

Critical Study on the Effect of International Convention on the Urbanization and Biodiversity

¹Shashikant Mishra & ²Prof. (Dr.) Jayanta Kumar Saha

¹Research Scholar, Department of Law, University of Bankura

²Research Guide, Department of Law, University of Bankura

ARTICLE DETAILS

Article History

Published Online: 15March2019

Keywords

Migration, leads, urbanization, biodiversity

ABSTRACT

The environment is the space in which we all congregate and pursue a common goal. This section examines urbanisation patterns, biodiversity, and ecological services on a worldwide scale. The chapter's objectives are founded on the notion that cities are inextricably linked to the biophysical world, even if these links are becoming increasingly difficult to observe. We then investigate how, depending on the time period and scope of the investigation, urbanisation may be both a cause and a solution to a variety of societal and environmental problems. Civilization has no idea how nature and mankind evolved. Who comes first is still debatable. We are well aware that the link between humans and nature is crucial to life on Earth's continuous survival. However, as urbanisation progresses, nature becomes endangered. Numerous pieces of legislation, as well as the Covenant, have been adopted to address this issue. While the concept of sustainable development has grown, it continues to collide with conventional wisdom. "United Nations Environment Programme (UNEP) observations indicate that population expansion and unplanned urbanisation result in a tug-of-war between climate change, water scarcity, and deforestation."

1. Introduction

The term "urbanisation" refers to the movement of people from underdeveloped to established areas, such as cities, towns, and so on. It is the process by which an increasing share of a population migrates from rural to urban areas.

To grasp the notion of urbanisation, one must first know the terms "Urban", "Urbanism", and "Urbanize". The term "urban" is widely used to refer to demographic features such as "size and/or density" or economic variables such as non-agricultural occupations.

The term "urbanisation" refers to the process of "population change, infrastructural development, and demographic composition."

At times, urbanisation and urban expansion are distinguished. Urbanization is the process through which an area's population is increased through the provision of certain services. "By 2050, developed and emerging countries are expected to witness a rapid growth in urbanisation."

Industrialization is a critical component of a larger, more complicated process known as modernization.

On the other hand, as Burgess and Venables (2004) note, urbanisation is a relatively under-researched area of development economics and policy:

The influence of urbanisation and megacities on development is the most striking example of spatial concentration... Despite the significant diseconomies associated with developing country megacities, these cities provide even higher economies of scale, making them attractive locations for corporations. While urbanisation is a strong indication of manufacturing and service development in emerging economies, it is strangely absent from economic growth and development assessments.

The term "biodiversity" refers to

Biodiversity is defined as "a spectrum of biological and zoological complexity that results in plants, animals, flora, fauna, deserts, rivers, woodlands, and hilly areas."

-Previously used expression

Occasionally, the term "biodiversity" is used synonymously with the more carefully defined and well-established concepts of species diversity and species richness.

In other words, "biodiversity" refers to the variety of plant and animal species. This definition has the advantage of appearing to capture the bulk of situations and providing a unifying perspective on previously specified traditional biological varieties.

"International Union for the Conservation of Nature and Natural Resources (IUCN) 1982" States Biodiversity encompasses a wide array of flora and fauna, as well as an ecosystem.

Biodiversity is characterised genetically as the diversity of alleles, genes, and bions. They investigate the mechanisms of evolution, such as genetic modification and gene transmission.

'Biological variety refers to the diversity of living organisms found in all habitats, including terrestrial, marine, and other aquatic environments, as well as their ecological relationships; it encompasses species, species, and ecosystem heterogeneity.'

- Diversification of Genetic Resources

Genetic variety is a term that refers to the diversity of genes found in the living world. Between and among species, various genes and gene expressions exist. And this genetic diversity contributes to the diversity of living forms, their "physical and biological characteristics, as well as phenotypes,

which vary in response to their interaction with the environment."

-Numerous Species

We refer to the diversity of living beings as "species diversity." Millions of living animals call the Earth home. They are all distinct and are categorised based on their traits (insects, animals, plants, fungi, etc.). Frequently, species diversity is divided into two types:

-Species diversity:

Intraspecific diversity is a term that refers to genetic variation both inside and between species. Humans with light or dark skin tones, blond or brown hair, and blue or green eyes are just one example of intraspecific biodiversity.

