

U.N. report co-authored by OSU researcher advocates big increases in sustainable wood production

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Increasing sustainable use of the world's forests would support economic recovery while providing environmentally friendly wood construction materials, according to a United Nations report co-authored by an Oregon State University researcher.

"It is clearer than ever before that the increased utilization of wood products is critical to reducing global greenhouse emissions but only when these products are derived from sustainably managed forests," OSU's Rajat Panwar said. "Wood products over their life cycle are linked to lower levels of greenhouse gas emissions than products derived from materials that aren't renewable."

He said a review of scientific literature suggests that for every kilogram of carbon in wood products used in construction as opposed to non-wood products, carbon emissions are reduced by about 0.9 kilograms.

Panwar, associate professor of sustainable business management, helped the U.N. Food and Agriculture Organization assemble its flagship publication, *The State of the World's Forests*. Released this spring, the 2022 edition of the biennial report runs 166 pages and is subtitled *Forest Pathways for Green Recovery and Building Inclusive, Resilient and Sustainable Economies*.

Panwar, the director of Oregon State's sustainable natural resources graduate certificate program, was a coauthor on the report's third chapter: *Three Interrelated Forest Pathways Could Contribute to Green Recovery and a Transition to Sustainable Economies*.

This chapter concludes that:

Halting deforestation and maintaining forest ecosystem services would benefit the climate, biodiversity, human health and long-term food security.

Livelihoods would be diversified and lands made more productive by restoring forests and other landscapes and through "agroforestry" – using land to produce both agricultural and forest products.

Increasing sustainable forest use and building green value chains would help meet future demand for materials while supporting sustainable economies.

"Globally, the annual combined consumption of all natural resources is predicted to more than double from 92 billion tonnes in 2017 to 190 billion tonnes in 2060 because of increases in population and affluence," said Panwar, noting that a tonne, also known as a metric ton, is equal to 1,000 kilograms. "Presently, one-quarter of total material demand is met by biomass – that means 75% comes from non-renewable resources."

In 1970, total extraction of biomass resources was 9 billion tonnes. By 2017 it was 24 billion tonnes, Panwar said, and by 2060 the total is forecast to be 44 billion tonnes.

The release of this year's report coincided with the XV World Forestry Congress in Seoul, South Korea. Co-organized by the Food and Agriculture Organization, the congress includes policymakers, the private sector and other experts and features discussions on sustainability and other forestry topics.

The State of the World's Forests notes that forests cover 31% of the Earth's land, with forested area decreasing by roughly 10 million hectares annually. The forest declines carry severe risks for the species living in them, which include 68% of mammal species, 75% of bird species and 80% of amphibian species.

The report also points out that forests are responsible for more than half of the total carbon stored in soil or vegetation while also helping maintain the weather patterns essential for agriculture.

Additionally, it says that every dollar invested in land restoration can deliver as much as a 30-fold economic return and estimates that the monetary value of services provided by forests represents about 9% of global gross domestic product.

The report adds that only 2.6% of pandemic-related recovery spending in the world's largest economies has been directed toward rebuilding economies in ways that are more sustainable, an unfortunate missed

opportunity to invest in a more carbon conserving future. Further, owners of small plots, local communities and Indigenous peoples currently receive less than 2% of global financing for climate change mitigation while managing more than 4 billion hectares of forests and farmlands and producing 80% of the Earth's food.

“Investments in developing value chains for traditional and innovative forest products will be critical to draw down growing emissions and to reduce poverty among many forest-dependent communities globally,” Panwar said.