

Cities and Biodiversity: Nature in tight spaces

Photo by Ong Beng Tek

Urban biodiversity encompasses the variety of living organisms that have adapted and are surviving in densely human-populated built-up environments. Cities and Biodiversity, a scientific study by the Convention on Biological Diversity (CBD), Stockholm Resilience Centre (SRC), and the ICLEI: Local Governments for Sustainability, highlights the following key messages on the issue:

- Urbanization is both a challenge and an opportunity to manage ecosystem services.
- Rich biodiversity can exist in cities.
- Biodiversity and ecosystem services are critical natural capital.
- Maintaining functioning urban ecosystems can significantly enhance human health and well-being.
- Urban ecosystem services and biodiversity can help contribute to climate change mitigation and adaptation.
- Increasing the biodiversity of urban food systems can enhance food and nutrition security.
- Ecosystem services must be integrated in urban policy and planning.



Cities and biodiversity cover a number of Aichi Biodiversity Targets, including the development and application of plans for positive incentives for conservation (Target 3), sustainable production and consumption (Target 4), reduction of the rate of habitat loss (Target 5), reduction of pollution levels (Target 8), and protection of ecosystem services (Target 14).

- Successful management of biodiversity and ecosystem services must be based on multi-scale, multi-sectoral, and multi-stakeholder involvement.
- Cities offer unique opportunities for learning and education about a resilient and sustainable future.
- Cities have a large potential to generate innovation and governance tools and therefore can and must take the lead in sustainable development.



Challenges and opportunities

The ASEAN region, home to globally significant biodiversity including 18–19 percent of all known plant and animal species, is also among the most populated regions of the world. The region is projected to have an urban population of up to 52 percent by the year 2030 (ADB, 2014) and demand for essential ecosystem services such as clean air and water, food, and climate buffer has exceeded the productive capacity of remaining biodiversity in cities.

The period when cities are rapidly expanding can be seen as an opportunity for these cities to incorporate biodiversity into their development, as they can consider what habitats to retain in their development plans and this can be addressed in part by spreading awareness on the values and benefits of biodiversity, sustainable use, and management; using technology to maximize spaces for biodiversity and green spaces; and increasing partnerships for biodiversity-related projects. Best practices can also be replicated on how to restore and increase biodiversity in cities. There should be a realization, however, that cities cannot be sustainable without biodiversity. Megacities and rapidly growing settlements must integrate biodiversity into urban management and development plans.

Response

Cities in the region are strongly encouraged to educate people on the importance of biodiversity in their everyday lives by showing them that green spaces and the abundance of other plant and animal species are part of their urban development and not merely for ornamental purposes. Proper ordinances must be implemented and enforced for the protection of biodiversity in the cities.

To assist local authorities, a monitoring tool that evaluates cities' progress in urban biodiversity conservation was developed. The City Biodiversity Index (CBI) or Singapore Index on Cities' Biodiversity was a response to the growing awareness among local authorities and city administrators on the importance of biodiversity.

Enriching Biodiversity in the Cities

The Singapore Index on Cities' Biodiversity is an effective monitoring tool and guide for administrators and city planners who want to integrate biodiversity into their urban development plans and design. This index focuses on the management of native biodiversity in cities while providing the citizens the essential ecosystem services. By promoting the use of native flora and fauna to city planners, the Singapore Index helps prevent the introduction of exotic and potentially invasive species. Additionally, it aims to increase the number of species to promote biodiversity richness, promote public understanding on biodiversity.

Using the Singapore Index as a starting point in biodiversity integration on urban development, city administrators can effectively build their own biodiversity baselines and determine their next course of action based on the knowledge of the services provided by their native flora and fauna.

As it promotes increasing the number of flora and fauna species, using the Singapore Index will complement the existing objectives of city administrators. "Greening the city" is no longer only about promoting parks within urban areas. It is likewise important to ensure that the numbers of the different species are maintained at a level that will be beneficial to the environment. Boosting the population of the residing species in the area will also improve biodiversity richness, as each species has its role in conservation.



Oriental pied hornbill at the Sungei Buloh Wetland Reserve, Singapore

Photo by Pamela Reblora

Call for Action

The best way forward for cities in the region is to protect whatever is left of natural areas and foster programs that will increase green spaces and biodiversity. Using best practices shared by other cities in ASEAN, local authorities and city administrators can design functional parks that offer a safe haven for different plant and animal species and a relaxing place for urban citizens to enjoy. Idle lands can be used as urban farms or orchards to increase green spaces and support public awareness programs on the importance of biodiversity for food and sustenance. The use of renewable energy sources (wind and solar power), electric vehicles, and environment-friendly building and construction materials will also strengthen biodiversity initiatives in cities.

Restoration of coastal ecosystems, such as mangrove forests, seagrasses and coral reefs, can be an important part of coastal city planning to generate urban development that is more resilient to storm surges and coastal flooding and ensure the sustainability of coastal and marine resources.

City management officials need to integrate the Singapore Index in their monitoring and evaluation systems to assess urban development and the status of biodiversity.

The benefits of richer urban biodiversity may seem intangible but the public will certainly benefit from cleaner air, cooler temperatures, calmer surroundings, increased greenery, and less stress. The local authorities in turn will spend less on artificial measures to generate the same effects afforded by the improved management of biodiversity in cities.

References

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Challenges

Many cities in the ASEAN region were established near biodiversity-rich habitats. Unregulated use of natural resources have depleted these habitats, and thus, are now categorized as critical biodiversity habitats.

Rapid urban growth could lead to more land conversion.

Poor understanding of the benefits of having rich biodiversity in the city.

Environmental considerations, including biodiversity, are accorded a low priority compared to economic and industrial progress.

- ✓ Conserving small areas of forests, floodplains, estuaries, and coastlines protects species and strengthens ecosystems services.
- ✓ Maintaining biodiversity keeps cities cool.
- ✓ Nature areas provide habitats for species.
- ✓ Greening idle areas with urban farming helps supply food and employment, and promote appreciation of biodiversity.
- ✓ Green areas, such as parks, clean the air and calms the body and mind.

ASEAN'S RESPONSE



ASEAN Initiative on
Environmentally Sustainable Cities



ASEAN Environmentally
Sustainable City Award



Singapore Index on
Cities' Biodiversity