

India is rapidly moving towards urbanization and the country's urban population has grown from 29.91% in 2007 to 33.54% in 2017 according to the 'World Development Indicators Survey' conducted by World Bank. India is currently confronted with the emergence of more than 50 cities having a million-plus population, and by 2030, over 40% of the country's population will be living in cities. Today, Delhi holds the position of the world's second most populated city with 25.7 million residents, while Mumbai comes in 5<sup>th</sup> with just over 21 million people and Ahmedabad's population of 5,633,927 (as per 2011 population census) makes it the fifth-most populous city in India, and the encompassing urban agglomeration population estimated at 6,357,693 is the seventh-most populous in India.

This rapid development and widespread urban sprawl have drastically depleted green cover leading to habitat loss, increase pollution and significantly impacting the quality of life of urban dwellers. Many Indian cities fall well below the United Nations recommended standard of 9 m<sup>2</sup> of green space per person, Ahmedabad (0.81 m<sup>2</sup>/person). Even Bangalore, known as the 'Garden City' performs poorly with only 1.9 m<sup>2</sup> of green space per person.

Rapidly declining green spaces and rampant urbanisation has also made cities more vulnerable to climate change. Increasing concentrations of greenhouse gases, particularly carbon dioxide (CO<sub>2</sub>), are leading to an increase in the average surface temperature of our planet – which in turn results in rising sea levels, a rising frequency of severe weather events, droughts, floods, forest fires, and declining biodiversity.

- **Social Forestry Program**

Social Forestry offers a unique solution to safeguard our planet, especially our choked cities. Urban trees have been known to significantly improve air quality by absorbing gaseous pollutants (ozone, nitrogen oxides) through leaf surfaces and intercepting particulate matter in the ambient air (e.g., dust, ash, dirt and smoke). Street trees in Bangalore for example, have been observed to reduce levels of suspended particulate matter and contributed to 65% reduction in SO<sub>2</sub> levels.



Trees also help in managing the local climate, for instance, transpiration of water through the leaves of a tree cools the local air temperature. A single tree can provide an air-conditioning efficiency of 20 kW by transpiring about 400 litres of water daily. Trees also provide cooling by providing shade, which lessens the opportunities for urban surfaces to absorb and radiate heat into the local area thereby helping to reduce the *Urban Heat Effect*. Trees also provide several social and economic benefits such as promoting urban farming, beautification and enhanced aesthetics, privacy, shade (which increases human comfort), and the creation of a sense of place and well-being among urbanites. Trees have also been credited with improving human health and reducing noise pollution.

As climate change continues to escalate, trees play an incredibly important role as ‘sinks’ for CO<sub>2</sub> emissions. Through the process of photosynthesis, trees sequester carbon dioxide and store it in their trunks, branches, root systems, and leaves. A single mature tree can absorb about 20 kg of CO<sub>2</sub> a year, which equals the emissions arising from driving over 80 km in an average passenger car.

Additionally, it is important to grow different indigenous trees. Different trees provide important habitats for several different species of urban fauna that also resides in our cities. They act as a source of food and shelter for important pollinating species such as bats and bees and support populations of reptiles and amphibians. Today, it is vital to convert pockets of fallow land or barren spaces across the country into biodiversity park to help promote the growth and conservation of local flora and fauna.

- **Social Forestry Program (SFP)**

Drishti Foundation Trust (DFT) has been working in the space of Social Forestry for the past many years in a quest to green our concrete jungles through its initiative called the Social Forestry Program (SFP). This program addresses the critical need of afforestation in cities by creating a platform through which companies and private citizens can facilitate the development of green spaces within their Urban and Social community.



Through this program companies and organisations can further reduce their carbon footprint by offsetting their emissions while having a positive impact on the welfare of local communities, flora and fauna. SFP was launched in early 2017 and since then has planted over 2,00,421 trees within cities across India such as Ahmedabad, Gandhinagar, Hyderabad and others, having sourced 61 different native tree species such as, Peepal, Ashoka, Jamun, karanj, Badam, Neem, Ber, Banyan Tree, Bael, , Sandalwood and many others.



The aim of Social Forestry Program is to plant native trees in urban and peri-urban areas to

- (i) improve the quality of life in cities.
- (ii) create a natural habitat for local fauna.
- (iii) improve air quality.
- (iv) help companies offset a portion of their carbon footprint.
- (v) create opportunities for livelihood development. Under the SFP project,
- (vi) DFT plants Different tree species for making the diversification and nurture tree species that are at least 2-3 years old to ensure a high survival rate of 92.5%. Every plantation is geotagged, monitored over 3 years.

- **Biodiversity Park Projects**

DFT is also attempting to reform the world of horticulture where Barren lands must be replaced by wild and indigenous *Islands of Biodiversity* that can be theme based such as butterfly gardens, Herbal gardens, nursery etc having a variety of native plants which would attract butterflies, birds and other animal species. Keeping this in mind, it has created a prototype in Ahmedabad.



These Biodiversity Islands have been developed with a whole-hearted purpose of spreading awareness on benefits of biodiversity islands and improving the local environment. Today both gardens host several nectar plants to attract butterflies, flowering plants to refresh our olfactory senses and edible and medicinal plants such as Arduasi, Sandalwood, Bryophyllum, Aloe vera, Turmeric, Tulsi amongst others for consumption.

*On visiting the park one can often spot butterflies such as the Common Grass Yellow, Tailed Jay, Common Mormon, and Common Sailor amongst others along with birds such as Green bea eater , Bay backed shrike and Bulbul.*

*And the rear species of bird such as “Blackheaded Ibis “which is Near Threatened according to IUCN RED DATA LIST.*

SFP and Biodiversity Park projects, strive to tackle the problems associated with modern-day urbanisation by bringing local authorities, companies, and citizens together to promote afforestation and environmental stewardship as an integral aspect of city planning and development.