

4. Environmental Degradation and Challenges Faced in 21st Century

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Abstract:

Environment in the 21st Century systematically addresses the larger issues of energy technology and the environment, providing an up-to-date assessment of projected energy requirements worldwide and of the ways these requirements can be met in an environmentally acceptable manner.

How to deal with the environmental consequences of energy use is a complex problem that poses a serious challenge to industrial leaders, policymakers, and research scientists the world over. Environment in the 21st Century systematically addresses the larger issues of energy technology and the environment, providing an up-to-date assessment of projected energy requirements worldwide and of the ways these requirements can be met in an environmentally acceptable manner. This valuable compendium of more than eighty original contributions provides the basis for an international agenda of energy and environmental technology and policy. The various chapters are united by the theme that new and improved energy technologies are central to meeting humanity's goals of environmental, economic, and social well-being.

4.1 Introduction:

Environmental degradation has become a common concern for humankind over the past few decades. The distinctive nature of the present environmental problems is that they are caused more by anthropogenic means than by natural phenomena [1].

Mindless consumerism and economic growth have started to demonstrate pernicious effects on Mother Nature. In spite of this, the pace and desire for economic development have never ceased. It is the branch economics that has dictated environmental policy and its effect on the resources.

Emphasis has been placed on the role of science and technology as a catalyst for integrating ecology with economics to heal the damage cause to the environment. In this process, sustainable development became a buzzword to fight against human greediness and save resources for future generations [2]. Environmental degradation is the deterioration of the environment through depletion of resources such as air, water and soil; the destruction of ecosystems and the extinction of wildlife. It is defined as any change or disturbance to the environment perceived to be deleterious or undesirable.

Environmental impact or degradation is caused by the combination of an already very large and increasing human population, continually increasing economic growth or per capita affluence and the application of resource depleting and polluting technology. Environmental degradation is one of the Ten Threats officially cautioned by the High-Level Threat Panel of the United Nations.

The United Nations International Strategy for Disaster Reduction defines environmental degradation as the reduction of the capacity of the environment to meet social and ecological objectives and needs. Environmental degradation is of many types. When natural habitats are destroyed or natural resources are depleted, the environment is degraded. Efforts to counteract this problem include environmental protection and environmental resources management.

4.2 Environmental Degradation are as Follows:

- **Climate Change:**

Climate change occurs due to pollution of the atmosphere by greenhouse gases (and by other) is now regarded as one of the major global environmental issues. It occurs largely as a result of the burning of fossil fuels, emissions from agriculture, and land-use changes that accompanies the destruction, clearance and burning of forests.

Climate change already has noticeable ecological and social effects, and its projected impacts could potentially result in profound changes in global mean surface temperature, sea level, ocean circulation, precipitation patterns, climatic zones, species distributions and ecosystem function [3].

- **Stratospheric Ozone Depletion:**

The depletion of stratospheric ozone occurs due to the pollution of the atmosphere by chlorofluorocarbons (CFCs) which are another serious environmental issue. It is a significant concern because the lack of protective ozone at high altitudes results in increased levels of harmful solar ultraviolet (UV-B) radiation reaching the earth's surface, causing a range of health-related issues and ecological impacts [4].

- **Degraded Air Quality:**

There are various forms of air pollution which are significant, particularly at regional and local scales, as they seriously degrade the air quality; worldwide, According to various reports, approximately one billion people who reside in areas that mainly include industrial cities suffer the most from the pollution. Many air pollutants are responsible for the degradation of air quality, but some key pollutants include particulate matters such as oxides of nitrogen, oxides of sulphur, lead and various aromatic compounds (such as benzene). Many air pollutants may cause aggravate respiratory and vascular illnesses; some are known carcinogens; and some can cause damage to vegetation and, in turn, produce a range of ecological effects [5].

- **Degraded Water Quality:**

Water quality can also be seriously degraded by impurities caused by pollutants, giving rise to a range of many health-related and ecological effects [6]. A major source of water pollution is the terrestrial run-off to inshore waters that occurs in many coastal locations; such as surface run-off may contain significantly elevated levels of nitrogen and phosphorus from agricultural land and from human settlements. Many other human activities lead to water pollution, including mining and industrial processes, which may discharge of toxic effluents. Oil spills, accumulation of plastics and the bio accumulation of persistent organic chemicals are some of the other causes of serious degradation of the marine environment.

- **Deforestation:**

It has been estimated that around half of the world's mature forests have been cleared by humans. Deforestation occurs for a variety of reasons, but the majority of deforestation now occurs when tropical forests are cleared for agriculture and pastoralism; other reasons include the destruction of trees for charcoal production and the selective logging of forests for timber.

Whilst tropical forests cover only around 6% of the earth's surface, they are an essential part of the global ecosystem and of the biosphere: they help to regulate climate; they protect soils from erosion; and they provide habitats for a vast number of plant and animal species. One estimate suggests that around 90% of the world's species are found in tropical forest.

4.3 Effects of Environmental Degradation:

- **Physical Environment:**

Healthy physical environment is the basic requirement for our economic and social soundness. Need of the hour is that there should not be air, water and even noise pollution. The refreshing atmosphere will improve the health standard of the people. It will build sound mind and sound body. Consequently health, energetic and efficient working force will add considerably to the production and the productivity of the nation [7].

- **Economic Environment:**

Our economic development and growth is also considerably affected by economic environment. The survival and success of a business enterprise is fully decided by the economic environment and market conditions [8].

- **Loss of Biodiversity:**

Biodiversity is vital to sustain balance of the ecosystem in the form of combating pollution, restoring nutrients, protecting water sources and stabilizing climate. Deforestation, global warming, overpopulation and pollution are few of the major causes for loss of biodiversity [9].

