and long-lasting as the temperature rises, which can be hazardous to people's health, especially the elderly and young.
- The gases that cause the "greenhouse effect" and contribute to global warming and climate change are known as greenhouse gases.
- Climate change is a result of carbon emissions.
- Urban air pollution is a result of carbon emissions.
- The seasons are changing as a result of climate change.
- Numerous factors, including climate change, can increase the frequency of earthquakes and, consequently, the risk of tsunamis.
- Acid rain is caused by carbon dioxide emissions.
- As storms grow more common due to climate change, heavier rainfall can also cause landslides.
- Acidification of the water and coast is exacerbated by carbon emissions. Annual average temperatures will increase; Soil will become drier on average, Snowfall will decrease.
- The summers became much hotter and dryer.
- Winters are become drier and milder as a result of global warming.
    - Rainfall that is intense and heavy will happen more frequently.
- Floods cause millions of people to lose their homes and possessions each year.
-
- Floods cause millions of people to lose their homes and possessions each year.
- The effects of climate change may result in more frequent and severe storms and winds.
- The effects of climate change on various societal segments are interconnected. Food production and human health can be harmed by drought.
- Flooding has the potential to spread illness and harm infrastructure and ecosystems.
- The frequency and intensity of extreme high temperature events are virtually certain to increase in the future as global temperature increases.
- When we travel by car and experience an increasing number of traffic jams, climate change has an impact on us.
- Due to climate changes, the ocean level is rising, glaciers are melting, CO2 levels in the atmosphere are rising, the forest and wildlife are disappearing, and water life is also being disrupted.
- By affecting the quality of the air and water, spreading some diseases more widely, and changing the frequency or severity of extreme weather events, climate change can also have an effect on human health.
- Coastal habitats and communities are in danger due to rising sea levels.
- Highway building and maintenance will likely be significantly impacted by climate change.
- Snow and ice are less disruptive because of milder winters.

4. EFFECTS OF CLIMATE CHANGE

4.1 Food

- Climate and climate have an effect on our meals supply. The farmers and ranchers that produce the meals that is going on our tables faces problems because of growing temperatures, drought and water stress, illnesses, and cruel weather.
- Human farm labourers are susceptible to health problems brought on by the heat, such as exhaustion, heatstroke, and heart attacks. Animals can be afflicted by warmth pressure and growing temperatures.
- The dietary price of a few vegetation might also additionally decline because of versions in atmospheric carbon dioxide.
- Crops may have lower nutritional value due to elevated CO2, with wheat, for example, containing less protein and some micronutrients. According to studies, rising CO2 levels cause micronutrient concentrations in agricultural and non-crop plants

to drop, which has detrimental effects on human nutrition, including lower B vitamin levels in rice.

Fig: 4.1.2 Effects Of Climate Change On Food Production & Health

Figure 4.2.1 Climate Change Impacts On Water Resource

Figure 4.2.2 Climate Change Impacts On Water Resource

The production of food is essential to a self-sufficient community. A community can sustain itself with local food and become less reliant on outside food supplies. Food that must be transported long distances is not sustainable. The idea of "Food miles" is a recent development that pertains to sustainability. Growing food can address a variety of other issues when combined with sustainability and other facets of communal life. Buildings can incorporate growing food if smart design is used. It is possible to improve soil productivity by using compost made from organic waste. Food gardens can be included in neighborhood parks that are maintained by the entire neighborhood. They have the capacity to filter water using artificial wetland systems.

4.2 Water Quality:

Climate change can have a variety of effects on water quality. Climate change will cause an increase in precipitation in some areas. Water treatment facilities and sewer systems could be overwhelmed by the rising water volume, allowing contaminated water to reach municipal water sources. Furthermore, torrential rains can increase runoff into bodies of surface water. Sediments, nutrients, pollution, animal waste, and other hazardous substances can all be contaminants in runoff. Water quality may decline as a result of increased runoff into surface waters. As a result of climate change, sea levels will increase, causing saltwater to infiltrate freshwater areas and contaminate drinking water sources.

Additionally, as freshwater is drained from upstream rivers and reservoirs due to increased water use in drought-stricken areas, salt waters may infiltrate further upstream. Increasing droughts may cause once-reliable freshwater sources to become contaminated with saltwater. Water-borne illnesses will spread more widely as water purification technology becomes less effective.

