Global Land Outlook report and Land restoration

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Why in News: Humans have breached four out of nine planetary boundaries, the second edition of the Global Land Outlook report, published on April 27, 2022, has reported. It was prepared by the United Nations Convention to Combat Desertification (UNCCD) and its partners and draws attention to the depletion of finite land resources and the need to urgently restore the world's land.

The Various planetary boundaries

Planetary boundaries are the thresholds of environmental limits that define a "safe operating space for humanity". The nine planetary boundaries are:

Biodiversity loss

Land-use change

Climate change

Nitrogen and phosphorus (geochemical) cycles

Freshwater use

Ocean acidification

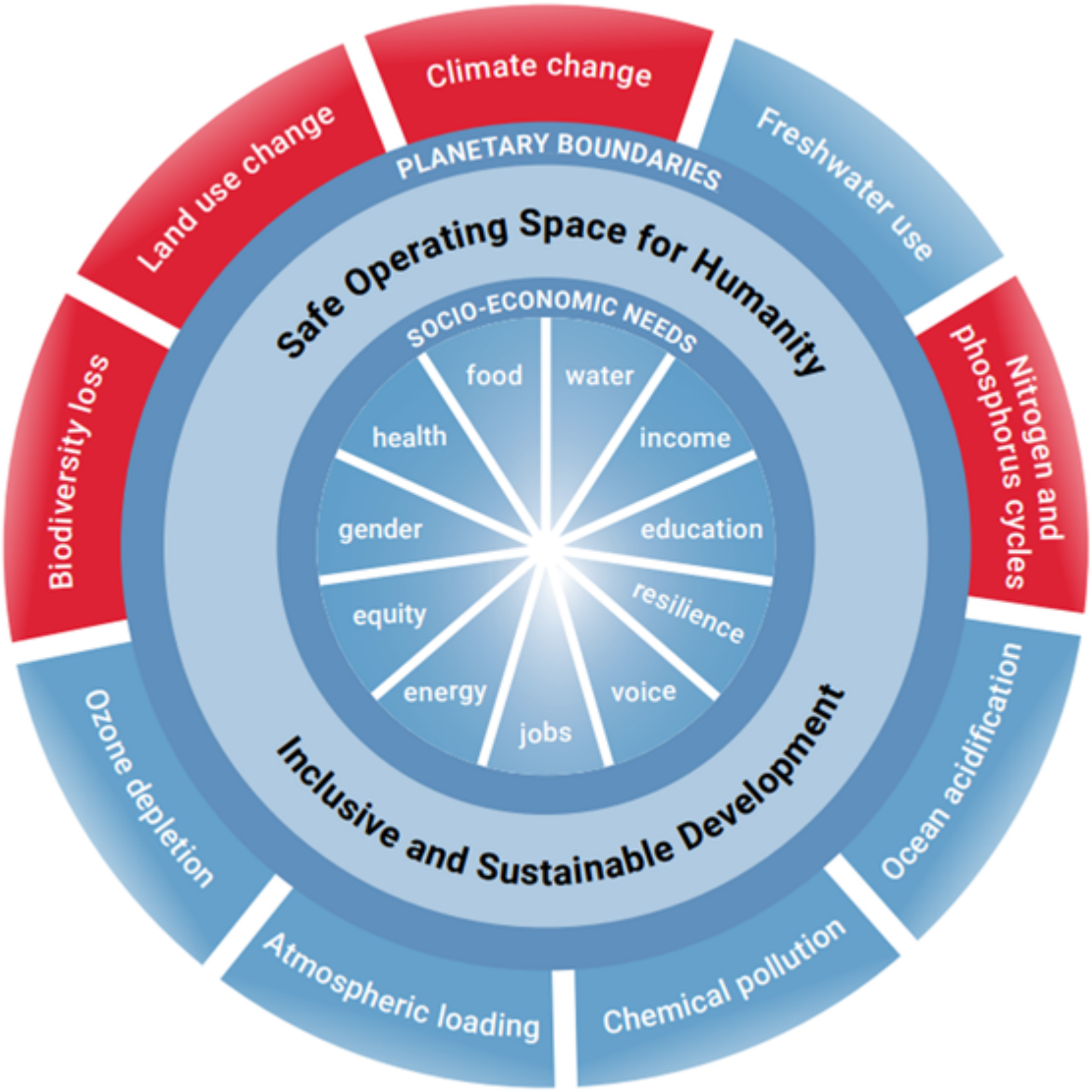
Chemical pollution

Atmospheric loading

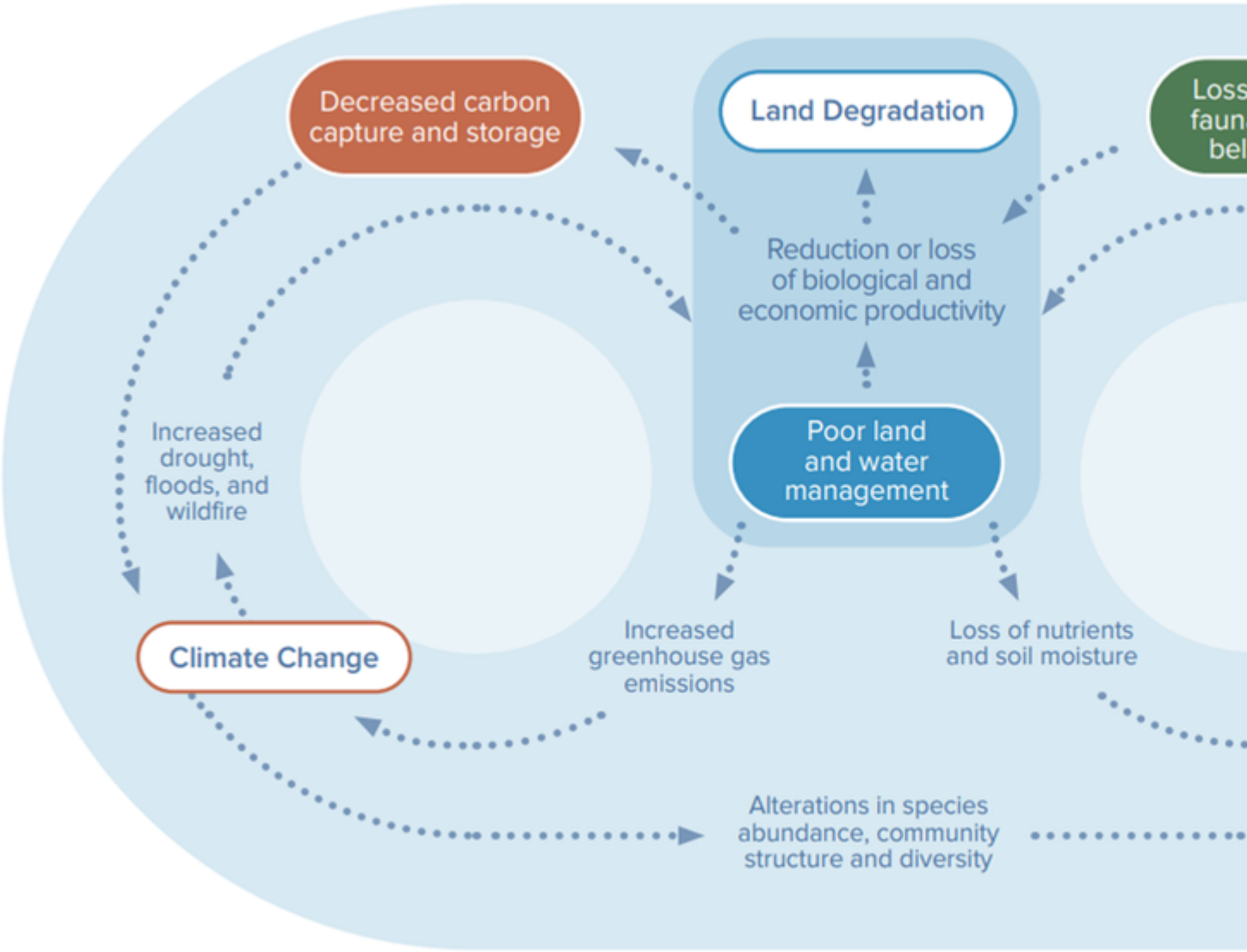
Ozone depletion

Of these, climate change, biodiversity loss, land-use change, and geochemical cycles have already been exceeded.

