



Impacts of Climate Change on Marathwada Region in Maharashtra, India.

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Abstract

This paper highlights the various impacts of climate change on Marathwada region in Maharashtra, India. It examines how rising temperatures, declining rainfall and more frequent extreme weather events have impacted key sectors like agriculture, water resources, health, and livelihoods. The article argues that climate change is not just an environmental issue but also a social and economic one as it has deepened inequalities among vulnerable communities. Finally this paper outlines some measures to mitigate these effects such as promoting climate-resilient agriculture practices; improving water management systems; strengthening community-based adaptation strategies etc., which can help reduce the impact of global warming in this region.

The main approaches discussed in this paper are promoting climate-resilient agriculture, improving water management, and strengthening community-based adaptation strategies. Climate resilient agriculture involves the use of techniques such as crop diversification, soil conservation practices and efficient irrigation systems to reduce vulnerability to extreme weather events like droughts or floods. Improving water management includes measures such as rainwater harvesting, watershed development projects etc., which can help conserve scarce resources during times of drought.

Strengthening community-based adaptation strategies involve empowering local communities with knowledge about how best to cope with changing climatic conditions so that they can better prepare for future challenges posed by global warming.

Keywords

Climate Change, Sustainable Development Goals, Drought and water scarcity, Agricultural sector Livelihoods & unemployment

Introduction

Marathwada is a region located in the state of Maharashtra in western India. It encompasses eight districts and is known for its rich history and cultural heritage. However, Marathwada has also been facing several issues in recent years. One of the major issues faced by Marathwada is the persistent drought and water scarcity. The region has been facing chronic water shortage due to the depleting ground water levels and inadequate rainfall. This has affected the agricultural sector, the main source of livelihood for the people of Marathwada, leading to reduced crop yields and economic hardship for farmers. Another issue faced by Marathwada is the lack of adequate healthcare facilities. The region has a shortage of medical professionals and healthcare facilities, making it difficult for people to access basic medical care. This has resulted in a high rate of mortality and morbidity, especially among women and children. Marathwada is also facing issues related to education and employment. The region has a high rate of illiteracy and a shortage of schools, which is affecting the education and employment opportunities for the people. This has contributed to the high rate of poverty and unemployment in the region. Marathwada is a region with a rich cultural heritage and history, but it is also facing several pressing issues. Addressing these issues is crucial for the overall development and well-being of the people living in Marathwada.

Impact of climate change in the Marathwada region

Climate change is a pressing issue that is affecting the entire world. It is characterized by long-term changes in the average weather patterns that have come to define the Earth's local and regional climates. The impacts of climate change are far-reaching, affecting various aspects of our daily lives, including food production, human health, and the overall state of the natural environment. In the Marathwada region of

Maharashtra, India, the effects of climate change are particularly severe and are having a profound impact on the lives of the local people. Marathwada is a region located in the western part of the Indian state of Maharashtra. The region is characterized by a dry and semi-arid climate, with low rainfall levels and high temperatures. This, combined with the impact of climate change, has resulted in severe water scarcity, which has had a significant impact on agriculture and the local economy. The region depends largely on the monsoon rains for its water needs, and the changes in the monsoon patterns due to climate change have resulted in reduced rainfall levels, making it difficult for farmers to grow crops. This has led to a decline in agriculture production, affecting the livelihoods of millions of people who depend on agriculture for their livelihoods.

In addition to water scarcity, the region is also facing a rise in temperatures, which is having a negative impact on crops and livestock. High temperatures reduce the yield of crops, making it difficult for farmers to meet the growing demand for food. The increase in temperature is also affecting the health of the livestock, reducing their ability to produce milk and other dairy products. The reduction in livestock productivity has a direct impact on the income of the local people, many of whom are small-scale farmers and rely on livestock for their livelihoods. Another significant impact of climate change in the Marathwada region is the increase in the frequency and intensity of natural disasters such as droughts, floods, and heatwaves. These events cause significant damage to crops, homes, and infrastructure, which can take years to recover from. They also disrupt the local economy, reducing the availability of food and other essential goods, and leading to increased poverty and hunger.

