



Global Environment: Importance, Issues, Conservation and Management

***Mr. Vijaykanth Bonkuri¹, Dr. Ramachandra Naik. M² and Sandeep Kumar³**

¹**Department of Biotechnology, West Virginia State University, United States**

²**Assistant Professor and Head, Department of Botany, BLDEA's, S.B Arts and K.C.P Science College, Vijayapur-586103, Karnataka, India.**

³**Ph.D. Scholar, Department of Agricultural Extension Education, Sri Karan Narendra Agriculture University, Jobner, Rajasthan**

*Corresponding Author's email: vbonkuri@wvstateu.edu

The environment has been the main topic of debate and discussion in the press as well as classrooms in each and every part of the world, and much has been discussed about the necessity to take action to protect this planet and provide awareness among people in this regard. Scientists predict that if climate changes continuously at the current trend then the temperature will increase at the rate of between 3 to 6 degrees Celsius by 2050 (Perry *et al.*, 2005). If temperature increases at this rate it would lead to a water crisis for millions of people, decrease and reduce agricultural yields, and increase death of millions of people because of malnutrition related diseases plus lead to the extinction of a large number of living species. Education plays an important and essential role in increasing awareness of environmental problems and challenges by shaping the behaviour and attitudes that make a difference. Simply said, the most widely used and well-known definition of the environment is that it is anything in our immediate environment. But as an educationist and our concern about the environment, we need a more comprehensive and broader definition that explains the complex social and ecological relationships among all living organisms, especially people to develop environment which surrounds them. Thus, a clear and simple definition is "the environment is the complex set of physical, geographic, biological, social, cultural, and political conditions that surround an individual or organism that ultimately determines its form and the nature of its survival" (Taras *et al.*, 2010). a drive and instinct into the people to defend and conserve the environment. Actually, the environment is a multi-blend part of biophysics and society because, there is no place on the earth's surface, where an environment (or nature) untouched by the impact of human beings. The environment is the product of both social and biophysical structures and processes. Both education and environment are two sides of the same coin and complement each other. On one side, education raises awareness among people and teaches them skills of environment protection and conservation as well as educates them about the importance and need of a healthy environment. On the other hand, a healthy environment supports in the continuation of the process of teaching and learning in a tranquil manner. Teachers and students are also physiologically and psychologically motivated by their surroundings through teaching and learning, respectively.

Importance of Environment

Biodiversity: The environment is home to a diverse range of plant and animal species, each playing a unique role in the ecosystem.

Natural resources: The environment provides valuable natural resources such as timber, minerals, and oil that are essential for human development.

Life support system: The environment provides the necessary resources for life, including air, water, food, and shelter.

Climate regulation: The environment plays a crucial role in regulating the Earth's climate through processes such as the water cycle and photosynthesis.

Human health: The environment has a direct impact on human health, with air and water pollution leading to respiratory problems, cancer, and other health issues.

Climate change mitigation: Protecting and restoring the environment is critical to mitigating climate change and reducing greenhouse gas emissions.

Environmental Issues

Environmental deterioration is a global issue that has an impact on the entire world. All forms of living organisms are affected by pollution in some way. Even organisms that reside in the poles or at the bottom of the ocean are harmed by pollution. Anthropogenic activity has led to the creation of several contaminants in recent decades, which have a harmful impact on the ecosystem (Rockstrom *et al.*, 2018). Conditions in developing nations are getting worse due to industrialization, urbanization, and deforestation rates. Greenhouse gases continuously increasing day by day and adversely impact the environment. Greenhouse gases mainly consist nitrous oxide, chlorofluorocarbon, methane and carbon dioxide.

Agricultural Residues Burning : An additional environmental risk in India is the open burning of crop waste in rural areas, especially during the rice harvesting season. The topic of burning agricultural trash in fields makes the front pages of newspapers in Delhi NCR twice a year, in the months of October and December. The region's ambient air quality has deteriorated due to the results of a static atmosphere state above Delhi during the Kharif agricultural harvest time (Kanawade *et al.*, 2019). Due to year-round crop farming, India, the second-largest agrarian economy in the world, produces a substantial amount of agricultural waste, including leftover crops. Soils in India are already under stress. Overuse of fertilizers during the Green Revolution degraded soils. Climate change worsens this. Intense rainfall leads to soil erosion and drought reduces soil moisture. Salinity increases in irrigated areas.

Water Pollution : Another big issue in India is water contamination. About 60% of sewage in metropolitan areas is untreated sewage, which regularly reaches various bodies of water. As a result, the water becomes contaminated and unsafe for human consumption. Farmers also commonly use contaminated river water to cultivate their crops, jeopardizing their health and compromising the food supply in India. Numerous waterways have high levels of heavy metal pollution, including the Ganga, the country's largest river and a holy river to Hindus, where thousands of people wash daily and assemble for the Kumbh Mela, the biggest religious celebration in the world. Heavy metals like Pb, Ni, Cr, Cd, and Cu were among the other prominent contaminants detected in the samples from different regions and Contamination from Pb, Cd, Ni, Cr, and Cu was more common during non-monsoon seasons, whereas Fe, Pb, Cr, and Cu commonly surpassed 'tolerance levels' during monsoon months. Ar and Zn are metals whose amounts were always within the study's limitations.