The characteristics of global precipitation, evaporation, snow, stream flow, and other elements that affect water supply and quality vary as the climate warms. Saltwater seeps into fresh subterranean water and freshwater streams as a result of rising sea levels. As a result, less freshwater is accessible for drinking.

Water is the most crucial resource for supplying necessities. Numerous unnatural practices have recently disrupted the renewable water cycle. Aquifers won't be refilled if the soil is covered with non-porous materials. Another troubling problem that results from the placement of garbage in water bodies or the excessive use of pesticides is the contamination of surface water. Serious questions concerning sustainability and water management are raised by this. It is possible to gently restart the water cycle with proper management. The actions to be performed depend on the primary water sources in the area. Rainwater must be gathered and stored, and surface runoff must be minimized. For the water to gather, the watershed needs to be revitalized. To allow water to permeate and replenish the water table, the soil cover must be permeable. Grey water must be treated properly in order for it to be recycled. Composting can be done with wastewater, and the finished product can be utilized to make food.

4.2 Waste management:

Our daily garbage production is increasing at a startling rate. Due to the difficulty of easily decomposing large amounts, this makes disposal problematic. The important thing to remember is that waste from one industry can be used as raw material in another. The majority of the inorganic trash we generate is readily accepted in other cycles and serves as their raw material. Other trash can be recycled or put to good use. Reducing,

recycling, and reusing are the three R's that environmentalists frequently mention. Restore has lately been added as the fourth R. The amount of garbage produced by the building sector necessitates processing. Construction projects should use more materials that have been recycled or used before. Analyzing the materials' packaging and embodied energy (for instance, during transit) is important. Buildings that are simple to disassemble generate less trash and are generally recyclable. Biofuel made from organic waste can be used to generate electricity. Because the waste comes from local production or agriculture, community power plants are the best places to use biofuels. They generate energy by combustion or anaerobic digestion.

Because of the quantity of packaging used and the condensed product lifespan, humans produce more waste than ever before. Many products, garbage, and packaging cannot be recycled, consequently they become in landfills. When waste in landfills starts to break down, harmful gases that contribute to global warming are released into the atmosphere.

Environmental effects

- Oceans, ice, and weather are only a few of the environmental repercussions of climate change that are widespread and far-reaching. Changes might come about slowly or quickly.
- Hurricane and typhoon rainfall frequency and intensity are probably rising.
- The spread of deserts in the subtropics and other drier climate zones are both results of climate change.
- Ecosystems and living things will continue to be significantly impacted by climate change.
- Extreme weather, declining sea ice, yearly warming records, drought, fires, and ecosystem stressors.
- FLOODING: It has resulted in the loss of life, the economy, and the citizens' main source of income. Coastal floods, river floods, flash floods, urban floods, and ponding floods are some of the common types of flooding.
- Storms that occur more frequently due to climate change might also result in more heavy rainfall that can cause landslides.
- Local tsunami danger can increase as a result of a warming environment since both subsurface and aerial landslides are more likely.
- Permafrost (frozen soil) melting at high latitudes reduces soil stability, rendering it more prone to landslides and erosion.

5. Causes of Climate Change

5.1 Generating power

- Burning fossil fuels to produce electricity and heat has a significant effect on global emissions.
- Burning coal, oil, or fuel line nonetheless substances the bulk of the world's electricity, which produces carbon Dioxide and nitrous oxide, effective greenhouse gases that cowl the planet and lure the sun's heat.
- Compared to fossil fuels, renewable energy sources such as wind, solar, and other ones provide around a quarter of the world's electricity.
- Emissions from production and enterprise are primarily the end result of burning fossil fuels to create power for the manufacturing of objects like textiles, electronics, plastics, cement, iron, and steel.
- Gases also are launched at some stage in mining and different business activities, in addition to at some stage in construction.
- Coal, oil, and gas are frequently utilised as fuel by machines used in production, and some materials also like plastics, are made from chemicals sourced from fossil fuels.

5.2 Cutting down forests

Cutting down forests to make manner for farms, pastures, or for different functions will increase emissions due to the fact while bushes are felled, the saved carbon is released.

• An expected 12 million hectares of woodland are burned annually.