-Interspecies Relationships are Diverse:

On the other hand, interspecific biodiversity refers to the diversity of living species contained inside them: their quantity, type, and relative importance. Assume that humans (or sapiens sapiens), a species with 7.7 billion creatures, have a greater degree of diversity than, say, the few remaining African elephants.

Interaction is a basic notion that emphasises an ever-changing reality at all levels and between them. Indeed, biodiversity is not only characterised by a static inventory of living species at any given time. Biodiversity and its relationships are assessed by considering all forms of life (plants, animals, microbes, and others), as well as the ecosystems to which they contribute and interact.

"The United Nations has designated the decade from 2011 to 2020 as the decade for repairing the UN's ecosystems, followed by the decade from 2021 to 2030. Humans are responsible for the loss of 25% of plants and animals, according to the 2019 IPBES Global Evaluation Report. The same human activities that contribute to biodiversity loss have been identified as contributing to the pandemic's expansion in the October 2020 IPBES study."

In 2020, the fifth edition of the United Nations' Global Biodiversity Outlook report indicated that none of the targets – which include ecosystem protection and sustainability promotion – had been fully achieved.

The term "forest biodiversity" refers to the ecological services provided by all forms of life found in wooded environments. Woodland biodiversity refers to the trees and plants, animals and microbes that live in woods, as well as the genetic diversity that exists alongside them. Forest biological diversity can be studied at a number of different dimensions, including ecosystem, landscape, species, population, and genetic. It is conceivable for complex interactions to occur between and within these layers. This complexity helps species to adapt to changing environmental conditions and provide ecosystem services in biologically diverse forests.

The sustainability of ecological processes within distinct forest ecosystems is dependent upon the preservation of their biological diversity."

A diverse ecology is a healthy ecology. If something terrible occurs to this bacteria's health and it becomes extinct, no other creature will be able to exploit this hostile habitat. A lack of plant biodiversity (producers) reduces the number of

consumers in a variety of terrestrial, aquatic, and marine habitats.

A species' value may be utilitarian or intrinsic (innate). They serve a purpose when they serve humans, whether as a pleasant feature (a companion dog) or a utilitarian aspect (willow bark as a pain reliever). In addition to its utility to the human race, a species has intrinsic value. This includes the fact that a species is an integral component of the earth's natural history. Recent discussions about the ethics of human impact on biodiversity are trending toward agreement that each species possesses inherent value and that ecosystems would be less productive in the absence of biodiversity. If a single plant produces a single type of bloom for a single species of bee, who in turn produces honey for a single species of honey badger, which in turn provides food for a single cheetah, the balance is simply too delicate. If a sudden, heavy downpour eliminates the bulk of bees and drowns the flowers, the entire food chain is wiped out. The more species that can live in an ecosystem, the greater each organism's chance of survival. This also applies to the human race.

2. Interactions Between Biodiversity and Urbanization

The urban environment's diversity of plants and animals reveals some noteworthy patterns:

1. In urban regions, the number of plant species is more sensitive to or related to the size of the human population than it is to the size of the city area.
2. The age of the city has an effect on the diversity of plant species; older cities have a greater diversity of plant species than younger towns.
3. Diversification has been linked to economic growth in the past. For instance, in Phoenix, Arizona, plant and bird diversity in urban neighbourhoods and parks is positively connected with median family wealth.
4. Cities are home to 20% of all bird species and 5% of all vascular plant species.
5. Approximately 70% of plant species and 94% of bird species seen in urban areas are indigenous to the region.

China, Africa, and other countries are experiencing rapid population increase, posing a challenge to population control and urbanisation. As a result of this population growth trend, there has been a considerable rebalancing of urban and rural people for economic survival, affecting the ecosystem and biodiversity. As a result, a particular emphasis on governance is required to manage these types of challenges.

Numerous communities worldwide are located in biodiverse areas such as floodplains, estuaries, and coastlines. Urbanization and habitat fragmentation are wreaking havoc on major biodiversity hotspots around the world, including Brazil's Atlantic Forest Region, South Africa's Cape Province, and coastal Central America. The direct consequences of urbanisation will likely have an influence on biodiversity across a range of biomes; around 10% of terrestrial vertebrates reside in highly urbanised ecoregions.

While it is often believed that cities and biodiversity are incompatible, the reality is that many cities have a great diversity of species, and several are located within globally recognised "biodiversity hotspots." Berlin, Bonn, Brussels, Cape Town, Chicago, Curitiba, Edmonton, Frankfurt, Freiburg,

Helsinki, Kolkata, and Mexico City are just a few well-known examples of biodiverse cities.

