ENVIRONMENT

Competing for growth: How Miyawaki forest projects are mushrooming in India

Nahla Nainar

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Japan-inspired Miyawaki forests emerge as a popular solution to restoring degraded habitats in the country



The canopy of trees at Therku Veedhi, in Srirangam, just about hides the concrete jungle that it has been fitted into.

The strongest of the 10,000 saplings of 53 native tree species that were planted here on December 20, 2019, have grown into a forest where birdsong punctuates the sibilance.

The 'Nandavanam' project, carried out in collaboration with the Sri Ranganathaswamy Temple, is one of several urban 'green islands' that have been initiated in Srirangam, Samayapuram and

Lalgudi by the Tiruchirappalli City Municipal Corporation, using the Miyawaki afforestation method recently.

"The standard method of planting individual saplings in public areas is problematic in an urban setting. We had to contend with disturbed underground drainage, bad soil quality and overhanging electricity lines, while preparing the area for plantation. That's when my brother, a horticulturist, suggested that we consider planting trees in a group rather than individually," says S Vaidhyanathan, former Assistant Commissioner, Srirangam Zone, who initiated the project last year.

In Chennai, the Greater Chennai Corporation plans to develop at least 10 urban forests by the end of the year, in the capital's south region.

"Our first project in Kotturpuram, is on a site that was getting repeatedly misused as a dumping ground. The forest that has grown there since we planted saplings on January 25, has transformed the area with its greenery," says Alby John Varghese, Greater Chennai Corporation's Regional Deputy Commissioner (South).

The Inner Wheel women's voluntary organisation also recently inaugurated a Miyawaki forest project at the Secretariat Gardens in Chennai. "This year, the theme of our club is 'Nurture the Nature'. With cities becoming very polluted, we felt Chennai needed this," says Meera Jagdish, vice president, Inner Wheel Club of Madras.

The ranks of green cover advocates who follow the Miyawaki technique – a method of sowing very young seedlings close together in small plots of land, to create a forest within 25-30 years – are growing by the day. Named after the Japanese botanist and academic Akiro Miyawaki, the method has found favour among those who want to restore vegetation on degraded land within a short term.

Some of the enthusiasm may also be partly due to the fact that India is party to the pledge in 2015 made to the United Nations Framework Convention on Climate Change (UNFCC) to restore the green cover of 33% of its geographical area by 2022 (only 24% is reportedly covered at present).

Taking root

Over the past few years, Miyawaki forest projects have been literally springing up all over the country, thanks to Municipal authorities and environmentalists who seemed to have found their métier in this method.

The Telangana State Government is experimenting with a version of Miyawaki through the 'Yadadri' method of dense plantation with no definite spacing between the saplings, which has shown good results in Warangal. In Tamil Nadu, green warriors are trying to evolve a backyard forest model that will be an income generator for small-scale farmers while rejuvenating local ecology.

"A natural forest takes 100 years to grow. But in the Miyawaki method, where plants compete for sunlight, and therefore tend to grow upwards faster than sideways, we get the same result in around 20-25 years. It will be a reasonably grown forest within 5-10 years, so it is possible for us to see them take shape in our lifetime," says M R Hari, managing director, Invis Multimedia, Thiruvananthapuram. A firm proponent of the idea, Hari has been part of several Miyawaki projects in Kerala in collaboration with Nature's Green Guardians Foundation (NGGF), an NGO. The most recent of these has been a drive to create 22 micro-forests in tourist destinations in 12 districts of the State, with two micro-forests each planned in 10 districts while one each is being planned in Thiruvananthapuram and Pathanamthitta.

Last year, Hari travelled to Japan, mainly he says, to see how these forests fare after 30-40 years. "I visited the Miyawaki forest in Yokohoma that had been planted in 1970, which means it was over 50 years old. I became convinced that this would work for us in India too," he says.

A personal interaction with Professor Miyawaki led to the initiation of a mini forest on a 400 square metre plot in the Government Higher Secondary School in Chalai, Thiruvananthapuram, under the guidance of scientists Elgene O Box (Geography Department, University of Georgia, Athens, USA) and Kazue Fujiwara (Emeritus Professor of Yokohama National University). "We launched the project on January 29 this year to celebrate Professor Miyawaki's 93rd birthday," says Hari.

Conditional sustainability

Despite the high success rate, many ecologists have reservations about its sustainability in Indian climes.

Says author and conservationist Pradip Krishen, "I have seen no pictures of Miyawaki plantations in India that look anything more than tennis-courts filled with dense stands of plants, all competing for light and therefore growing very fast. Even if they plant native species inside Miyawaki plots, it bears little resemblance to properly restored forests, especially in dry, deciduous forests which exist in most parts of this country."

Besides being a concept more suited to a temperate region with dense coniferous stands, Miyawaki afforestation has other hurdles that make it unsustainable in India, says Krishen, who served as the park director of Rao Jodha Desert Rock Park in Jodhpur until March this year, and has been restoring degraded desert habitats since 2006.

Newcomers to the idea should be aware of its high initial cost when compared to conventional plantation, and also prepare to cull large trees from forest plots to allow the other plants to thrive. "Unless a Miyawaki forest is able to survive without any watering or nutrients, it serves little purpose except as short-term decoration," Krishen says.

Says Chennai Corporation's Varghese, "Miyawaki afforestation cannot be seen as a replacement to regular tree plantation. While this method works well on small plots of public spaces, municipal authorities should continue to focus on regular greening activities, when there is a larger area available."

For public good

The Miyawaki method is not ideal for those looking to grow trees for timber or fruit within a short period. "Miyawaki afforestation should be carried out on public land so that it is beneficial to everyone. We avoid planting trees with commercial value," says Anand Panimaya, a veterinarian-turned-IT professional and organic farmer who initiated a micro-forest project on land belonging to a temple in Kumbakonam in 2018.

Panimaya prefers the forests to be impenetrable, to preserve their natural wealth. "You can go around our green island, but not into it. There's a mini ecosystem that starts forming in the Miyawaki forest. The leaves start falling, and when they decay, they form the humus which develops the growth of other living things like insects and small reptiles," he says.

Besides using such plots for educational tourism, paths around the forests could also help create a healthier lifestyle.

"Regular exposure to forest-type environments improves health parameters like blood pressure and heartbeat. It has been scientifically proven that when you have green spaces, automatically your mood and spiritual health improves, and even the rate of crime decreases," says Panimaya.

As for the ongoing debate about its efficacy, Panimaya says, "There is no one right way of doing a Miyawaki forest. As long as you are caring for the forest as an ongoing effort, it is a good way to increase the green cover."

Praising the interest and awareness created among students and institutions by the plantation drives, Varghese says, "For the first time, we are seeing people coming together and celebrating trees."

He adds, "Methods used may not be exactly the same, but it is wonderful to see the community spirit fostered by the activity of planting saplings that will grow into a forest one day."

The Miyawaki forest created by Dr. Anand Panimaya in Kumbakonam. Photo: Special Arrangement/THE HINDU

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