Desertification : India is the second-largest maker of agricultural items in the global despite having a little amount of land. Agriculture, forestry, and fisheries provide for 17% of the country's GDP and employ roughly 50% of the whole work force. Soil deterioration is caused by both natural and man-made processes (Bhattacharyya *et al.*, 2015). Anthropogenically driven soil degradation outcomes from land clearing and forest destruction, inappropriate farming techniques, inadequate management of industrial wastes and over-grazing (Osman, 2014). Inappropriate agricultural practices include excessive tillage and machinery use, inorganic fertilizer use, pesticide use, and organic carbon inputs.

Fluctuations of Climate : The Indian summer monsoon is central to life. It provides nearly 80% of annual rainfall. But monsoon behavior is changing. Rainfall is become more erratic. Some locations undergo droughts, while others face floods. Short, intense rain episodes are more typical. This presents challenges for farmers who depend on timely rainfall. Climate models project further variability. The Himalayas are called the "water towers of Asia." They feed rivers like the Ganga, Brahmaputra, and Indus. But glaciers are retreating. Studies show

most Himalayan glaciers are shrinking. The Gangotri glacier has receded by more than 1,500 meters in the last 70 years. Glacial lakes are forming due to melting. These lakes can burst, causing floods downstream. Such glacial lake outburst floods (GLOFs) are a rising risk. Glacier retreat affects water availability. Rivers fed by glaciers support millions of people. Reduced flow in summer months may harm agriculture and drinking water (Bolch *et al.*, 2012).

Strategies for Environmental Conservation and Management

Habitat protection: Habitat protection involves preserving natural habitats, including forests, wetlands, and oceans, and protecting them from development, pollution, and other threats. This helps to maintain the biodiversity of these areas and ensures that they continue to provide important ecological services, such as air and water filtration, carbon storage, and climate regulation.

Conservation of biodiversity: Protecting and maintaining the variety of life on Earth, including species, habitats, and genetic diversity, is known as biodiversity conservation. This include actions like reintroducing animals, protecting habitat, and putting laws and regulations in place to save endangered and threatened species.

Sustainable use of resources: The sustainable use of resources involves using natural resources in a responsible and sustainable way, balancing economic development with environmental protection. This includes practices like sustainable agriculture, responsible mining, and sustainable forestry, which aim to minimize the impact on the environment and maintain the long term health and productivity of natural resources.

Climate change mitigation and adaptation: Climate change mitigation strategies aim to minimize greenhouse gas emissions and slow the pace of climate change, while adaptation techniques strive to limit the impacts of climate shift in human societies and the environment environment. This covers measurements like the development of renewable energy sources, the implementation of energy efficiency measures, and the execution of adaptive measures like flood management and water conservation.

Conclusion

The global environment is our shared home, providing essential resources and supporting life. However, issues like climate change, pollution, deforestation, and biodiversity loss threaten its balance. Conservation and management are crucial to mitigate these impacts. Sustainable practices, like reducing waste, conserving water, and protecting ecosystems, can help. Governments, organizations, and individuals must work together to prioritize environmental health. By adopting eco-friendly habits and supporting conservation efforts, we can protect the planet for future generations. Small actions add up let's work together for a healthier global environment.

References

1. Perry, A. L., Low, P. J., Ellis, J. R., & Reynolds, J. D. (2005). Climate change and distribution shifts in marine fishes. *science*, 308(5730), 1912-1915.
2. Taras, V., Kirkman, B. L., & Steel, P. (2010). Examining the impact of Culture's consequences: a three-decade, multilevel, meta-analytic review of Hofstede's cultural value dimensions. *Journal of applied psychology*, 95(3), 405.
3. Rockström, J., Steffen, W., Noone, K., Persson, Å., Chapin, F. S., Lambin, E. F., ... & Foley, J. A. (2009). A safe operating space for humanity. *nature*, 461(7263), 472-475.
4. Kanawade, R., Kumar, A., Pawar, D., Vairagi, K., Late, D., Sarkar, S., ... & Mondal, S. (2019). Negative axicon tip-based fiber optic interferometer cavity sensor for volatile gas sensing. *Optics Express*, 27(5), 7277-7290.
5. Bhattacharyya, R., Ghosh, B. N., Mishra, P. K., Mandal, B., Rao, C. S., Sarkar, D., ... & Franzluebbers, A. J. (2015). Soil degradation in India: Challenges and potential solutions. *Sustainability*, 7(4), 3528-3570.

6. Osman, K. T. (2014). *Soil degradation, conservation and remediation* (Vol. 820). Dordrecht: Springer Netherlands.
7. Bolch, T., Kulkarni, A., Kääb, A., Huggel, C., Paul, F., Cogley, J. G., ... & Stoffel, M. (2012). The state and fate of Himalayan glaciers. *Science*, 336(6079), 310-314.