- **Loss for Tourism Industry:**

Speedy activities of tourism industry is also responsible for the worsening of environment that rely on tourists for their daily livelihood. Environmental damage in the form of loss of green cover, loss of biodiversity, landfills, and increase air and water pollution can be a big turn off for most of the travellers.

- **Economic Impact:**

The huge cost that a nation may have to borne due to environmental degradation can have huge economic impact in terms of restoration of green cover, cleaning up of landfills and protection of endangered species. The economic impact can also be in terms of loss of tourism industry. The potentials of human economic activity leading to regional and world-wide conflicts especially as the emission of dangerous gases into the atmosphere (environmental degradation) results in changes in agriculture production and inaccessibility of resources eventually causing food scarcities [10].

4.4 Challenges in 21st Century:

- **Public Health:**

Many of the issues we face all tie back into one central concern – public health. Pollution, water scarcity and overpopulation all present a clear threat to public health. Nearly one out of every four deaths each year are directly caused by unhealthy environments, according to the WHO. Even in developed countries, the growing anti-vaccination movement threatens public health, causing a resurgence in diseases like measles that were almost completely obliterated. The health and wellness of human beings is an important issue to watch. What people eat, drink and breathe in play a significant role in their wellness. Polluted air and water are a mounting crisis we need to address.

- **Water-Related Challenges:**

According to the report of UNICEF (2017) 2.1 billion people lack access to safely managed drinking water services and 4.5 billion lack safely managed sanitation services. Also 340,000 children under five die every year from diarrhoeal diseases. Water scarcity already affects four out of every 10 people and according to UNISDR 90% of natural disasters are water-related. If we spot some light on UNESCO Report (2017) we found that 80% of wastewater flows back into the ecosystem without being treated or reused. Around two-third of the world's trans boundary rivers do not have a cooperative management framework and agriculture accounts for 70% of global water with drawl [11].

- **Population:**

Rapid population growth puts strain on natural resources which results in degradation of our environment. Mortality rate has gone down due to better medical facilities which have resulted in increased lifespan.

More population simply means more demand for food, clothes and shelter. You need more space to grow food and provide homes to millions of people. This results in deforestation which is another factor of environmental degradation.

- **Ecosystems and Endangered Species:**

Due to the list of environmental issues happening on this planet, both ecosystems and species are affected. In fact, one out of every 10 plants and animal species is expected to go extinct by 2050. The endangered species list continues to grow as ecosystems continue to decrease. Lost habitats mean losing the species that live there. While some may be able to migrate elsewhere, others are not so lucky. With the rising temperatures of the Arctic, sea ice melts, which eliminates the habitat of polar bears. The list of endangered species includes other animals as well. The best way to save species is to support organizations dedicated to fighting species extinction. By supporting the cause, you're helping to combat the issue. You can also find laws and government acts available to sign that protect ecosystems and endangered species [12].

- **Effects of Industrialization and Globalization:**

Industrialization is the process of developing industries in a country which brings the social & economic change and changes the face of a nation. It also plays an important role in modern business and leads to the urbanization. The industrialization is the basic element of any economy. The unfair pay rates, working hours and labor disputes may affect the overall business. The lack of sanitation, pollution and health issues are other negative sides of the industrialization.

Globalization in modern business is an interconnection of global markets and managing the overall businesses in a global industry by fulfilling all the global requirements to perform businesses in the global market. It is one of the main pillars of overall business and economy.

To run business globally; there are various terms & conditions, policies, procedures, rules and maximum funding. The proper care should be given to the research & development and technology sector. There is inequality in income. For an example, the same company delivers huge salary to the employees in the United States of America as compared to that running in India, Philippines, or Brazil. It also affects the capital flow as the maximum generated profit is taken back to the parent country [13].

4.5 Conclusion:

The impact of environmental disasters can be devastating on the social, economic, and environmental systems of a country or region as well as the global ecosystem. Environmental disasters do not recognise man-made borders, and threaten the legacy left to future generations of a clean and supportive environment. Thus, Governments, International organizations and communities must work together – at all levels – to lessen the risks associated with environmental degradation and its contributing factors, such as climate change, and ensure that vulnerable people are prepared to survive and adapt.

At the same time, companies, organizations and individuals must also ensure that their work is environmentally friendly and sustainable [14]. We should always remember that pollution problems affect us all so each of us has to do his or her best to help restore ecological balance to this beautiful place we call home. The primary causes of environmental degradation in India are attributed to the rapid growth of population in combination with economic development and overuse of natural resources. Air, water and noise pollution together with water scarcity dominate the environmental issues in India. According to World Bank estimate, between India has made one of the fastest progresses in the world, in addressing its environmental issues and improving its environmental quality. Still, India has a long way to go to reach environmental quality similar to those enjoyed in developed economies.[15]

4.6 Suggestions to Overcome the Problem:

- **Social Awareness:** It is the need of the hour to spread social awareness about the dangers of pollution. It is also required how each individual can contribute to check this problem.
- **Population Control:** If environment is to be protected it is essential to check population growth.
- **Strict Application of Environment Conservation Act:** The Environment (Protection) Act was passed in 1986 in India. Its objective was to check deterioration in the quality of environment. This legislative measure should be strictly enforced.
- **Control over Industrial and Agricultural Pollution:** It is necessary for environmental protection that air and water pollution caused by industrial development should be controlled properly. To avoid agricultural pollution, use of pesticides and chemical fertilizers should be minimized.
- **Afforestation Campaign:** Extensive afforestation campaign should be launched in the interest of environment protection.
- **Water Management:** River waters should be made clean. Moreover, provision should be made to supply clean drinking water to the rural population.
- **Management of Solid Waste:** Planned management of solid waste is very essential. It is suggested that rural garbage be converted into compost.

4.7 References:

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