

INFLUENCE OF LOCAL ACTION PLAN ON CLIMATE CHANGE

Ms. Sukanya K. U *

* Research Scholar, N.S.S Training College, Ottapalam

Abstract

In addition to outlining the national and international perspectives, the article titled "Influence of Local Action Plan on Climate Change" covers the current climate change situation in Kerala state. The causes of climate change and their effects on the state's political, economic, cultural, and environmental facets are discussed in the study. The study also makes an effort to assess the mitigating measures that might be taken to lessen the impact. The goal of the study is to show that these mitigation measures will function more effectively if they are managed in a decentralized manner. The paper also supports the need for the process of creating a state-wide local action plan on climate change. It also outlines how a local action plan is conducted. The study focuses on the effectiveness of local self-governing organizations in planning and executing as well as the effectiveness of local action plans on climate change in reducing its impact. The article represents the concept of data gathering and gap analysis at the local level and its impact on the development of micro plans in the region. According to the study's conclusion, Local Self Governments may be highly useful for local planning and have a significant beneficial impact on lowering the state's ongoing climate change challenges.

Keywords: Climate change, Local action plan on climate change, local self-governing institutes, kerala climate change

Introduction

The Term "Climate" describes the recurring, long-term weather patterns that our planet encounters. To exist, all living things including people, animals, plants, and other creatures need a certain habitat and Long-term changes in temperature and weather patterns are referred to as climate change. These changes might be caused by natural processes, such oscillations in the solar cycle. But since the 1800s, human activities primarily the combustion of fossil fuels like coal, oil, and gas have been the primary cause of climate change. Climate change is one of the biggest risks to sustainable development, which is predicted to have negative effects on the environment, human health, food security, economic activity, natural resources, and physical infrastructure. The earth's climate varies naturally, but scientists concur that changes in the climate are caused by growing levels of greenhouse gasses from human activity in the atmosphere. The current evidence of climate changes are numerous such as extreme weather including heat waves, tropical cyclone severity, heavy rain, and droughts. Due to the dependence of farming on the quality of the rainy season, Kerala is particularly sensitive to climatic unpredictability and change. Rainfall might have a significant influence on the hydrological system and agricultural production in addition to these climatic elements. There are some signs that climate change may negatively impact human and animal health, water resources, economic stability, energy production, biodiversity, and food security. For a state like Kerala, which has the highest degree of decentralization and effective Local Self Governments in the nation, local bodies can deal with these climate changes on their own. Making similar location action plans will be an effective way to combat the effects of climate change.

Climate change global scenario

Climate change is a problem that is dramatically changing the climatic conditions on Earth which can be substantiated by the fact that since the dawn of human civilization, the atmosphere has had

roughly 275 parts per million (ppm) of carbon dioxide. That planet is the one where civilization first emerged and from which Earth life has evolved. Coal was first burned by humans in the 18th century, gas and oil are used to make commodities and energy. Carbon dioxide levels in the atmosphere started to increase, initially gradually and now more swiftly. Several activities individuals engage in rely on actions we take every day, such as lighting our houses, heating them, or preparing meals. energy sources that release gasses that retain heat, such as carbon dioxide. Industrial Urbanization and civilization are using carbon that was previously locked up for millions of years. fossil fuels that are kept underground and then released into the atmosphere. Currently, the atmosphere has 402 ppm of carbon dioxide, and 2 ppm more carbon dioxide is added to the atmosphere each year. Unless people have the ability to quickly change and go below 350 ppm this century, humans would be at danger of triggering.

Climate change in India

The scenario in India is no different from global conditions. According to UNICEF India ranks fifth internationally in terms of climate change vulnerability. Due to climate change, India suffered losses of almost 37 billion dollars in 2018. (Almost twice what it lost between 1998-2017) 1. According to NITI Aayog (2018), over 600 million Indians would experience "serious water shortages" in the upcoming years. The Indian Meteorology Department and the Indian Institute of Tropical Meteorology's analyses usually support the Intergovernmental Panel on Climate Change's findings about trends in temperature, heat waves, glaciers, droughts and floods, and sea level rise. In certain instances, the change's magnitude varies. While there hasn't been a national trend in monsoon rainfall over the past 100 years, there have been significant regional trends. The west coast, north Andhra Pradesh, and north-west India are among the regions where monsoon rainfall is rising, whereas east Madhya Pradesh and surrounding areas, north-east India, and portions of Gujarat and Kerala are among those where it is decreasing (-6 to -8 percent of normal over 100 years).

