

World Environment Day 2021: The Inheritance of Loss

Ecosystem restoration takes centre stage on this World Environment Day, and rightly so

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While environmentalists were busy applauding the decline in carbon emissions in the wake of pandemic-induced lockdown in most parts of the world, the Mauna Loa Observatory in the US posted a peak of 417 parts per million of atmospheric CO₂ for several days in early 2021. The only time carbon levels exceeded 400 parts per million before this was during the Pliocene era—four million years ago when the average surface temperature was warmer and sea levels were 33-82 feet higher than now—long before man's entry on the scene.

The rise in emissions due to human activities is documented all too well. A UN report estimates that global fossil CO₂ emissions rose by 62% in just 30 years (1990 and 2019). Despite commitments by signatories to the Paris Agreement, the International Energy Agency in its latest Global Energy Review predicts a growth of 5% in carbon emissions in 2021. This doesn't augur well for the earth, and the ecosystems it harbours. Concerns have already been raised about the collapse of the Caribbean coral reefs in 15 years and the transition of the Amazon rainforest into a degraded savannah in less than 50 years.

Alarmingly, these are not isolated interludes. Biospheres around the world are crumbling.

Postcards from the edge

Insurance firm Swiss Re estimates that one-fifth (20%) of countries globally are on the edge of ecosystem collapse due to biodiversity and wildlife losses. The report by the firm pegs India in the high-level risk category with 28% fragile ecosystems.

India is one of the richest biodiversity hotspots of the world with ecosystems ranging from the Himalayas in the north to the rainforests of the Western Ghats in the south, the desert sands of Thar in the west to the marshy mangroves of Sunderbans in the east. All of these today are in different stages of disarray due to climate change and other human activities.

The Himalayas are home to the largest number of glaciers outside the poles. However, the accelerated melting of glaciers and recent landslides are all a tell-tale sign of the brewing trouble. This sensitive region has been rendered further fragile by the construction of hydroelectric dams and roads. Similarly, the Western Ghats, billed one of the eight biodiversity hotspots of the world by UNESCO, has been pummeled by mining, clearing of forests for coffee and tea cultivation, and spawning hydroelectric reservoirs.

Reports suggest that Sunderbans, world's largest mangrove forests, is taking a battering not just from frequent cyclones, but also oil spills, increasing salinity, and pollution resulting from agricultural and industrial activities. This places a severe strain on the four million people who rely on the ecosystem services of the Sunderbans for livelihood and sustenance. Similarly, greening activities have meddled with the desert ecosystem of the Thar, threatening the survival of the native species and plants.

Ecosystem breakdowns such as these trigger economic collapse too. With 55% of the global gross domestic produce (GDP), worth US \$41.7 trillion, dependent on ecosystem services including clean water, air, food, and livelihoods, the economic risks involved in nature collapse are but apparent.

Conservation is the key

The crumbling of an ecosystem plays out like a domino effect. In a recent article in Scientific Reports, researchers point to the possibility of the extinction of a single species triggering the extinctions of plants and animals in the food web.

A complete reversal of such collapses may not be feasible because many external stimuli that the ecosystem depended on may no longer exist because of climate change. However, the damage can be contained through nature conservation. Currently, the volume of finance pumped into nature-based solutions globally is US \$133 billion per year. Compare this to the military budget of the US—\$934 billion (from October 2020 to September 2021). The contrast couldn't be starker.

In fact, the recently released State of Finance for Nature report, produced by the UN Environment Programme (UNEP), the World Economic Forum (WEF), and the Economics of Land Degradation Initiative estimates that investing just 0.1% of global GDP in restorative agriculture, forests, pollution management, and protected areas annually could help tackle climate, biodiversity, and land degradation by the middle of the century.

A biodiversity management policy that taps into local communities and their wisdom is our only blueprint for survival. We have mismanaged natural assets for a long time. Nature needs to be put at the centre of economic decision-making if we have to survive the odds.

Plastic pollution in the Galapagos Islands, the bleaching of the Great Barrier Reef, the collapse of one the largest emperor penguin colonies in Antarctica, and the Australian inferno are closer to home than we may imagine. They are cries of ecological distress. If we don't pay heed, the planet would be hurtling down a path of no return.

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