



## Sustainable Development and Environmental Pollution

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### ORIGINAL ARTICLE



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### ABSTRACT

Concern for environmental health has arisen as a result of globalization and industrialization, which are outcomes of the universal desire for development in today's globe. Environmental problems, such as deforestation, fisheries collapse, fresh water scarcity, and air and water pollution's negative effects on human health, are putting more and more brakes on this progress. Additionally, our natural resources are being depleted as a result of this irresponsible development, and we will leave little for the generation that follows. After shedding light on several aspects, such as the notion of sustainable development and environmental pollution and their consequences on development, the author is attempting to attract attention in order to prevent environmental degradation. This study explores the many facets of development and the main causes of pollution, the latter of which has far-reaching consequences for the former. Everyone should adhere to the actions that we have outlined after receiving our many recommendations.

### KEY WORDS

Sustainable development, environmental pollution, Natural resources, Environmental health.

### INTRODUCTION

Degradation of the environment is a major contributor to the worsening of India's environmental situation. The scope of these problems differs across many contexts, and they involve multiple disciplines. Apparently, there are environmental issues on a worldwide scale and relatively few on a regional one. Acid rain, climate change, forest fires, ozone depletion, biodiversity loss, raising temperatures, and extinction of threatened species are all examples of environmental concerns that affect the entire world. In order to resolve

these issues, global collaboration was necessary. However, national or regional policies are necessary to address local environmental issues like deforestation, soil degradation, water pollution, air pollution, domestic solid waste, industrial hazardous waste, and land degradation (MDG Reports, 2009 & 2010).

The most common cause of environmental degradation is the excessive use of natural resources, which are then put to use in the process of what is commonly referred to as development. The United Nations defines environmental degradation as “the worsening in environmental quality from ambient attentions of pollutants and activities or processes such as improper land use and natural disasters” (United Nations, 1997). This definition was provided by the United Nations.<sup>1</sup>

The purpose of this research paper is to make an effort to investigate the local environmental problems that are prevalent in India. These problems in the environment have an impact on the well-being of people, and the work focuses mostly on domestic environmental issues. Detailed explanations of the repercussions that have an impact on environmental issues are provided in the second half of this paper, which focuses on the factors that contribute to environmental degradation. In addition, this section highlights the connections between environmental degradation and human well-being, and it also contains the factors that are driving changes in human well-being policies. The third section discusses the various aspects of human well-being as well as the methods used to assess it. The fourth section provides a definition of the environmental issues that are prevalent in India, with a primary emphasis on the local situation of water pollution and pollution.

### **Environmental Degradation: Causes and Consequences**

The term “environmental degradation” refers to the rapid extraction of natural resources as well as the abandonment and lack of maintenance of those resources. A primary cause for concern over the deterioration of the environment is the fast-expanding trend of industrialization, population and economic development, as well as the uncontrolled rise in urbanization. There are instances when environmental deterioration occurs naturally, and there are also occasions when it is induced by human beings. A primary contributor to environmental degradation is the depletion of natural resources, which in turn leads to the loss of biodiversity and habitats. Local, regional, and even global can all be included. There is a direct correlation between local environmental issues such as water pollution, air pollution, waste disposal, deforestation, and soil deterioration and the negative effects they have on human society. The majority of the city’s waste management is very inadequate, which has a negative impact on the population’s ability to make a living and survive. As a result, the number of diseases that are associated to garbage and water is growing.<sup>2</sup>

In 1972, the United Nations Conference on the Human Environment (UNCHD) was held in Stockholm. Subsequently, in 1982, the United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro. Both of these conferences emphasized the importance of Governments and institutions to safeguard the integrity of the environment on a worldwide scale.<sup>3</sup>

### **Water Challenges in India**

India is confronted with a complex web of water difficulties that connect with socio-economic, environmental, and health factors. This is due to the country’s different terrain, climates, and cultures. These difficulties have significant repercussions for the economic and social well-being of the nation’s population as well as the ecological integrity of its ecosystems. Despite having a population of over one billion people, India is struggling with significant water scarcity difficulties. These problems are made worse by the country’s fast expanding population, increasing urbanization, and shifting consumption patterns. Acute water shortages are affecting several regions in India, including Maharashtra, Rajasthan, and areas of southern India. This has resulted in decreased agricultural productivity and difficult living conditions for the local population. The intensification of water scarcity is further fueled by extraction practices that are not sustainable, poor water storage infrastructure, and wasteful water use in agricultural production.<sup>4</sup>

The allocation of water resources throughout the various regions of India is characterized by a striking unequal distribution. While some regions are experiencing severe water scarcity, others are dealing with an abundance of water during the monsoon season, which can result in flooding and waterlogging. As a result of pollution caused by industrial effluents, agricultural runoff, and inadequate sanitation systems, India faces a severe issue in terms of water quality. To put it simply, the contamination of water supplies with pollutants like heavy metals, chemicals, and microorganisms poses significant dangers to the health of the general population. A significant amount of water is consumed by agriculture, which is an essential component of the Indian economy. Ineffective irrigation methods, a reliance on crops that require a significant amount of water, and insufficient water-use efficiency all contribute to the strain that is being placed on water resources. Achieving a balance between the demand for agricultural output and the implementation of water management measures that are sustainable is the problem.<sup>5</sup>