• Destruction of forests reduces nature's potential to preserve emissions out of the surroundings due to the fact they soak up carbon dioxide

• A percentage of the world's greenhouse fuel line emissions are resulting from deforestation, at the side of agriculture and different adjustments in land use.

5.3 Using transportation

- Fossil fuels are typically used to power cars, trucks, ships, and aircraft. As a result, emissions of greenhouse gases, particularly carbon dioxide, are greatly influenced by the transportation sector.
- Due to the internal combustion engines used in road vehicles, which burn petroleum-based fuels like petrol, they make up the majority. However, emissions from ships and aircraft are still rising.
- The majority of carbon dioxide emissions related to energy come from transportation. In addition, statistics

suggest that over the next few years, energy use for transportation will rise significantly.

5.4 Producing food

In addition to deforestation and clearing land for agriculture and grazing, digestion by cows and sheep, production and use of fertilizers and manure for growing crops, and the use of energy to run farm machinery or fishing boats, typically with fossil fuels, all contribute to the production of food, which results in emissions of carbon dioxide, methane, and other greenhouse gases. Due to all of this, food production plays a significant role in climate change. Additionally, food distribution and packaging both contribute to greenhouse gas emissions.

5.5 Powering buildings

Over half of all electricity used worldwide is consumed by residential and commercial buildings. They continue to produce a sizable amount of greenhouse gas emissions since they use coal, oil, and natural gas for heating and cooling. Energy-related carbon dioxide emissions from buildings have increased over the past few years as a result of rising energy demand for heating and cooling, rising air conditioner ownership, and increased electricity use for lighting, appliances, and connected devices.

5.6 Overfishing

Most of the world now depends on the fish industry because fish is one of the main sources of protein for humans. There are presently much less marine lifestyles when you consider that fewer humans are shopping for and ingesting fish.

5.7 Oil Drilling

About 8% of the carbon dioxide pollution and 30% of the methane population are brought on by oil drilling. Petroleum oil hydrocarbons are collected during oil drilling, but other gases are discharged into the atmosphere during this process, which contributes to climate change. Oil drilling is also hazardous to the environment and the surrounding fauna.

6. CLIMATE CHANGE MITIGATION:

FOLLOWING IS THE LIST OF EVALUATION CRITERIA

6.1 Energy Production

- Communities that use renewable energy sources to meet some of their energy needs are considered renewable.
- If they encourage the use of efficient equipment in both their large and small activities, equipment efficiency in usage.
- If they adopt climate-responsive housing and building techniques, which in turn lowers energy needs, they are considered climate-responsive.

6.2 Water Efficiency

- Water use efficiency.
- Recycling / reuse / processing
- Water harvesting schemes - schemes used to improve groundwater recharge or surface water harvesting.

6.3 Land Use

- Renewal / brownfield area
- Density
- Environmental planning
- Land use

6.4 Waste

- Collection – if the municipality uses the correct waste collection methods. This is the first step to further processing it and keeping the community clean.
- Recycling/reusing/processing
- organic
- inorganic

6.5 Accessibility

- Cars - How much of the urban/rural movement is done by cars.
- Suitable for cyclists and pedestrians
- public transport - availability of public transport for local commuter's
- Alternative fuel

6.6 Industry

- Industry is the largest emitter of greenhouse gases when direct and indirect emissions are included.
- In energy-intensive industries where electricity is not an option, green hydrogen can play a significant role in reducing emissions from industry. The steel and cement industries have further options, such as switching to a less harmful production method.
- Industrial processes can be improved to use less material and produce products with lower emission levels. In addition to reducing the need for new materials, circular economy strategies also cut back on the emissions that would have been produced during the mining and collection of those materials.
- Investment in innovation is necessary to create new technologies for the decarburization of cement production.
- Although bio concrete is one option for reducing emissions, CCS (Carbon Capture & Storage) will be

required at least temporarily because no technology for mitigation is yet mature.