The global urbanisation process is accelerating. Not only has urbanisation affected the habitats of species dramatically, but it has also resulted in a catastrophic reduction in biodiversity. This article explored the characteristics of urban areas and the effects of urbanisation on biodiversity. Urban biodiversity is influenced by the natural environment's condition and the planning, design, and management of the built environment, all of which are influenced by human populations' economic, social, and cultural values and dynamics.

3. The Impact of Urbanization on Biodiversity and Natural Resources

In a broader sense, examining the definition reveals "When we define urbanisation as "the process by which a large number of people are constantly concentrated in relatively small areas, forming cities," we see that in order to sustain the population in a small area, we are utilising and destroying nature in an unplanned manner. For example, India and Bangladesh built the Ram pal power plant near the Sunder River Delta to create electricity and aid in the area's urbanisation, but the United Nations Organization has subsequently shut down the facility.

The urbanisation of the world is a key contributor to environmental change. Urban areas are a threat to biodiversity as well as a source of it. Natural ecosystem conversion or deterioration in urban areas has the most immediate and evident impact on biodiversity. Additionally, human settlements and development frequently act as a gateway for invasive species, putting biodiversity under severe duress.

Urbanization has revealed that a significant number of species are threatened, as urban trends dictate biodiversity health. Urbanization significantly depleted natural resources, wreaking havoc on the ecosystem and natural resources.

To understand the impact of urbanisation on biodiversity and natural resources, it is required to categorise land areas as follows:

- 1-The urbanisation influence on rural areas
- 2- The urbanisation effect on mountainous places
- 3- The influence of urbanisation on coastal areas
- 4- The impact of urbanisation on arid areas
- 5- The influence of urbanisation on forest regions

4. Measures Approved by Law to Ensure Contrast Between Urbanization and Biodiversity

• International Convention for Plant Life Protection (1952)

"The International Plant Protection Convention (IPPC) is a 1952 international plant health convention that attempts to protect cultivated and wild plants by preventing pest introduction and spread." The IPPC was established in 1952, superseding previous international agreements on plant protection. The Convention was revised in 1979, and the amendments became effective in 1991.

The IPPC was amended and strengthened in 1997 following the FAO Conference's adoption of a significant revision. The Convention provides a framework and a venue for international cooperation, harmonisation, and technical exchanges between contracting States. Its implementation involves the collaboration of NPPOs, the official services

established by governments to carry out the IPPC's tasks, and RPPOs, which may serve as regional coordinators for IPPC-related activities. The 1997 revised Text emphasises cooperation and information exchange; it promotes phytosanitary measure harmonisation through the use of international standards; it establishes the IPPC's governing body, the Commission on Phytosanitary Measures (CPM), which develops and promotes the use of ISPms; and it establishes the IPPC Secretariat and standard setting procedures.

5. Important International Wetlands Convention (1971)

The Ramsar Convention was formed in 1971 with the declared intention of "conserving wetlands and promoting 'wise use of wetlands.'" It is defined as 'preserving their ecological integrity in the context of sustainable development through the use of ecosystem techniques.' The Convention's signatories are obligated to work on the principle of human-environment interactions, including their reparable and irreparable damage, without jeopardising economic and sustainable growth.

The International Wetlands Convention is unusual in that it is the first modern international accord on natural resource conservation. The transaction is significant on a worldwide level. In 1971, the Convention on Wetlands made an agreement with a small Iranian town in Ramsar. The Wetlands Convention has been renamed the Ramsar Convention ([link is external](#)).

"The Ramsar Convention's broad aims are to halt worldwide wetlands loss and to safeguard remaining wetlands through sensible use and management. International cooperation, policy development, capacity building, and technology transfer will be required to accomplish this."

The Ramsar Convention is the world's first environmental convention to focus exclusively on a single area. "The 1971 Treaty was signed at Iran's Ramsar City, and the Convention's Member States span the globe."