India is extremely susceptible to the damaging effects of climate change, which include changing patterns of precipitation, rising temperatures, and an increase in the frequency of extreme weather events, all of which have an impact on the availability of water. The agricultural sector, which is mostly dependent on rainfall in many areas, is facing a huge challenge as a result of shifting monsoon patterns. Furthermore, the melting of Himalayan glaciers, which are an essential supply of freshwater for rivers, adds an additional layer of complexity to the water difficulties that India is contending with. It is vital to take measures to mitigate and adapt to the effects of climate change in order to ensure the long-term sustainability of water resources. In many regions of India, groundwater, which is an essential resource for agriculture and drinking water, is being drained at a rate that is alarming. The overexploitation of water resources, particularly for agricultural purposes, has resulted in the depletion of aquifers and the decline of water tables. India's water management has unusual issues as a result of the country's rapid urbanization. There is a higher demand for water for both home and industrial reasons in metropolitan centres because of the concentration of populations in these areas. Cities are experiencing increased water stress as a result of inadequate urban planning, unregulated groundwater extraction, and inadequate sewage treatment.<sup>6</sup> For example, women and communities that are underprivileged are disproportionately affected by water difficulties in India. These challenges frequently have differential implications on different social groups. In many rural regions, women are the ones who are responsible for collecting water, and it is essential for them to have access to water resources in order to meet the requirements of their households. The social dimensions that are entangled with water difficulties are highlighted by the fact that women's health, education, and overall well-being can be negatively impacted when they do not have access to clean water. According to a report that was published by NITI Aayog in June 2019, India is currently experiencing the most severe water crisis in the country's entire history. It is estimated that over 600 million people, or approximately 45 percent of the total population, in India are under elevated to severe water stress. The research goes on to state that by the year 2030, nearly forty percent of the population will be completely without access to drinking water, and that by the year 2050, the water crisis will have caused a loss of six percent of India's gross domestic product. By the year 2030, it is stated explicitly in Goal 6.1 that all nations, including India, should "achieve universal and equitable access to safe and affordable drinking water for all."<sup>7</sup>

## **New and Sustainable Water Management in India**

As a result of India's recognition of the critical need to handle water concerns in a comprehensive and forward-thinking manner, the country is currently witnessing a revolutionary transition toward new and sustainable water management practices. There are a number of significant developments and activities that define this ever-changing landscape. This section has addressed a few of the more prominent ones that have been brought up. To begin, India's population is currently the largest of any country in the world. Alongside this, the rate of urbanization is also accelerating at a rapid pace. In the picture that follows, we demonstrate how the urbanization profile of India is undergoing rapid transformations at an exceptional rate. In India, the

urban population will surpass the rural population within the next 15 to 20 years. This will happen nearly immediately. The metropolitan areas will experience a proportional growth in the number of industries, manufacturing bases, market places, offices, basic amenities, cars, and high-water demand as a result of this. It will result in a significant increase in the demand for water in both the commercial and residential sectors.<sup>8</sup>

In response to the water shortage, a number of worldwide initiatives have been launched across the world. Water shortage has been included as a focus area to be solved in the United Nations' Sustainable Development Goal 6 (SDG 6), as we have highlighted earlier. Different agencies of the UN such as the UNICEF, UNESCO and FAO have taken several steps to alleviate the water crisis. The United Nations Children's Fund (UNICEF) works at several levels to introduce context-specific solutions that expand access to safe water and alleviate the implications of water scarcity. This is because the issues that are causing water scarcity are complicated and quite different from country to country and region to region.<sup>9</sup>

## CONCLUSION

Ultimately, there are numerous stakeholders in the Indian context who must work together to achieve water sustainability. This includes Governments, civil societies, corporate bodies, financial institutions, and others. Stakeholders must also change their mindsets. Case studies, policy analyses, and governance assessments highlight the interconnectedness of water challenges and the need to align strategies with the Sustainable Development Goals (SDGs). Efficient water use across all sectors is a challenging task. As India faces issues like pollution and scarcity, the recommendation

An essential component of India's efforts to achieve sustainable water management is the widespread use of cutting-edge technology and practices across all sectors. The integration of rainwater collecting and wastewater treatment, as well as precision agriculture and smart water infrastructure in metropolitan areas, are all essential components of this journey toward transformation. In addition, the participation of the community, awareness campaigns, and educational programs all play significant roles in the development of a society that is water-conscious and actively contributes to conservation and preservation initiatives. It is necessary to have adaptive governance structures, strong laws, and collaborative frameworks in order to adequately address the challenges that continue to exist. These challenges include water disputes between states and industrial pollution. The synergy of policy reforms, technology improvements, and societal participation emerges as the key for ensuring long-term water security in the face of dynamic environmental and demographic changes. This is because India is beginning to chart its way toward sustainable water management. The implementation of sustainable water management in India not only secures a resilient water future for the nation, but it also highlights India's commitment to global efforts for environmental stewardship and the fulfilment of Sustainable Development Goal 6: Clean Water and Sanitation. This is because India is committed to achieving both of these goals.

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