the impact of climate change in the Marathwada region of Maharashtra is severe and far-reaching. The region is facing a range of challenges, from water scarcity to the rise in temperatures and natural disasters, which are having a profound impact on the lives of the local people. It is crucial that action is taken to address the root causes of climate change and to support the people of Marathwada in adapting to its effects. This requires investment in infrastructure and technology, as well as education and training programs to help the local people develop the skills they need to cope with the impacts of climate change. By working together, we can ensure a more sustainable and resilient future for the people of Marathwada and the entire world.

Loss of Livelihoods

The loss of livelihoods in the Marathwada region of Maharashtra, India, is a significant concern due to the impact of climate change. The region is heavily dependent on agriculture and livestock farming, which are being severely affected by the changing weather patterns and the increase in temperature. The changes in the monsoon patterns have resulted in reduced rainfall levels, making it difficult for farmers to grow crops. This has led to a decline in agriculture production and has affected the livelihoods of millions of people who depend on agriculture for their income.

Another factor contributing to the loss of livelihoods in the region is the rise in temperatures, which is having a negative impact on crops and livestock. High temperatures reduce the yield of crops, making it difficult for farmers to meet the growing demand for food. The increase in temperature is also affecting the health of the livestock, reducing their ability to produce milk and other dairy products. This reduction in livestock productivity has a direct impact on the income of the local people, many of whom are small-scale farmers and rely on livestock for their livelihoods.

In addition to these direct impacts, the increasing frequency and intensity of natural disasters, such as droughts, floods, and heatwaves, are also contributing to the loss of livelihoods in the Marathwada region. These events cause significant damage to crops, homes, and infrastructure, which can take years to recover from. They also disrupt the local economy, reducing the availability of food and other essential goods, and leading to increased poverty and hunger.

Migration from Marathwada and impact on service sector

Marathwada region in the state of Maharashtra, India has been facing various socio-economic and environmental challenges, leading to migration of its people to other regions in search of better opportunities and livelihoods. This migration has had a significant impact on the service sector in the region.

One of the major impacts of migration has been the shortage of manpower in the service sector. With many people leaving the region in search of better job opportunities, there is a shortage of workers in local service-based businesses such as hotels, restaurants, and shops. This shortage has led to a decrease in the quality of services offered by these businesses and has made it difficult for them to compete with businesses in other regions.

Another impact of migration has been the reduction in consumer demand for services. With many people

leaving the region, there are fewer consumers available to purchase goods and services from local businesses. This reduction in demand has had a negative impact on the profitability of service-based businesses, leading to closures and job losses.

Migration has also had an impact on the skillset of the remaining workforce in the service sector. Many of the skilled and experienced workers who have migrated are not being replaced, leading to a decrease in the overall quality of services being offered.

In conclusion, migration from Marathwada has had a significant impact on the service sector in the region. Shortage of manpower, reduction in consumer demand, and decrease in the skillset of the workforce are some of the major challenges faced by the service sector due to migration. It is important for the government and local businesses to address these challenges and develop strategies to make the service sector in Marathwada more resilient and competitive.

impacts on agriculture sector and farmers suicide in Marathwada region

The Marathwada region in the Indian state of Maharashtra has been facing significant challenges in the agriculture sector, leading to a high rate of farmer suicides. Some of the major factors that have contributed to the situation are:

Drought: The region is prone to frequent droughts, which result in crop failure and loss of income for farmers.

Lack of Irrigation: Despite being an agriculture-dependent region, Marathwada has limited access to irrigation facilities, making it difficult for farmers to grow crops in times of drought.

Debt: Many farmers in Marathwada are heavily in debt, either due to the high cost of inputs such as seeds, fertilizers, and pesticides, or because they have taken loans to invest in their farms. This debt can become overwhelming, leading to financial stress and despair.