According to the Global Land Outlook report, these breaches are directly linked to human-induced desertification, land degradation, and drought.



Feedback loops between land degradation, climate change, and biodiversity loss



Source: Millennium Ecosystem Assessment, 2005.

Significance of Land Restoration

1In Conservation of Earth

The report defines land restoration as “a continuum of activities that avoid, reduce, and reverse land degradation with the explicit objective of meeting human needs and improving biosphere stewardship”.

Avoiding degradation means eliminating practices that degrade the environment, ranging from land and ecosystem conversion to socio-economic inequalities.

Land degradation can be reduced by adopting sustainable land and water management practices, while reversing land degradation involves revitalising soil, watersheds, and other elements of natural ecosystems as well as improving livelihoods and preparing for future challenges, with the eventual goal of sustaining all life forms on the planet.

Land is the operative link between biodiversity loss and climate change, which means restoring land is crucial to solving interconnected crises.

According to the report, humans have already altered more than 70% of the earth’s land area from its natural state.

This has contributed significantly to global warming and environmental degradation, and also led to a rise in poverty, hunger, inequality, zoonotic disease transmission etc.

Experts believe that effective land restoration, coupled with efforts to meet future needs, is essential to recover from the current crises and move towards an equitable and sustainable future.

The global annual cost of land restoration to achieve meaningful results is expected to become at least $300 billion by 2030. Each dollar invested in restoration activities has also been estimated to return between $7 and $30 in economic benefits, the Global Land Outlook report noted.

The U.N. General Assembly believes that achieving 'land degradation neutrality' is an effective way to accelerate progress towards achieving Sustainable Development Goals by 2030.

The UNCCD defines 'land degradation neutrality' as "a state whereby the amount and quality of land resources necessary to support ecosystem functions and services and enhance food security remain stable or increase within specified temporal and spatial scales and ecosystems".

2In Food Systems

Agriculture has affected the earth more than any other human activity.

It is not only the practice of growing food crops but also related activities like the production of animal feed, soil and water degradation, loss of forested land, and maintaining supply chains that connect producers to consumers.

Worldwide, food systems are responsible for 80% of deforestation, and 70% of freshwater use, and are the single greatest cause of terrestrial biodiversity loss. The threats do not end here.

Land degradation, desertification, and drought pose a great risk to global food security as well. Restoring long-term healthy practices and productivity within our agricultural practices will be the key to switch to sustainability in global food systems.

Methods to achieve land restoration

Inclusive and responsible governance is also crucial to facilitate the shift to sustainable land use and management practices, per the report.

It characterised land restoration as a shared responsibility, and that governments, scientists, civil society, and private sector players need to work together to set land and ecosystem restoration goals that transform land-use systems.

In most cases, land restoration activities are the same as those required to prepare for future land challenges, like tackling drought, recovering soil health, etc.

Floods, drought and wildfire are some common environmental challenges that degrade land.

Integrated land use planning – identifying the best combination of land uses while both sustainably meeting the needs of the stakeholders as well as preserving the land resources – is an efficient way to address land degradation.

A cost-effective approach is to identify landscapes while maximising benefits, such as in global restoration hotspots.

Regenerative agricultural practices, like terrace farming and rainwater harvesting, help restore land and can potentially increase crop yields while reducing greenhouse gas emissions and sequestering atmospheric carbon. They also create meaningful livelihoods, boost income, and ensure availability of resources in a healthy climate.

Land and ecosystem restoration will help slow global warming and reduce the scale and frequency of disasters like droughts, floods, etc.