The Ramsar Treaty, which took place in 1971 in Ramsar, Iran, is the only global convention devoted completely to wetlands. The Ramsar Convention has been ratified by 170 countries. A Contracting Party is required to add at least one wetland to the List of Internationally Significant Wetlands based on defined criteria. By 6 August 2018, the Ramsar List had grown to around 2323 wetland regions comprising a total of 248 million hectares. (2018, Ramsar Convention Secretariat). Additionally, contractual partners manage all of their wetlands using the "smart usage" approach. A wise use of a wetland requires protecting its natural integrity and guaranteeing its long-term survival for humans and the environment. Additionally, contracting parties are responsible for implementing national wetland policies, conducting wetland inventories, monitoring and studying wetlands, educating the public about wetlands, and developing integrated wetland management plans. The Ramsar Secretariat has issued a variety of manuals aimed at assisting decision-makers working in the field of wetlands.

"The Wetlands Convention is a seminal international agreement that was signed in the Iranian city of Ramsar on 2 February 1971." Although it has been referred to as the Ramsar Convention, the Convention is often referred to as the "Wetlands Convention (Ramsar, Iran, 1971)." Ramsar is the world's first contemporary intergovernmental convention

devoted to natural resource conservation and sustainable usage.

The Treaty's formal name, the Convention on International Habitat Wetlands (CHWI), reflects the Treaty's initial emphasis on the conservation and use of wetlands, particularly as habitat for waterbirds. The scope of the Convention has been enlarged throughout the years to embrace all areas of wetlands conservation and smart use, with wetlands recognised as the most vital ecosystems for biodiversity conservation and human wellbeing.

The Convention entered into force in 1975 and now has 162 Contracting Parties (06/2012) or Member States from every continent. The Parties have compiled a list of internationally significant wetlands, which currently totals approximately 2,040. (the Ramsar List, essential component of the Convention). These wetlands, which comprise an estimated 192 million hectares, have been recognised as Ramsar areas, requiring further protection. The core concept of Ramsar is that all wetlands must be managed sustainably.

6. The Convention from Three Perspectives:

-Sustainable Management of Wet Lands

Citizens have a fundamental responsibility to adopt concepts of wetland protection into their national land use planning. They pursued this method in order to maximise their property's "smart use of wetlands." The term "smart use" of wetlands refers to "preserving its ecological integrity through ecosystem-based management practises consistent with sustainable development." The Ramsar concept embraces all wetlands and water resources, not only those of international significance. It is vital to maintain full implementation of wetlands' critical role in promoting biodiversity and human wellbeing.

7. On a global scale, the importance of wet lands:

Additionally, the Party is committed to designating and promoting its conservation, as well as 'designating sufficient wetlands within its region' upon admission to the 'Ramsar List.'

In the Nordic-Baltic region, there are around 200 Ramsar sites encompassing an area of more than 5000 000 hectares.

-Global collaboration

Contracting Parties agree to consult with other Contracting Parties regarding the Convention's implementation, focusing primarily on shared wetland areas, shared water systems, and shared species.

8. Convention on the protection of the world's cultural and natural heritage (1972):

"The Convention on the Protection of the World Cultural and Natural Heritage (Convention on World Heritage) safeguards 'exceptionally significant' cultural and natural resources. In 1972, UNESCO established the World Heritage Convention. The Parties to the Convention are obligated to determine the origin of the term "exceptional universal value." Within the confines of their zone of influence. A World Heritage Committee conducts evaluations and makes selections for the list. Countries that submit registration sites must demonstrate an unwavering commitment to their preservation, including the implementation of necessary long-term conservation

measures. It elevates their natural and cultural resources to the global stage and underscores the international community's commitment to the long-term preservation of World Heritage sites. Additionally, the Convention includes a list of World Heritage Sites in Danger, which highlights areas that have been designated as World Heritage but are threatened or imminently threatened. This is to guarantee that global initiatives address the issue." The 1972 World Heritage Convention's primary feature is that it combines the concepts of natural and cultural property protection into a single treaty." The Convention acknowledges the connection of humanity and the environment, as well as the fundamental requirement for balance.

"On 17 December 1975, the Convention enters into force three months after it is lodged in accordance with Article 33 of the Convention on the Protection of the World Cultural and Natural Heritage."