Climate Changes in Kerala

Kerala, affectionately known as "God's own country," is truly a land of eternal bliss and a tropical Eden is also highly vulnerable to climate change hence it has a very long coastline of 585 kilometers, of which 322 kilometers are at risk of severe sea erosion. Other issues include: Boundary shifts for various forest types, with consequent implications for species diversity and communities that depend on forests; Threats of sea level rise in the low-lying areas along the state's coastal areas; and Land degradation. The socioeconomic nature of the state is heavily dependent on climate-sensitive industries including agriculture, fishery, and forestry. Over the past few decades, Kerala has seen an increase in temperature and a decrease in annual and monsoon rainfall. According to research conducted by the India Meteorological Department, the mean annual maximum temperature across Kerala increased by 0.8 degrees Celsius, the lowest temperature by 0.2 degrees Celsius, and the average temperature increased by 0.5 degrees Celsius between 1961 and 2003. In February and March 2004, the highest recorded temperature in Palakkad was 41 degrees centigrade, with the day in question being April 26, 1950. According to the report, the hottest year across Kerala was 1987. The majority of meteorological variables do not significantly change Kerala climate. Rainfall fluctuations are the most notable changes. Temperature variations are fairly minor. In Kerala, seasons may be categorized using rainfall and temperature as the primary indicators. The timing of the monsoon's onset, withdrawal, and activity during the Indian summer monsoon rainfall season vary significantly from year to year in India and Kerala. Significant inter-annual variability is

observed in the rainfall caused by the northeast monsoon as well. Kerala summer monsoon rainfall shows a declining tendency of 12.03 cm over 100 years, whereas the northeastern monsoon shows an increasing trend of 6.6 cm. The land mass in Kerala is used to dry spells throughout the monsoon season and heavy rainfall during the summer.

Climate change and its impacts

Climate changes in the state affect various sectors of the economy such as agriculture, animal husbandry, fisheries and coastal ecosystem, energy, water resources, tourism, forest and biodiversity, health, education, urban front and transport. Climate change severely affects agricultural activities. Agriculture is an important subsector of the primary sector of Kerala's economy. The majority of people in the state are still dependent on agriculture for a living, either directly or indirectly. Drought and other extreme weather events, as well as other climatic variability, have significantly impacted the agriculture industry. Cash crops dominate Kerala's cropping patterns, and the impact of climate change on agriculture has a direct economic impact. Animal husbandry is also adversely impacted by climate change. Environmental variables including climate change, deforestation, altered wildlife habitats, and other land use changes, as well as human population increase and cross-border movement of people and animals, are leading to the emergence of several zoonotic illnesses. Climate change has an impact on the state's energy output as well, thus much of it depends on natural resources. The monsoon is necessary to maintain the hydropower base in the state, and a lack of rain typically leads to a power crisis and an increase in the percentage of electricity generated. Increasing temperature and low rainfall affects the water availability in the state. The state's fisheries and coastal resources are severely impacted by climate change. with the sea's rising warmth brought on by climate change. Sea level rise, increased sea temperatures, extremes of nitrogen enrichment (eutrophication), and invasive species are all expected to have an influence on coastal ecosystems and resources. Climate change has the potential to significantly worsen the state's forests and reduce biodiversity, having an impact on both individual species and the ecosystems that sustain those species.

Climate change and causes

There are many natural factors that contribute to climate change, as well as human activity. The major driver of climate change in the twentieth century was global warming brought on by human action, whereas the 1700s climate change was driven by volcanic eruptions and variations in solar energy. Since the Industrial Revolution, greenhouse gas levels have grown globally. The majority of the atmosphere's retention of greenhouse gasses has caused a slow increase in atmospheric temperature. Carbon dioxide (CO₂), methane (CH₄), and nitrous oxide (N₂O), three of the most prevalent gasses in the atmosphere, all contribute significantly to the retention of heat lost from the planet. Thus, they are referred to as greenhouse gasses. Human activities such as the excessive use of fossil fuels, deforestation, excessive use of chemical fertilizers, and industrial expansion are the main contributors to the atmosphere's high concentration of greenhouse gasses.

Mitigation measures

In order to mitigate the negative consequences of climate change or to seize possibilities presented by a changing climate, societies or ecosystems must undertake adjustments known as "adaptation." Complex interactions between climatic, environmental, economic, political, institutional, social, and technological systems are involved in climate change. It cannot be handled or understood in

isolation from other current or likely future sources of stress, or from more general social goals (such as equity or sustainable development). In the context of climate change, "mitigation" refers to human action to lessen the sources of emissions. Mitigation activities can be different for different aspects affected. In the agriculture sector smart agricultural practices like mulching, drip irrigation, increase the amount of organic carbon in the soil, usage of high yielding crop varieties can be practiced. Water availability issues due to climate change can be addressed through rainwater harvesting, sprinkler irrigation, by having a proper irrigation plan, usage of drought resistant plant varieties, usage of cover crops. Energy related problems due to climate change can be addressed through alteration in the consumption pattern of energy such as usage of renewable energy sources, reducing energy consumption, and increasing energy efficiency.