6.7 Transport

- 15% of global emissions are related to transportation.
- In order to reduce transportation carbon emissions, more people should use public transportation, low-carbon freight transportation, and cycling. The use of ecologically friendly rail and electric vehicles contributes to a decrease in the use of fossil fuels. Electric trains are typically more effective than air and truck transportation.
- Improved public transportation, smart mobility, automobile sharing, and electric hybrids are other efficiency-enhancing measures.
- Emissions trading is able to incorporate fossil fuels used in passenger vehicles. Furthermore, switching to a high-tech, low-carbon public transportation system from a transportation system dominated by cars is crucial. Heavyweight, large personal vehicles (such as cars) require a lot of energy to move and take up much urban space. Several alternatives modes of transport are available to replace these.
- Install emergency and backup capacity for the operational and safety systems (pass-by trucks, switches, operation on the opposing lane) to support the capacity affected by extreme weather.
- improving traffic control, especially to ensure that cyclists and pedestrians have a fair amount of space to travel in.
- Our modes of transport must be in line with environmental standards and have a smaller carbon footprint. Rethinking our mobility strategies in favour of eco-friendly transport is crucial from the design phase onward.
-

6.8 Reduce Greenhouse Gas Emission:

- Buildings that are already in use can be retrofitted to become more energy-efficient and rely less on fossil fuels for heating and cooling.
- Putting in place a net-zero energy building code for new buildings.
- Enhancing energy effectiveness and lowering total consumption.
- Increasing power production and improving the energy grid
- Expanding the use of renewable energy in the production of energy.
- To steadily increase the usage of renewable energy, guidelines for renewable portfolios are being developed Reducing dependence on personal motors and growing using public transit.
- Increasing cycling and walking.
- Deploying zero-emission electric vehicles.
- Measure and Analyze Greenhouse Gas Emissions.
- Bring your own bags when you go shopping and stay away from anything that comes in a lot of plastic.
- By levying fees on carbon markets and the consumption of fossil fuels.
- Utilizing reflective pavements, cool roofs, green roofs, and other cutting-edge technologies to reduce the impact of urban heat islands.
- Enhancing utility and transportation systems to maintain variability during extreme weather conditions (such as heat waves, tornadoes, and flooding).
- Upgrading current structures, developing new structures, and undertaking development projects that can endure the effects of climate change.
- Strengthening community, social, and economic resilience to make neighborhoods and communities safer and more prepared.
- Increasing the capacity of carbon-sinks through reforestation, and not allowing ocean to acidify.
- Improving the existing energy (electricity) generating units to low-carbon emission.
- Increasing insulation of buildings.
- Use more of natural air and sunlight.
- Curbing the growth in demand of energy, and Stopping fiddling with the nature.
- The use of ecologically friendly rail and electric cars helps to cut down on the use of fossil fuels. Electric trains are typically more effective than air and truck transportation. Improved public transportation, smart mobility, automobile sharing, and electric hybrids are other efficiency-enhancing measures.
- Limit wildfires. Carbon emissions and wildfires are linked in a negative cycle. Dangerous carbon emissions are produced by wildfires, and increasing carbon emissions lead to extreme weather events like heat waves, which frequently fuel wildfires. The demands placed on emergency responders, fire departments, and land management can be reduced to some extent by reducing our emissions.

• Deforestation is one of the major factors contributing to carbon emissions. When trees are growing, they take in and store carbon dioxide from the atmosphere, but when they are cut down, they lose this ability. One of the most affordable, environmentally friendly ways to combat climate change and lessen our harmful effects on the environment is to plant trees.

• Encourage technology transfer and innovation to achieve breakthroughs in sustainable energy. One of the keys to stabilizing the concentrations of greenhouse gases and lowering or limiting the rise of their emissions is technology. Decentralized renewable energy with energy storage is priority number one, followed by electric drive and mobility technologies, speeding adoption of energy efficiency, and clean technology innovation.

