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‘Urban forests’: Miyawaki technique helps create dense green patches in one year

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Miyawaki forests are designed to regenerate land in far less time than the time it takes a forest to recover on its own, which is over 70 years. (Representational/Crowd Foresting)

Tiny but dense forests are springing up in the metropolis. In a year, a patch, as small as a tennis court, in Mumbai’s eastern suburbs has become a testament to the creation of “urban forests” through the Miyawaki technique.

Along with manicured gardens, playing arenas, jogging and cycling tracks, the 57,000-sq m Bhakti Park, located in the city’s industrial ward Chembur/Wadala, hides a nascent forest of nearly 1,100 native plants that were planted a year ago on 230 sq m of area.

Like a green wall, three more similar patches are planted within the garden with 36,000 saplings. Some trees at the site are neem, amla, hibiscus, jamun and cashew.

These urban forests are created through Miyawaki, an afforestation method based on the work of Japanese botanist Akira Miyawaki in the 1980s. The technique compresses layers of a forest – shrubs, trees, canopies – on small plots of land, turning them into tiny forests.

Advocates for the method say mini forests grow 10 times faster and become 30 times denser and 100 times more bio-diverse than those planted through conventional methods. This method involves planting three to four saplings per square metre, using native varieties adapted to local conditions. A wide variety of species – ideally 30 or more – are planted to recreate layers of a natural forest.

Before plantation, local agro-climatic conditions, including soil quality, are studied. Three layers of greens – shrubs and undergrowth, medium-height trees and taller canopies – are integral components of the Miyawaki forests. Mulching, natural water retention and perforation material like rice husk and use of organic compost, cow dung support their growth.

“Miyawaki forests grow in two to three years and are self-sustaining, like how a forest is. We have to remove weeds, water the saplings for those two to three years. It is not a garden, which needs long-term maintenance, where grass needs trimming or watering is done regularly,” said Nilesh Pawar, junior tree officer from M-West’s garden department.

The urban forests also help lower temperatures in concrete heat islands, reduce air and noise pollution, attract local birds and insects, and create carbon sinks. “The method advocates planting of diverse native species. These small patches do attract birds, squirrels, insects, but they cannot serve the purpose of natural forest. Along with these urban forests, it is important to keep our natural forests intact and to protect them,” said Pradeep Tripathi, founder of NGO Green Yatra, which has executed four Miyawaki projects in Mumbai.

Miyawaki forests are designed to regenerate land in far less time than the time it takes a forest to recover on its own, which is over 70 years. In a bid to compensate for the depleting green cover over the years, the BMC, in the last two years, has taken up the project to create small “urban forests” in the city.

The brainchild of former municipal commissioner Praveen Pardeshi, the 24 ward officers were asked to identify sites for plantation. The BMC, in its budget for 2020-21, allocated over Rs 254 crore for plantation. “Due to plantation in built-up spaces like roads, footpaths and covered tiled area, incidences of tree fall and human death are high. Hence, a further increase in tree cover will come from plantations in open spaces/gardens and in private layouts of developers in recreation grounds via a method of dense urban forests of indigenous local species,” stated the budget speech.

The idea of increased plantation within gardens was criticised by corporators. Congress corporator Asif Zakaria said, “The BMC selected a patch behind the Bandra fort. Nothing has happened in over a year, instead, the area has been encroached upon.” Plantations at another location within Bhakti Park, Worli, Chandivali and Kurla have begun.

The BMC has set a target of planting 4,00,000 trees in 65 plots across Mumbai at the cost of Rs 32 crore. At present, the BMC has planted 54,760 trees in 14,258 sq m of space in the city.

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