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Are Forests a Corner Piece of the Planet's Sustainability Puzzle?

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Since the dawn of civilization, humankind shifts the planet's natural resources at their own discretion, mining, deforesting, and farming and ultimately changing climate, are just some of the many environmental disruptions, expanding alongside the global population growth. The much-needed balance for a sustainable planet is nowadays compromised by the self-centered nature of humans.

The 21st century brought two economic crises, a worldwide pandemic, and a series of geopolitical conflicts where forests have been collateral damage. Forests, as one of the remaining natural strongholds, cover one third of land surface an equivalent 4.06 billion hectares, they support the livelihoods of 1.6 billion people and hold over half land-based species of animals, plants, and insects, performing paramount ecosystem services. According to the 2019 Intergovernmental Panel on Climate Change (IPCC) special report on Climate Change and Land, planting and protecting existing forests will limit global warming to 1.5°C, thus improving ecosystem's capacity to store carbon, mitigate the impact of storms and floods, store surface and groundwater, provide food, shelter, jobs, and recreation [1,2].

Considering that forests are scenic areas and unique landscapes, often geologically significant, human natural empathy for forests along with the economic importance of this asset led to conservation actions of planting and maintaining forested areas for the benefit and sustainability of both humans and the environment. Currently, the largest percentage of forests, 20% are in the Russian Federation (815 million hectares), these are followed by Brazil with 12% (497 million hectares), Canada with 9% (347 million hectares and the United States of America, with 8% (310 million hectares) [3].

With approximately 12 million hectares of forest being destroyed every year, deforestation and forest degradation are reducing by 23 percent global land cover productivity, contributing to approximately 12% of the world's greenhouse emissions, impacting 3.2 billion people, of which 40% are among the poorest worldwide [4]. If to all this, we add that more than 30 percent of new diseases reported since 1960, and 15 percent of 250 emerging infectious diseases, such as Ebola, Zika, HIV, Dengue fever and new forms of malaria are linked or attributed to deforestation and land-use change, deforestation, particularly in the tropics, these alone, should raise enough red lights for humans to grasp the urgent need for forest conservation [5].

Forest conservation movements date back to the industrial era, concerns on forestry resource exploitation, led to the creation of the world's first National Park in Mongolia in 1778. In the United States the earlier records of protected areas creation dates to 1864 with Yosemite and Mariposa Grove being classified as Natural Parks by the State of California to protect the remaining giant sequoias. Soon after, in 1872, the National Government established the second world's National Park, Yellowstone, a tendency spreading to Australia, Canada, New Zealand and other developed countries. By the end of World War II in 1945, Africa, Europe, South America, and to Asia joined the effort to save vast areas of endangered forests. By the end of World War II, ninety-nine countries had established their first national park, a trend rapidly spreading too many countries worldwide, resulting in the first United Nations list of National Parks and Protected Areas, in 1963, later published in 1994 by the International Union for Conservation of Nature and Natural Resources (IUCN).

Lately, names such as the novelist Rachel Carson, the President John F Kennedy's Clean Air Act, and Richard Nixon's Environmental Protection Agency creation drove the growing natural conservation movement emphasizing the need for action on a range of conservation issues to ensure biodiversity while not damaging the economy of resources for the future. The current need for protected areas goes beyond the IUCN classification, aided by the UNESCO's Man and Biosphere (MAB) programme reserves currently count 738 sites in 134 countries. Many other initiatives are in place, such as IUCN Programme Nature 2030, the new EU Forest Strategy key reference in forest-related policy development, the World Bank Group PROGREEN, the UN Environment Programme's Strategic Plan for Forests 2030, WHO, FAO, among many others.

Demand for new forests along with bio-economy and bioenergy measures respond to the challenges that forest-based industries face in resource and energy efficiency, to solve these issues, planted forests increased by 3 million ha annually, with Asia and the Pacific leading, followed by Europe and North America [3]. Though such effort is notable, industrial forests plantation is far from the 12 million hectares destroyed yearly and if considered that these forests are less efficient performers in ecosystem services, particularly in holding biodiversity, the effort is far from adequate.

As portrayed by Lovelock's Gaia principle, one cannot dissociate the ecosystem connections from the geologic essence of the planet. The same theory based on the early planetary vision of Mother Earth is nowadays comprehensively controlled 24/7 by a myriad of satellite sensors allowing precise local information and increased awareness of the problems affecting our planet. With over one thousand satellites monitoring planet earth, scientists as never before, hold boundless knowledge, binding them to the obligation to devise solutions along with policy makers and stakeholders alike to contribute towards effective integrated alternatives.

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