

Climate Change And Ecosystem Dynamics: A Multiscale Analysis of Biotic and Abiotic Interactions

Puspalata Parida¹ and Dr. Eshendra Kumar²

Research Scholar, Department of Zoology¹

Associate Professor, Department of Zoology²

Sunrise University, Alwar, Rajasthan, India

Abstract: Climate change, mostly driven by humans, is a worldwide issue in the 21st century. This study details climate change's extensive and varied consequences on ecosystems and ecosystem services. The complicated relationships between climate change and ecosystems are examined in terrestrial, aquatic, and marine settings. We note the special issues facing Southeast Asian ecosystems, where the ocean economy is vital to human subsistence. Environmental services including food, water, climatic control, nutrient cycling, and cultural significance are threatened by climate change. Ecosystems may become carbon sources, which affects climate regulation. Changes in disease vectors and landscapes threaten human health and culture. We stress international collaboration, as shown by the Paris Agreement, to mitigate climate change. We also support conservation and restoration efforts that include indigenous communities and ecological expertise. This article finds that ecosystems and human well-being are interdependent and that action is needed.

Keywords: Climate Change, Ecosystem Responses, Biodiversity Loss