

Takeaways from the IPCC's Special Report on Climate Change and Land for India

Aseem Kumar Anshu

1. Introduction

Intergovernmental Panel on Climate Change (IPCC) was established in 1988 by United Nations General Assembly. The primary task of IPCC was to prepare a comprehensive report based on the available scientific knowledge on climate science, the socio-economic impact of climate change, and potential response actions towards mitigation and adaptation. Since 1988, IPCC has released five cycles of assessment reports, each containing special reports. The first assessment report released by IPCC in 1990 focused mainly on the importance of climate change and the perspective challenges requiring international cooperation. The first assessment report played a decisive role in the constitution of UNFCCC, an international treaty to reduce global warming. The second assessment report released in 1995 provided crucial information, which led to the adoption of the Kyoto Protocol in 1997. The third assessment report in 2001 focussed on the impacts of climate change and strategies for adaptation. The fourth assessment report in 2007 laid a foundation for the post-Kyoto Protocol for limiting global warming to 2°C. The fifth assessment report was finalized in 2013-2014, which provided the scientific inputs for the Paris Agreement. The sixth assessment cycle is still under production, which includes the first special report on 'Global Warming of 1.5°C' released in 2014-2015, which was prepared on request by governments under the Paris Agreement.

2. Takeaways for India

The special report on Climate Change and Land by IPCC is the second special report of the sixth assessment cycle with a final report expected to be released around 2022. The second special report was released in 2019, and it is the first time that IPCC has focused its attention exclusively on the land. The report indicates that deforestation is one of the major contributors to the current GHG emission globally; hence conservation and restoration of the forest could play an instrumental role in the mitigation. According to the report, anthropogenic activities, such as agriculture, industries, cattle rearing, forestry, and urbanization affect the total GHG emission positively or negatively. It has also linked land degradation with several climate variables, including temperature, precipitation, and wind.

Extreme heat can reduce photosynthesis in plants and affects the growth rate of leaves and the tree. The decline in the plants in an area can be foreseen as soil erosion and hence land degradation. The report has anticipated that heat stress, and flooding will increase the chances of land degradation by reducing soil moisture, delayed planting, increased soil compaction, and thus losses of deciduous trees and vegetation. The IPCC report defines desertification as the degradation of land in arid, semi-arid, and dry sub-humid areas, known as drylands, induced by many factors, including anthropogenic activities and climatic variations. It has been projected that desertification will significantly increase due to climate change. The report states that a decline in vegetation can increase the rate of soil

erosion, which in turn increases the likelihood of sand and dust storms leading to a decrease in precipitation at the regional climate, thus further exacerbate desertification. Additionally, climate change is expected to impact food security through increased temperature, changed precipitation patterns, and increased frequency and intensity of extreme weather events. The report notices the impact of climate change on agricultural productivity, seasonal cropping pattern and yield, livestock productivity and nutritional compositions in the future.

Since India is among the developing countries that have multiple issues related to land and climate change, such as poorly planned urban development, deforestation, wetlands filling, high carbon emission etc. Apart from severe climate change witnessed in recent years, India has been experiencing several negative outcomes, such as land degradation, desertification, decline in crop yield, water and food insecurity, biodiversity loss, extreme rain, heat waves and dust storms, habitat loss and environmental and human health hazards. Nevertheless, the action plan on climate change prepared by the Government of India includes massive plantations across the country. India is committed to increasing its forest cover as much as to sink the additional carbon of amount 2.5 billion to 3 billion tonnes by 2031. Needless to say, Land and Climate Change report by IPCC can play a major role in policy framing related to land management and climate change mitigation and adaptation for the policymakers of India.

3. Reference

IPCC, 2019: Special Report on Climate Change and Land. Available online: <https://www.ipcc.ch/srccl/chapter/summary-for-policymakers/>

About authors



Aseem Kumar Anshu is Programme Officer (Policy) at the Centre for Environment, Energy and Climate Change, at Asian Development Research Institute, Patna. He specializes in field of Environmental Toxicology.