Climate change and local self government

Considering the unique conditions in Kerala, local governments play a vital role in preventing the disruption of the natural order, protecting the environment, and managing environmental repercussions. Local governments that directly affect a location's physical, cultural, sporting, and artistic aspects should give significant consideration to the area's sustainable development and make the required adjustments. New regulations must thus be implemented. In order to develop a policy framework for the post-flood Kerala, several working groups that have been established to address various severe occurrences connected to climate change must be examined. This enables the execution of practical actions and procedures. There isn't just one perfect answer to the climate change problem. Nevertheless, we may somewhat lessen the effects of climate change via adaptation and mitigation. Climate change concerns may thus be effectively handled by the panchayats with correct and scientific orientation. Climate has changed dramatically on a worldwide scale as a result of changes in temperature, humidity, wind, and rainfall. Local governments may discover a solution to the greatest problem of this century by evaluating the magnitude of changes in these aspects, pinpointing the precise scientific causes of them, and either reducing or totally addressing them.

Local Action Plan on Climate Change (LAPCC)

Each panchayat has a Local Action Plan on Climate Change, which identifies the effects that climate change has had on the local environment, biodiversity, and human life and develops measures to address them locally. Nearly every aspect of human life is currently being touched by climate change, including agriculture, livestock, fisheries, forestry, health, and the environment. These have enduring consequences. Therefore, the local government has a significant role to play in this context as it directly intervenes in local concerns. The goal of the initiative is for local governments to create a Local Action Plan on Climate Change, in which they will identify the effects that climate change has had on the local Panchayat (rural local government environment)'s biodiversity, and human lives, and develop solutions to those problems locally. Nearly every aspect of human life is currently being touched by climate change, including agriculture, livestock, fisheries, forestry, health, and the environment. These have enduring consequences. Therefore, the local government has a significant role to play in this respect as the entity that directly intervenes in local concerns.

How to Prepare the Local Action Plan on Climate Change- Methodology

The local governments have established a new working group called "Biodiversity, Climate Change, Environment and Disaster Management" to address the effects of climate change. To lessen or adapt to the issues brought on by climate change is one of the working group's key goals. Finding out

which places are all impacted by climate change and the severity of the issues is the first step in achieving this. Based on this, the Panchayat must develop a Local Action Plan on Climate Change. The chapters cover general information on the Panchayat, basics of climate change, impacts of climate change on the environment, human lives and biodiversity, extreme events including disasters and the possible local level interventions for climate change mitigation and adaptation. The first chapter describes the history, geography, resources, economy, and other details of the local body and the second chapter includes the information about the local climate changes that took place inside the panchayat can be obtained from the India Meteorological Department, from older residents, or from professionals in the area. Third chapter discusses the change in the climate and its impact in the area in various aspects using maps and data. The next chapter deals with the effect of particular climate change in agriculture, livestock, fisheries, and human life. Chapter six discusses the natural disasters occurred in the area and how it impacted the social, economical, political, and cultural aspect of the area. The final chapter discusses the possible intervention in the area that can be adapted to reduce the impact.

The importance of preparing a LAPCC

The greatest problem the world is now facing is climate change. The Nava Kerala Mission's aim includes tackling these issues. The Haritha Keralam Mission and Ardrum Mission activities demonstrate the need for and range of such interventions. Alappuzha, Idukki, Wayanad, and Palakkad in Kerala are particularly vulnerable to the effects of climate change. But during the 2018 floods, all of Kerala's districts were made to be extremely vulnerable. The average temperature, humidity, wind, and rainfall in Kerala have all changed somewhat, however the variations vary depending on the zone. As a result, climate change-related issues vary depending on where you live. The administration system of local governments has established a new working group called "Biodiversity Management, Climate Change, Environmental Conservation and Disaster Management" to address the effects of climate change. To lessen or adapt to the issues brought on by climate change is one of the working group's key goals. Finding out which places are all impacted by climate change and to what extent there are issues is the first step in achieving this. Taking into account the changes to the climatic factors during the previous 30 years, a Local Action Plan on Climate Change must be established for the panchayat on this premise.

Conclusion

Local self governments are at the front lines for planning and implementing climate adaptation strategies to minimize expected impacts resulting from extreme heat events. Local Self Governments can assist individuals by providing timely warnings about specific problems. Local Self Governments may serve as the major source of data, and by combining this data with scientific techniques and creating LAPCC, a region might undergo significant changes.

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