

# THE HINDU

**Yes we can, indeed we must, restore forests**

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Global warming, largely caused by industrial development and consumer demands, has been causing havoc across the world. Temperatures are shooting up, floods have been ravaging South China and Northeast India, unseasonal rains and, ironically, delayed and poor monsoon rains are experienced. A major solution to mitigate such climate changes is to reduce the levels of greenhouse gases, particularly carbon dioxide, which cause this warming. In an effort to try and limit this warming, many countries across the world are gathering together and agreeing to make efforts to limit the rise in temperature to no higher than 1.5 degrees by the year 2050.

The major way to do so is to increase the number of plants, trees and forests across the world. They all absorb carbon dioxide from the air, and with the help of sunlight and water, produce food (staple for us) and oxygen (which we breathe). And the wood and timber they offer are used by us in buildings and furniture. They are thus justly named in Sanskrit as Kalpataru — the wish-giving tree.

Yet, we kill them: deforestation has been going on decade after decade across the world, affecting the weather as well as the lives of plants, animals, microbes and the livelihood of human tribes that live in forests. The total surface area of our Earth is 52 billion hectares (Ha), and 31% of this has been forest cover. But the huge Amazon forests of South America are being chopped off for commercial reasons. Peru and Bolivia in the western Amazon region are the worst affected by such deforestation; so are Mexico and its neighbours in Mesoamerica. Russia, with forests occupying 45% of its land area, is chopping off trees. Large scale deforestation this kind has contributed to global warming over the years.

## What is a forest?

The Food and Agriculture Organization (FAO) defines a “forest” as a land area of at least 0.5 hectares, covered by at least 10% tree cover, without any agricultural activity or human settlement. Using this definition, a group of Swiss and French ecologists have analysed these 4.4 billion hectares of tree canopy that can exist under the current climate. And, excluding existing trees and agricultural and urban areas, there is room for an extra 0.9 billion hectares. Their analysis using the latest ecological methods, was published two weeks ago (Bastin et al., Science, 365 76-79, 5 July 2019). Thus, there is the potential climate change mitigation through global tree restoration. They point out that more than 50% of this restoration potential can be found in six countries (Russia, USA, Canada, Australia, Brazil and China). While it is not clear how much of this land is public or private, they confirm that the calculation of 1 billion hectares (>10% tree cover) is achievable.

Happily enough, several group (and governments) in countries, notably Philippines and State government in India (see the report for the Forest Survey of India, and an analysis by Down to Earth) have moved towards more tree plantations. In India with its 7,08,273 sq km land area, 21.54% has tree cover. And between 2015 and 2018, we have added 6,778 sq km. Madhya Pradesh has the largest forest cover, followed by Chhattisgarh, Odisha and Arunachal Pradesh while Punjab, Haryana, UP and Rajasthan have the least. Andhra Pradesh, Telangana, Karnataka, Kerala and Odisha have improved their forest canopy somewhat (<10%). Private groups, notably The Guru Nanak Sacred Forest in Ludhiana, Punjab, the middle-of-the-town forest in the heart of Raipur, the “Afforest” group of Shubhendu Sharma (The Hindu Business line, 3-12-2018) are some notable non-government initiatives. Readers will surely add more. (On an aside, who can forget the centenarian Salumarde Thimmakka, who has planted 385 banyan trees and 8,000 other trees, or Sunderlal Bahuguna of the Chipko movement of Uttarakhand?)

## Leading by example

But the most outstanding example of reforestation is Philippines, an archipelago of 7,100 islands, with a total land area of 3,00,000 sq km and a population of 104 million people. Way back in 1900, about 65% of its land mass was covered in forest canopy. Large-scale commercial deforestation continued after that, so by 1987, it was reduced to 21%. The government thereafter committed itself to steady reforestation, and by 2010, the forest covered 26%. It has now introduced a remarkable programme in which it makes it mandatory for each elementary, high school and college student to plant 10 trees before graduating. The sites where they plant and the location-appropriate plant are advised to them; (see<news.ml.com.ph> of Manila Bulletin, July 16, 2019). The mover of this idea, Gary Alejano, stressed on the need to utilise the educational system as an avenue for propagating ethical and sustainable use of natural resources among youth to ensure the cultivation of a socially responsible and conscious citizenry.

Here is an excellent example for our Indian students. Your columnist has recommended this model to be added to the National Education Policy 2019, so that we may demand youngsters to follow and gain from the Filipino experiment.

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