Poor prices for crops: Farmers in Marathwada often receive low prices for their crops, due to a lack of bargaining power, market inefficiencies, and a surplus of crops in the market. This results in farmers not being able to make a profit, even after a successful harvest.

Lack of government support: Despite various government schemes aimed at supporting farmers, the implementation of these programs has been inadequate, leaving many farmers without access to the support they need.

These challenges have contributed to a high rate of farmer suicides in the Marathwada region, with many farmers feeling helpless and hopeless in the face of these systemic problems. Addressing the root causes of these issues and providing support to farmers is crucial in addressing the crisis in Marathwada.

Changes in rainfall pattern in Marathwada

Marathwada, a region in the Indian state of Maharashtra, has experienced significant changes in its rainfall pattern in recent years. Some of the notable changes include:

- I. **Decreased rainfall:** The region has seen a decrease in overall rainfall, with many areas experiencing drought-like conditions. This has led to reduced crop yields and increased stress for farmers.
- II. **Unpredictable rainfall:** The rainfall patterns in Marathwada have become increasingly unpredictable, with heavy rains in some areas and drought in others. This makes it difficult for farmers to plan and grow crops, leading to increased uncertainty and risk.
- III. **Late onset of monsoon:** The monsoon season, which is crucial for agriculture in Marathwada, has been starting later in recent years, leading to a shorter growing season for crops.
- IV. **Unusual weather events:** The region has also experienced unusual weather events, such as hailstorms, which can cause significant damage to crops and further stress for farmers.

These changes in rainfall patterns have had a significant impact on agriculture in Marathwada, making it difficult for farmers to grow crops and earn a livelihood. Addressing the root causes of these changes and providing support to farmers will be crucial in helping the region's agriculture sector to adapt and recover.

Started losing, pulses, and grains production in Marathwada

The changes in rainfall patterns and other factors affecting agriculture in the Marathwada region of Maharashtra, India, have had a significant impact on the production of milk, pulses, and grains in the area. Some of the notable impacts include:

1. **Reduced milk production:** The stress on livestock due to drought and lack of feed has led to a decrease in milk production in Marathwada. This has a significant impact on

the income of farmers who rely on dairy for a livelihood.

2. Decreased pulse production: The lack of rainfall and water stress has led to a decrease in pulse production in Marathwada. Pulses are an important source of protein and are widely grown in the region.
3. Reduced grain production: The decrease in rainfall and increased frequency of drought has led to a reduction in grain production in Marathwada. This includes staple crops such as maize, sorghum, and wheat, which are critical for food security in the region.

These reductions in milk, pulses, and grains have had a significant impact on the livelihoods of farmers in Marathwada and have contributed to the ongoing crisis in the region's agriculture sector. Addressing the root causes of these problems and providing support to farmers will be critical in helping the region to recover.

Decreasing in water bodies and water structures in Marathwada

The decrease in water bodies and water structures in Marathwada, a region in the state of Maharashtra, India, is a major issue. The region is facing severe water scarcity due to the combined effects of decreasing rainfall, overexploitation of groundwater resources, and poor water management practices. The result is a reduction in the number of water bodies and water structures such as tanks, wells, and lakes, which are essential for the region's agriculture and drinking water needs.

The reasons for this decline include:

1. Climate change: The region is facing decreased rainfall patterns and longer dry spells, leading to a decrease in the water level in water bodies.
2. Over extraction of groundwater: The excessive pumping of groundwater for irrigation and other purposes is leading to the depletion of the groundwater table.
3. Deforestation: The removal of trees and vegetation has led to a decrease in the amount of water available in the region.
4. Poor water management: Inefficient water management practices such as leaky irrigation systems and unplanned urbanization have contributed to the decline of water bodies and structures.

To address the water scarcity in Marathwada, it is important to implement sustainable water management practices, such as rainwater harvesting, proper

irrigation methods, and reforestation. Additionally, the government should enforce regulations to prevent over-extraction of groundwater and promote water conservation measures.