7. CONCLUSION

Climate change is real, and human activity is substantially to blame. Carbon emission has an immediate influence on the globe as a result of human activities and natural events. If we do nothing, its effects are already being seen and will only get worse in the next decades. Due to the CO2 and other greenhouse gas emissions caused by human activity, the rate of global warming is growing. This has resulted in climate changes and environmental degradation, which have in turn created significant issues for diseases and human health. Due to changes in the weather, several diseases that were previously unknown in particular climate zones are now spreading there. In addition, numerous illnesses that were previously believed to be extinct are reappearing in regions with changing climatic circumstances that favor them. Therefore, it is crucial that decision-makers at the industrial, governmental, and international policy levels come up with strict and practical ways to reduce greenhouse gas emissions in order to stop the spread of its effects and the subsequent climate change, which has had disastrous effects, particularly among poorer nations. In order to lessen the effects on human health and stop the spread of diseases, there should also be greater financing for programmers and projects that help people cope and adapt in the afflicted areas.
People and wildlife are impacted by climate change in many different ways, necessitating various adaptation measures. The objectives for these adaptation measures can be tied to biodiversity and ecosystem services at the global, national, and local levels, as well as health, water, or food security, jobs and employment, poverty eradication, and social equity. The objective is to lessen our risks from climate change's negative effects, such as rising sea levels, more intense extreme weather events, or food insecurity

REFERENCES

1. Akama, J. S., & Kieti, D. M. (2003). Measuring Tourist Satisfaction with Kenyas Wildlife Safari: A Case Study of Tasavo West National Park. Tourism Management, 24(1), 73–81. doi:10.1016/S0261- 5177(02)00044-4
2. Ballantyne, B., Packer, J., & Hughes, K. (2008). Environmental Awareness, Interests, and Motives of Botanic Gardens Visitors: Implications for Interpretive Practice. Tourism Management, 29(3), 439–444. doi: 10.1016/j.tourman.2007.05.006
3. Bang, J. M. (2005). Ecovillages: A Practical Guide to Sustainable Communities. New Society Publishers.
4. Climate Change Information Resources, New York Metropolitan Region. http://ccir.ciesin.columbia.edu/nyc/pdf/q1a.pdf
5. IPCC Online, Glossary of Terms Used in the IPCC Third Assessment Report (2001) IPCC_Third_Assessment_Report (Ac- cessed December 2009). http://en.wikipedia.org/wik/.
6. 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.
7. McCarthy, J. J. et al. (2001). Report of the Intergovernmental Panel on Climate Change. New York, USA: Cambridge Uni- versity Press.
8. McMichael, A. J., & Githeko, A. Human Health. In: Climate Change 2001: Impacts, Adaptation, and Vulnerability. Contri- bution of Working Group II to the Third Assessment.
9. New Climate Change Fact Sheet, Facts about Climate Change. http://www.thegreatwarming.com/pdf/ClimateChangeFact Sheet.pdf
10. Patz, J. et al. (2000). The Potential Health Impacts of Climate Variability and Change for the United States: Executive Sum- mary of the Report of the Health Sector of the US National Assessment. Environmental Health Perspectives, 108, 367-376.
11. Pounds, J.A., & R. Puschendorf (2004). Clouded Futures. Nature, 427, 8 January 2004.
12. 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.
13. Rooney, C. et al. (1998). Excess Mortality in England and Wales during the 1995 Heatwave. Journal of Epidemiology and Community Health, 52, 482-486.
14. Shindell, D. T. et al. (1998). Increased Polar Stratospheric Ozone Losses and Delayed Eventual Recovery Owing to Increasing Greenhouse Gas Concentrations. Nature, 392, 589-592.
15. Stern, N. (2006). The Economics of Climate Change—The Stern Review. Cambridge: Cambridge University Press
16. Sudip Mitra, Global Climate Change an Introduction. http://www.climate-leaders.org/wp-content/uploads/global-climatechange-sudipmitra.pdf
17. The Argo (2013) Typhoon Haiyan Hits Philippines: Stockton Community Takes Action, The Independent Student Newspaper of the Richard Stockton College of New Jersey. 83.
18. UNFCCC (UN Framework Convention on Climate Change) (2007). Climate Change: Impacts, Vulnerabilities and Adaptation in Developing Countries (p. 12). Bonn: UNFCCC.
19. Willetts, E., Guadagno, L., & Ikkala, N. (2010). Addressing Climate Change, Issues and Solutions from around the World (40 p). Editors. Gland, Switzerland: IUCN

BIOGRAPHIES

Prof. Tushar Bhambare
Assistant Professor, PCM Dept., MITCOM, MIT-ADT University, Pune

Ms. Nikita Sunil Chavan
Second Year student of MBA, PCM Dept., MITCOM, MIT-ADT University, Pune

Mr. Digvijay Dhanraj Patil
Second Year student of MBA, PCM Dept., MITCOM, MIT-ADT University, Pune