
RESOLVING THE ENVIRONMENTAL CRISIS THROUGH LAND RESTORATION

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Abstract:

Land restoration in India is an important and necessary endeavor, which is beneficial to the environment, economy, and society. Sustainable agricultural practices, soil conservation, water resource management, and community participation are needed to prevent land degradation and restore soil fertility. Government, non-governmental organizations, and civil society must actively participate in land restoration efforts. Only then can we save our land from being barren and move towards a healthy, green, and prosperous future. Land restoration is important not only for the current generation, but also for future generations, as it is a foundational element for sustainable development and environmental sustainability. The environment and the earth are complementary to each other. Protecting the environment will protect the planet. The environment is the source of life for animals. Land reclamation will protect the environment. Land restoration reduces the level of climate change. Restoration of land leads to restoration of the environment. Therefore, we can say that land restoration is the solution to the environmental crisis.

Keywords- Sustainable Development Goals (SDGs), Chlorofluorocarbon (CFC), Reclamation, Mitigation

Introduction

Environment is an integral part of life. The environment is the soul of the earth. Land is an important component of the environment. Land is used for agriculture, wildlife habitat, water conservation and climate regulation. Overexploitation and mismanagement of land in the last

few decades have severely damaged it. Land restoration is a process in which we seek to restore environmental, economic and social benefits. Rapid urbanization leads to over-exploitation of land. When land is over-exploited, its fertility decreases. Indiscriminate deforestation leads to soil degradation. This increases the risk of climate change. Pollution also affects the quality of soil. Increase in wasteland, reduction in food security and destruction of biodiversity is caused by land degradation. Extreme droughts, water shortages, fires, rising sea levels, floods, melting polar ice, devastating storms, and declining biodiversity are all part of the consequences of climate change. Therefore, factors of land degradation, drought and desertification, Such as climate change, must also be eliminated.

Measures for restoration of land:-

Land reclamation is a complex process. This can be achieved through the following concrete measures: 1. Prevent deforestation and initiate new plantation programmes 2. Use of techniques like terracing, cover cropping and low tillage for soil conservation 3. Proper management of water resources through water conservation and rain water harvesting 4. Involvement of local communities in land restoration efforts. Land degradation is a serious environmental problem that has a significant impact on the environment, society and economy globally. This process occurs when the quality and productivity of land declines due to various natural and man made causes.

Causes of land degradation:-

1. Excessive cultivation - Continuous cultivation of crops reduces the fertility of soil. When the same type of crop is grown repeatedly, there is an imbalance of soil nutrients. As a result, the quality of soil deteriorates. Additionally, excessive use of chemical fertilizers and pesticides damages soil structure and biodiversity
2. Deforestation - Indiscriminate deforestation is another important cause of land degradation. In the absence of tree roots, soil erosion is rapid. Trees help to stabilize the soil. Without a tree, the soil drains more quickly. Due to which the land becomes barren and its fertility ends.
3. Air and water pollution- Water and air pollution also contribute to land degradation. Due to industrial waste and chemical fertilizers, the pollutants present in the water enter the soil, which reduces the quality of the soil. Air pollution causes acid rain, which affects the pH level of the soil and destroys its fertility.
4. Urbanization and Industrialization- Rapid urbanization and industrialization have transformed natural lands into concrete jungles. This affects the natural structure and water holding capacity of the land. Construction activities and disposal of industrial waste add pollution to the land, thereby reducing its productivity.
5. Climate change- Climate change is causing land degradation. Soil degradation occurs due to natural calamities like

excessive rainfall, floods and droughts. In addition, an increase in temperature leads to a decrease in soil moisture, which affects the fertility of the soil.