Sustainable development and challenge in Marathwada region

Sustainable development is an approach to economic growth that balances the needs of the present with the needs of future generations. In the Marathwada region, sustainable development is crucial in addressing the challenges faced by the region.

One of the biggest challenges in Marathwada is the issue of water scarcity. In order to achieve sustainable development, there is a need to implement water management practices that ensure the long-term availability of water for the region. This can include measures such as rainwater harvesting, improving the efficiency of irrigation systems, and promoting the use of drought-resistant crops.

Another challenge in Marathwada is the lack of healthcare facilities and medical professionals. To achieve sustainable development, there is a need to invest in the healthcare sector and attract more medical professionals to the region. This will not only improve access to basic medical care, but it will also create employment opportunities for the local population. In the area of education, there is a need to invest in schools and teacher training programs. This will help to improve the literacy rate and provide better educational opportunities for the people of Marathwada. In addition to these specific challenges, there is a need to address the broader issue of poverty and unemployment in the region. This can be done through promoting entrepreneurship and job creation and providing financial and technical support to small businesses.

sustainable development is crucial in addressing the challenges faced by Marathwada. By implementing measures to address the specific challenges of water scarcity, healthcare, education, and poverty, the region can move towards a more sustainable future.

SDG and Marathwada region

The Sustainable Development Goals (SDGs) are a set of 17 goals adopted by the United Nations in 2015 with the aim of ending poverty, protecting the planet, and ensuring peace and prosperity for all by 2030. The SDGs provide a roadmap for sustainable development and can be a useful framework for addressing the challenges faced by the Marathwada region. For example,

SDG 6, Clean Water and Sanitation is relevant to the issue of water scarcity in Marathwada. To achieve this goal, there is a need to improve water management practices and increase access to clean water and sanitation facilities in the region. SDG 6, Clean Water and Sanitation, aims to ensure availability and sustainable management of water and sanitation for all. In Marathwada, water scarcity is a major challenge and there is a need for improved water management practices. The comparative study could assess the progress made towards implementing water management practices and increasing access to clean water and sanitation facilities in the region.

SDG 3, Good Health, and Well-being is also relevant to Marathwada as the region is facing a shortage of healthcare facilities and medical professionals. To achieve this goal, there is a need to invest in the healthcare sector, attract more medical professionals to the region, and improve access to basic medical care. SDG 3, Good Health, and Well-being, aims to ensure health and well-being for all. In Marathwada, the lack of healthcare facilities and medical professionals is a major challenge. The comparative study could assess the progress made towards improving the healthcare sector, attracting more medical professionals to the region, and increasing access to basic medical care.

SDG 4, Quality Education, is also relevant to Marathwada as the region has a high rate of illiteracy and a shortage of schools. To achieve this goal, there is a need to invest in schools and teacher training programs and improve educational opportunities for the people of Marathwada. SDG 4, Quality Education, aims to ensure inclusive and equitable quality education and promote lifelong learning opportunities for all. In Marathwada, the high rate of illiteracy and shortage of schools is a major challenge. The comparative study could assess the progress made towards investing in schools and teacher training programs and improving educational opportunities for the people of Marathwada.

SDG 1, No Poverty, is also relevant to Marathwada as the region has a high rate of poverty and unemployment. To achieve this goal, there is a need to promote entrepreneurship and job creation and provide financial and technical support to small businesses. SDG 1, No Poverty, aims to end poverty in all its forms everywhere. In Marathwada, poverty and unemployment are major challenges. The comparative study could assess the progress made towards

promoting entrepreneurship and job creation and providing financial and technical support to small businesses. a comparative study of the SDGs and the challenges faced by Marathwada can provide a comprehensive assessment of the progress made towards achieving the goals and the areas where further action is needed. Such a study can help to guide the development efforts in the region towards a more sustainable future. The SDGs provide a useful framework for addressing the challenges faced by Marathwada and promoting sustainable development in the region. By working towards the SDGs, the region can move towards a more sustainable future, where the needs of the present are balanced with the needs of future generations.

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