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Miyawaki forests

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Why in News: Prime Minister Narendra Modi during his latest 'Mann ki baat' episode spoke about Miyawaki plantation, the Japanese method of creating dense urban forests in a small area.

Miyawaki plantation method

Named after Japanese botanist Akira Miyawaki, this method involves planting two to four different types of indigenous trees within every square metre. In this method, the trees become self-sustaining and they grow to their full length within three years.

The methodology was developed in the 1970s, with the basic objective to densify green cover within a small parcel of land.

The plants used in the Miyawaki method are mostly self-sustaining and don't require regular maintenance like manuring and watering.

Over the years, this cost-effective method has become the go-to solution for the civic body to restore the green cover in a space-starved city like Mumbai.

Steps followed in the Plantation

The goals of a Miyawaki technique include improving biodiversity, sequestering carbon, increasing green cover, lowering air pollution, and preserving the water table. The following steps are involved in the development of a Miyawaki:

- 1 The local plants are identified, and they are further divided into shrubs, sub trees, trees, and canopies.
- 2 The soil is assessed for quality, and biomass is combined to improve the quality of the soil.
- 3 After that, a mound is constructed; and three to five saplings are planted per square meter in very high density.
- 4 A heavy layer of mulch is then placed on the ground.

Significance of Miyawaki

Meanwhile, to fight climate change, curb pollution levels, and increase the green cover of the financial capital, the Brihanmumbai Municipal Corporation (BMC) has been creating Miyawaki forests in several open land parcels of Mumbai

The dense green cover of indigenous trees plays a key role in absorbing the dust particles of the area where the garden has been set up.

The plants also help in regulating surface temperature. Some of the common indigenous plants that are used for these forests include Anjan, Amala, Bel, Arjun and Gunj.

Kamaraj IAS Academy

Plot A P.127, AF block, 6 th street, 11th Main Rd, Shanthi Colony, Anna Nagar, Chennai, Tamil Nadu 600040

Phone: **044 4353 9988 / 98403 94477 / Whatsapp : 09710729833**

With several infrastructure projects like real estate metro rail construction in progress in Mumbai over the past few years, it was recorded that the surface temperature in certain pockets of Mumbai has increased. Therefore, to fight this challenge, such forests are being created.

At the industrial neighbourhood in Marol (Andheri East), the BMC is creating an urban forest with the Miyawaki method.

These green patches play a major role in regulating the carbon levels of a given area, which may in return help in maintaining a clean year.

Also, these forests encourage new biodiversity and an ecosystem is developed around it, which in turn increases the fertility of the soil and regulates surface temperature.

The PM also cited the example of a Kerala-based teacher, Raafi Ramnath, who used the Miyawaki technique to transform a barren land into a mini forest called Vidyavanam by planting 115 varieties of trees.

Extension of Such Forest in Mumbai

According to the civic body's data, 64 Miyawaki forests have been planted in Mumbai so far. The Miyawaki drive was launched under BMC's urban forest project on January 2, 2020 and the first such forest was created in Bhakti Park at Chembur in the eastern suburbs

The largest Miyawaki forest under this project was created at Chandivali's Nahar Amrut Shakti Udyan, wherein over 41000 plants were planted over 13 acres.

Civic officials said that more than 4,00,000 trees have been planted in these 64 forests so far. The BMC's Garden cell had earmarked 1,100 plots across Mumbai for setting up these forests, back in 2020, out of which more than 60 have been completed.