Effects of land degradation:-

1. Effects on food security- Land degradation have the most direct impact on food security. When the fertility of the land decreases, the yield of crops decreases. This leads to a decline in agricultural production, which poses a serious threat to global food security. Lack of food increases the problem of hunger and malnutrition.
2. Impact on water resources - Land degradation also affects water resources. Water retention decreases as the water holding capacity of the soil decreases. In addition, soil erosion causes silt to accumulate in reservoirs and rivers, reducing their water holding capacity and quality. This has created the water crisis.
3. Effect on biodiversity- Natural habitats are destroyed due to land degradation, which has a negative impact on biodiversity. With the destruction of wildlife habitats, many species are on the verge of extinction. This disturbs the balance of the ecosystem and causes environmental problems.
4. Social and economic impacts - Land degradation also has a profound impact on society and economy. The fall in agricultural production reduces the income of farmers, which affects their economic condition. Lack of means of livelihood in rural areas leads to migration and unemployment in urban areas. In addition, governments have to spend heavily to address problems related to land degradation, which hampers economic growth.
5. Effects of climate change- Land degradation also affects climate change. When the quality of soil decreases, its ability to absorb carbon also decreases. As a result, the amount of carbon dioxide in the atmosphere increases, which accelerates climate change by increases the level of greenhouse gases.

Remedies and solutions:-

Several measures can be taken to deal with the problem of land degradation:

1. Sustainable Agricultural Practices Land degradation can be reduced by adopting sustainable agricultural practices. The use of techniques such as crop rotation, organic farming, and low tillage helps to maintain soil fertility.
 2. Conservation and restoration of forests - Preservation of forests and organising new plantation programmes are helpful in preventing land degradation. This not only reduces soil degradation but also conserves biodiversity and ecosystems.
 3. Soil Conservation Techniques - Soil degradation can be reduced by using soil conservation techniques and concreting. These techniques are helpful in improving the soil structure and increasing its water holding capacity. Soil conservation techniques are the set of methods and practices that are used to maintain soil quality, fertility and stability. These technologies play an important role in preventing land degradation and improving agricultural production.
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Key soil conservation techniques:

1. Crop rotation - Crop rotation means growing different crops in a fixed order. This maintains the nutrient balance of the soil and reduces the incidence of pests and diseases. Cover cropping (crops covering soil) - Cover cropping involves growing crops to cover the soil during the field's free period, such as clover or oats. This reduces soil erosion and maintains its fertility.
2. Contour ploughing - In contour ploughing, ploughing is done in parallel lines on sloping land. This can control water currents and reduce soil erosion.
3. Terracing (Terraced) - Terracing consists of the construction of terraced slopes in mountainous areas. This slows down the flow of water and reduces soil erosion.
4. Strip cropping (planting crops with strips) - In strip cropping, different types of crops are grown in strips one after the other. This helps protect the soil surface and helps conserve water.
5. Use of organic manure. The use of organic manure increases soil fertility and biodiversity. This improves the soil structure and retains its nutrients.
6. Lower ploughing - In lower tillage, the soil surface is minimally inverted, thereby maintaining Soil structure and water holding capacity. By using soil conservation techniques we can not only maintain the quality of soil but also increase the productivity of land. By adopting these technologies, farmers get long-term benefits and also promote environmental sustainability.
7. Water Resources Management - Proper management of water resources plays an important role in preventing land degradation. Water resources can be conserved using water conservation, rainwater harvesting, and irrigation techniques. Community participation Community participation is essential to tackle the problem of land degradation. Making local communities aware and involving them in land restoration efforts can be effective solutions. Land degradation is a serious challenge but can be controlled through sustained efforts and appropriate policies. We need to work collectively to preserve our environment and maintain the fertility of the land. Only then can we make our future secure and prosperous.

Sustainable development and land resortation:-

The goal of sustainable development is to balance economic growth with environmental sustainability. Land restoration is important in this context as it contributes to food security, water conservation and conservation of biodiversity.

The global efforts:-

Several international initiatives have been launched for land restoration. Some of the major ones are: 1. UNCCD (United Nations Convention to Combat Desertification) - is an international agreement established with the aim of preventing and controlling land degradation in wastelands and drought-affected areas. It was established in 1994 and became effective in 1996. The headquarters of UNCCD is located in Bonn, Germany. The main objective of UNCCD is to encourage global action against land degradation and desertification. It particularly focuses on areas that are affected due to severe drought and barren lands. The Convention recognises that land degradation is a global problem that can be addressed through sustainable land management and policy-making. Under the UNCCD, Member States develop and implement action plans at the national, regional and international levels. These schemes aim to restore the fertility of the land, conserve water resources, and improve the quality of life of local communities.

