Scholars on Africa

DEPARTMENT OF AFRICAN STUDIES
FACULTY OF SOCIAL SCIENCES
UNIVERSITY OF DELHI, INDIA
www.as.du.ac.in

Soil Degradation in Africa

We often imagine soil as an infinite and indestructible resource, yet this perception is far from reality. Only a mere 7.5 percent of the earth's surface provides the soil essential for agriculture, and this soil is astonishingly fragile. Topsoil, which is integral for growing 95 percent of our food, is eroding at a rate ten times faster than it can be naturally replenished. Healthy soil is a dynamic, living ecosystem—a complex amalgamation of minerals and organic matter teeming with air, water, and life. Hidden within a single gram of soil, there can be up to 50,000 species, all interacting to maintain a productive and healthy habitat. The activities of these organisms, combined with the type of rock particles, the volume of organic matter, and the balance of air and water, give rise to hundreds of soil types ranging from loose, sandy soils to waterlogged peats to the agriculturally prized loam. However, human activity has disrupted this delicate balance, leading to the degradation of one-third of the world's soil.

Healthy soil is the root source of a livelihood that sustains farmers and communities all around the world: good soil produces good crops that deliver a good income, enabling families to flourish. But it’s more than this. Soil filters the water we drink, grows the food we eat, and captures the carbon dioxide that causes climate change. Soil is the largest carbon sink after the ocean and holds more carbon than all terrestrial plant life on the planet. But when we damage the soil, water systems become disrupted, food production declines, and carbon is released into the atmosphere. Any one of these essential soil functions would be reason enough to preserve our soil; taken together, they are a compelling argument for urgent action.

In Africa, a continent blessed with rich cultural diversity and abundant natural resources, the issue of declining soil quality poses a formidable challenge to agricultural productivity, food security, and economic development. The backbone of Africa's economy, agriculture supports over 60 percent of its population. Yet the continent confronts a severe threat in the form of soil degradation, characterized by the loss of fertility, structure, and biodiversity. This degradation is driven by a multitude of factors, including climatic conditions, unsustainable agricultural practices, deforestation, and socio-economic dynamics. As Africa grapples with feeding its population, the degradation of soil health exacerbates the struggle. Despite possessing 65 percent of the world's remaining uncultivated arable land, Africa spends approximately $60 billion annually on food imports—a figure projected to rise to $110 billion by 2025 due to increased demand and shifting consumption habits.

In May 2024, Kenya hosted an Africa-wide soil health summit to discuss declining production, climate change, and other issues that have increased food security concerns. Under the theme "Listen to the Land," the summit showcased Africa's collective resolve to transform its agricultural landscape. Attended by seven presidents from the Central African Republic, Equatorial Guinea, Kenya, Malawi, Namibia, Zambia, and Zimbabwe, along with representatives from over 15 countries, the summit underscored the continent's ambitions to

achieve food security. Stephen Muchiri, executive director of the Eastern Africa Farmers Federation, advocated for a return to traditional farming practices to revitalize lifeless soils. He emphasized the importance of planting diverse crops and minimally disturbing the land, stating, "Inorganic fertilizers were never meant to be the foundation of crop production." He further elaborated that "commercially inclined farming has rendered our soils poor, acidic, and devoid of life." Muchiri urged farmers to rotate crops and utilize compost from livestock, stressing the need for a transition to restore soil fertility. Experts have noted that soil acidity exacerbates land degradation by reducing the availability of essential nutrients and making soil more vulnerable to erosion.

Soil degradation is intricately linked to other forms of environmental degradation, such as deforestation, desertification, and biodiversity loss. Deteriorating soil quality undermines the ability to support diverse plant and animal life, leading to ecosystem imbalances. Desertification poses a particularly severe threat to arid and semi-arid regions, jeopardizing livelihoods. The economic ramifications of soil degradation are profound; diminished agricultural productivity leads to lower farmer incomes and increased dependence on food imports. The loss of soil fertility necessitates higher expenditures on fertilizers and soil amendments, with broader economic impacts including reduced GDP growth, heightened poverty rates, and increased social welfare costs. Soil degradation also has significant social and health implications, as reduced agricultural productivity and food insecurity can incite social unrest and migration. The use of contaminated soils for food production poses health risks due to the accumulation of toxic substances in crops, and poor soil quality affects water quality by allowing eroded soils to carry pollutants into water bodies.

Promoting sustainable agricultural practices is crucial for reversing soil degradation. Agroforestry, conservation agriculture, and organic farming are effective methods to enhance soil health. Agroforestry integrates trees and shrubs into farming systems, boosting soil fertility, reducing erosion, and providing additional income. Conservation agriculture involves minimal soil disturbance, maintaining soil cover, and crop diversification to preserve soil structure and fertility. Organic farming reduces chemical input reliance and promotes the use of organic matter to enrich soil. Effective policies and institutional support are essential to address soil degradation. Governments must develop and enforce land use policies that promote sustainable agriculture, protect forests, and incentivize soil conservation. Providing secure land tenure, access to credit, and support for research and development can encourage investments in soil health. International cooperation and funding are also vital in supporting soil conservation efforts. Integrated landscape management approaches consider the interactions between various land uses and ecosystems, promoting the sustainable management of soil, water, and biodiversity. Collaborative efforts involving multiple stakeholders, including farmers, conservationists, and policymakers, are crucial for the success of integrated landscape management.

The significance of soil cannot be overstated—it is an invaluable and irreplaceable resource vital to sustaining all life on earth. Although soil is struggling for survival, there remains hope to rebuild it as healthy, productive, and sustainable ecosystems. As the world unites to preserve oceans, forests, and biodiversity, it is now imperative to focus on the ground beneath our feet.

The decline in soil quality in Africa is an urgent issue with far-reaching implications for food security, economic development, and environmental sustainability. Addressing this challenge demands a multifaceted approach encompassing sustainable agricultural practices, reforestation, soil conservation techniques, education, policy support, and technological innovations. By investing in soil health, Africa can boost agricultural productivity, ensure food security, and promote sustainable development. The urgency of the situation calls for coordinated efforts from governments, communities, and international partners to reverse soil degradation and build a resilient future for the continent. Through collective action and commitment, it is possible to restore and preserve the vital resource of soil for generations to come.

***Views are personal**

Author: Saurabh Sharma
Designation: Ph.D. Scholar
Department: African Studies
Institution: University of Delhi
Email: ssharma1@as.du.ac.in

Forwarded by: Prof. Awungshi Yaruingam
Faculty, Department of African Studies
Faculty of Social Sciences
University of Delhi

About

The Department of African Studies has launched an initiative called **"Scholars on Africa"** with the primary objective of promoting the research ideas of scholars and faculty members on current happenings and contemporary issues related to the African continent. This initiative serves a dual purpose, as it not only facilitates academic exploration but also provides valuable insights to the policymakers of India on matters concerning Africa. By actively engaging with scholars and faculty members, the initiative aims to foster a better understanding and relationship between India and Africa, bridging the gap between the two worlds.

Under the "Scholars on Africa" initiative, Scholars of the Department of African Studies are encouraged to contribute write-ups on various African issues, not exceeding 1000 words in length. It is noteworthy that these write-ups will be forwarded by any faculty members of the Department. These write-ups serve as a platform for scholars to express their personal views and insights on a diverse range of topics, including History, Politics, economics, culture, and social issues prevalent in Africa.

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