The League of Nations' efforts to conserve humanity's cultural and historical heritage began during that era. This endeavour was started by the founding of the Organization of the Nations for Education, Science, and Culture on 16 November 1945. (UNESCO). UNESCO endorsed the 1966 General Conference Resolution 3.342. It charged the Director-General with the responsibility of coordinating and ensuring global conformity with acceptable scientific, technological, and legal standards for the conservation of cultural property, monuments, and sites. Expert meetings and final reports recommended that the Director-General draught an international recommendation for use in establishing or improving national protection systems, as well as international conventions or other appropriate measures to promote the development of a global strategy for the protection of monuments, groups of buildings, and other structures. The General Conference assigned the Acting Director-General with the responsibility of drafting an international convention in 1970 through resolution 3.412, urging him to create a special committee to review and finalise the text. The Committee finished its work in April 1972 with the adoption of a draught "Whale Cultural and Natural Heritage Convention" and a suggested "National Cultural and Natural Heritage Recommendation." The "Convention on the Protection of the World Cultural and Natural Heritage" that has been proposed Both documents were presented to the General Conference during its seventeenth session on 15 November 1972 and were accepted the next day.

9. Convention international concerning endangered species of wild fauna and flora (1975):

CITES regulates the international trade in specimens of specified species to ensure that international wildlife commerce does not jeopardise their survival (CITES). The regulations that govern the import, export, re-export, and introduction of the vast array of CITES-protected species.

"Around 13,000 mammalian, avian, reptile, amphibian, and fish species live on Earth, along with approximately 250,000 floral and invertebrate species and millions of insects. These wild species and plants, when combined, are a vital element of the natural environment and are critical in meeting human requirements for food, clothing, medicine, and entertainment, to name a few. Thousands of species, on the other hand, are threatened by human activities such as habitat

damage and loss, overhunting, pollution, and "uncontrolled international commerce."

International wildlife commerce has exploded in recent decades, as improved transportation technologies have made it simpler to transport wild animals and plants, as well as their products, across the globe, and as demand for human populations has risen. Illegal wildlife trade is a multibillion-dollar industry: trade fishing, along with wood dealing, is estimated to be worth millions of dollars each year. It is home to about 350 million natural animals and plants each year. The majority of this industry caters to the desire for exotic animals, trendy attire, and magnificent flora. Additionally, substantial commerce is undertaken in products like as furs, skins, and traditional remedies. "The Convention today governs the commercial harvesting of nearly 900 timber species, up from 18 in 1975, as well as the commercial harvesting of numerous new shark and ray species, as well as corals and other marine species." International commercial traffic in marine and timber species is increasingly regulated by the Convention on International Trade in Endangered Species (CITES).

The "Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)" was established in 1973 to address the overexploitation of numerous endangered species as a result of unregulated international commerce. The Treaty became effective in 1975 and now has 183 Parties. The Convention bears joint responsibility for promoting sustainable wildlife commerce and fighting illicit trade between producers and consumers. CITES oversees international trade in over 36,000 species, including their products and derivatives, and aims to secure their survival in the wild, benefiting both local communities and the global ecosystem. CITES, in collaboration with the International Consortium on the Combat of Wildlife Crime (ICWC), is coordinating the efforts of five intergovernmental organisations (CITES, INTERPOL, and the United Nations Office on Drugs and Crime) to raise awareness about the growth of illegal wildlife trade and to develop a coordinated response.

"CITES-listed animals and plants are those that are included on one of the three CITES-approved lists. CITES protects particular species against illegal commerce and unsustainable wild harvesting, as their extinction would have irreversible ecological implications as well as severe economic and societal consequences. The purpose of the CITES permit system is to "ensure sustained, legal, and traceable international trade in listed species."

Implementation is contingent upon three sets of national actors: the Scientific Authority, charged with determining the level of commerce that will not harm a species; the Managing Authority, charged with ensuring traceability through the provision of adequate legal documentation for the transaction; and the Enforcement Authority, charged with combating illegal activity. Trade is permitted only if the three criteria listed below are met. To begin, the work does not put the species' survival in jeopardy. Second, no animal or plant was transferred in violation of the exporting state's wildlife and flora protection legislation. Thirdly, transportation is designed to keep each live specimen safe from injury, health issues, or harsh treatment. At the national level, all actors must work cooperatively to ensure compliance with these criteria.

CITES is mentioned in the Rio+20 final report, The Future We Want "The critical role of the Convention on International

Trade in Endangered Species of Fauna and Flora, an international agreement that bridges trade, environment, and development by promoting biodiversity conservation and sustainable exploitation, should be recognised in concrete terms. It was defined in the 2016 United Nations Wildlife Crime Report as a "Agreement of extraordinary scope and power" that "defines the constraints that wildlife traffickers seek to evade."