UNCCD works closely with local communities, non-governmental organizations, and other stakeholders to achieve the Sustainable Development Goals (SDGs). The importance of UNCCD lies in the fact that it provides a joint and coordinated approach to combat challenges such as land degradation and desertification at the global level. It promotes environmental sustainability and development. 2. Bonn Challenge - It aims to restore 350 million hectares of wasteland by 2030. It is a global effort that aims to restore 150 million hectares of degraded and damaged land by 2020 and 350 million hectares by 2030. It was launched in 2011 in Bonn, Germany. The Bonn Challenge aims to restore ecosystems, combat climate change, and preserve biodiversity. The Bonn Challenge adopts a holistic approach to land restoration in collaboration with various governments, organizations, and communities, promoting sustainable development locally and globally. (3) Decade on Ecosystem Restoration- The UN Mission is for the period from 2021 to 2030, which aims to revitalize ecosystems. It aims to regenerate ecosystems across the globe, encompassing land, marine and coastal areas. The campaign emphasizes the restoration of ecosystems to combat climate change, preserve biodiversity, and improve food security. Under this, various countries, organizations, and communities are inspired to work together to restore more than 350 million hectares of barren and damaged land. The Decade on Ecosystem Restoration is an important initiative to achieve the Sustainable Development Goals (SDGs), particularly on climate action, improving the quality of life, and promoting sustainable use of land.

Land restoration in India: - is an agricultural country, where conservation of land is very important. Conservation of land quality and productivity is extremely important, as land degradation is not only a threat to food security, but also to economic stability and environmental balance. In a country like India, many schemes and programs are being run for land restoration.

1. National Agriculture and Soil Conservation Programme- The objective of the programme is to promote soil conservation and sustainable agricultural practices. The programme is aimed at promoting soil conservation and sustainable agricultural practices. Under this, farmers are motivated to use techniques such as organic farming, crop rotation, and low tillage. Efforts are made to maintain soil quality and enhance its fertility through soil conservation techniques.

2. The Green India Mission- The Mission focuses on conservation of forests and improvement of environment through tree plantation. The Green India Mission focuses on conserving forests and

improving the environment through tree plantation. Under this, various initiatives are taken to prevent indiscriminate felling of forests and to promote new plantation programmes. Through forest restoration, not only the fertility of the land can be restored, but the effects of climate change can also be mitigated.

3. Jal Shakti Abhiyan - It aims to conserve and manage water resources, which is also helpful in land restoration. The objective of Jal Shakti Abhiyan is to conserve and manage water resources, which is also helpful in land restoration. Water resources are conserved through water conservation, rainwater harvesting, and irrigation techniques. This increases the water holding capacity of the land and improves its productivity.

4. Pradhan Mantri Kisan Yojana- Under the Pradhan Mantri Kisan Yojana, financial assistance is provided to farmers so that they are motivated to adopt sustainable agricultural practices. This scheme is helpful in improving agricultural production, maintaining the quality of land, and strengthening the economic condition of farmers. Land restoration in India is an important and necessary endeavor, which is beneficial to the environment, economy, and society. Sustainable agricultural practices, soil conservation, water resource management, and community participation are needed to prevent land degradation and restore soil fertility. Government, non-governmental organizations, and civil society must actively participate in land restoration efforts. Only then can we save our land from being barren and move towards a healthy, green, and prosperous future. Land restoration is important not only for the current generation, but also for future generations, as it is a foundational element for sustainable development and environmental sustainability.

Conclusion:

Land restoration is a collective responsibility, requiring the participation of government, non-governmental organizations, and civil society. We have to understand how important the condition of our land is to our environment, our economy, and our society. Through sustainable agriculture, soil conservation, and community participation, we can achieve the goal of land restoration. The environment and the earth are complementary to each other. Protecting the environment will protect the planet. The environment is the source of life for animals. Land reclamation will protect the environment. Land restoration reduces the level of climate change. Restoration of land leads to restoration of the environment. Therefore, we can say that land restoration is the solution to the environmental crisis.

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