Urban Biodiversity

Mains Syllabus: GS III - Conservation, environmental pollution and degradation, environmental impact assessment.

Why in the News?

International Day for Biological Diversity is observed this year on May 22 with the theme "Harmony with nature and sustainable development".

What are the significances of urban bio diversity?

In its latest report, the Forest Survey of India has estimated the average forest cover in leading urban cities to be only 10.26% of their geographical area.

- **Increasing Urban Population** - Almost half the world's population lives in urban areas, a percentage that is expected to rise to 70% by 2050.
- **Human well-being** - Urban trees provide provisional services such as food, fibre and water, minimise the urban heat island effect and help in flood control.

Target 12 of the GBF lays emphasis on enhancing green and blue spaces in cities and urban planning for human well-being and biodiversity conservation.

- **Environmental Benefit** - They help in temperature control, pollution abatement, water conservation and carbon sequestration, and keeping carbon dust and suspended particulate matter in check.
- Tree lines of a 10-metre width can reduce noise pollution by 5 decibels.

Goal 11 of the United Nations Sustainable Development Goal also states the importance of making cities and human settlements safe, resilient and sustainable.

- **Recreational Services** - Green spaces also provide much needed recreational and spiritual services in the form of parks in what would otherwise be concrete jungles.
- **Economic Benefits** – It is estimated that the value of annual services provided by mega city trees to be around Rs. 8 crore per square kilometre of tree cover.

What are the challenges faced by urban biodiversity?

About 25% of species are facing the threat of extinction.

- **Unplanned Development** - Urban biodiversity is under great threat with unplanned development and human greed.
- Urban development and encroachment has swallowed up many waterbodies in and around cities like Chennai and Bengaluru.
- **Pollution** - Most urban waterbodies are losing their ecological integrity due to garbage and sewage pollution.
- **Climate Change** – It is affecting urban biodiversity through increased temperatures, altered precipitation patterns, and changes in the frequency and intensity of extreme weather events.
- **Invasive Species** - Urban areas often act as entry points for invasive species via trade, landscaping, or by accident and outcompete or prey on native species.
- **Lack of Native Vegetation** – Urban landscaping often uses ornamental or exotic plants that don't support native pollinators or wildlife.
- **Socio-Economic Inequality** - Disparities in green space access mean biodiversity is not evenly distributed.
- Lower-income neighborhoods often have fewer natural resources and less biodiversity protection.

What lies ahead?

- Protecting existing greenery, pursuing the development of parks and new urban green spaces, establishing tree avenues along the roads, and conserving natural rivers and water bodies need to be undertaken.
- The key element of developing green infrastructure is promoting community health and well-being.
- As suggested by GBF framework, enhancing native biodiversity and ecological connectivity is essential.
- In this context, the UN Habitat's 3-30-300 prescription is relevant.
- It recommends that every home, workplace, or school should have a view of at least three established trees.
- Urban water bodies need to be ecologically restored after preventing garbage dumping and treating sewage through conventional treatment or nature-based solutions.
- Neighbourhoods should have a minimum of 30% tree canopy cover and a public green space of at least 0.5 to 1.0 hectares, should be accessible within a 300-metre walk or bike ride from every home.
- Miyawaki method of growing forest in urban spaces provides a effective and efficient way of increasing urban biodiversity

City Biodiversity Index

• A city biodiversity index is prepared based on the present status of the city in terms of three large parameters — the extent of native biodiversity in the city, ecosystem services provided by them and the level of governance of biodiversity.
• The International Council for Local Environmental Initiative (ICLEI) Asia has prepared a city biodiversity index using 23 indicators for cities such as Kochi, Gangtok and Nagpur.
• Once the current biodiversity status of the city is assessed through a survey, a local biodiversity strategy and action plan (LBSAP) is prepared to improve the status of the city in terms of biodiversity conservation and sustainable human welfare.

References

The Hindu | Urban Biodiversity