The threats to wild animals and plants will only grow in the next decades as human population and economic activity develop. CITES' vision is to conserve biodiversity and contribute to sustainable use by ensuring that wildlife and flora do not become or remain unsustainable as a result of global trade, significantly slowing the rate of biodiversity loss and significantly advancing the 2011-202 Strategic Plan for Biological Diversity. Additionally, as this presentation demonstrates, the CITES Parties have committed to strengthening the Convention's contribution to the SDGs and their objectives. The CITES-2030 Agenda for Sustainable Development and the Sustainable Development Goals were also discussed at last year's 17th Conference of the Parties' ministerial Lekgotla. Humans trade thousands of species on a global scale for food, shelter, health care, ecotourism, cosmetics, and fashion. CITES' principal purpose, within the broader SDG framework, is to inspire others to conserve species and promote prosperity.

"CITES was drafted in response to a 1963 IUCN (World Conservation Union) conference resolution." The wording of the Convention was finally agreed upon on 3 March 1973 in Washington, DC, at a conference of representatives from 80 nations, and CITES entered effect on 1 July 1975. The original text of the Convention was lodged with the Depositary Government in three languages: English, French, and Spanish, each of which is equally authentic. The Convention is now available in two additional languages: Chinese and Russian.

10. Convention on the conservation of migratory wild animal species (1979)

The Bonn Convention (Convention) establishes a framework for coordinating the protection of migratory species of wild animal species across their range. The Bonn Convention was signed for the first time in 1979.

11. Legal conventions' impact

"There is a good example of a natural city eco-link in Porto Alegre, Brazil. Residents and environmental groups joined together to safeguard this tree-lined area as building threatened to ruin it. This, along with nearly 70 additional green tunnels in Porto Alegre, were included in the legislation passed in June 2012 by" "While trees occasionally cause power outages during heavy rains (due to the fact that electric cables pass through the canopy), locals appreciate the numerous benefits they provide. Along with the EchoLink, trees contribute to mitigating the effects of urban heat islands, improving air quality, mitigating the effects of rain and flooding, and increasing property values."

"The trees of Rua Gonçalo de Carvalho create a highly forested area. From above, it appears as though a forest has grown between all of the neighbouring structures. Tipuana trees, commonly referred to as Rosewood, are unique to South

America and can reach a height of 100 feet. Their massive root systems have the potential to cause damage to streets, sidewalks, and neighbouring residences, though trenching properly can help prevent this. When they bloom, they have gorgeous yellow blooms."

12. Mayesbrook Park in London

The river restoration project is part of Barking's first 'Climate Change Park.' The project's objective was to transform a derelict 45-acre park into a showcase for how public green space can help communities adapt to climate change dangers such as increased flooding and summer temperatures. The Mayes Brook Climate Change Park is a rare example of public-private collaboration. This programme will have a tremendous positive impact on both the local people and the environment. This park will provide a wonderful gathering spot for locals and an ideal habitat for wildlife by returning the Mayes Brook, planting trees, and constructing a wetland.

13. Purification of Water Through Wetlands in Uganda's Nakivubo Swamps

"Uganda's wetlands cover around 30 000 square kilometres, or 13% of the country (Government of Uganda 2001). While virtually every wetland in the United States is threatened in some way, they are possibly the most stressed regions in towns and cities. Uganda has made great progress in the last decade in terms of development, restoration, and urbanisation. Over 14% of the country's population now lives in cities, and urban populations continue to expand at a rate of more than 5% per year - roughly double the rate in rural areas (UN-HABITAT 1999). Housing and land demand are expanding, as are construction, industrial, and commercial operations. The majority of these operations, which entail the draining and recycling of wetlands, occur without sufficient planning or control (NEMA 1996)."

Approaches to urban planning are continuously evolving. Uganda's primary government agency responsible for wetland management, the Ministry of Water, Lands, and Environment's Wetlands Inspection Division, has developed a close working relationship with urban planners.

14. Wetlands and Floodplains Protect Coastal Cities: New Orleans

Flooding has always been a hazard to the southern United States of America's New Orleans. Extensive levees were built to mitigate flood risk, and adjacent wetlands were drained to combat mosquito-borne diseases and pave the way for growing urbanisation. Due to the loss of water, peaty soils compressed, sank, and gradually descended below sea level.

The levees effectively prevented the sediment-rich flows of the Mississippi River from refilling the floodplains and marshes. Southern Louisiana's waterways are now encircled by over 3,000 kilometres of levees, and considerable engineering has channelled vast amounts of water. Numerous dams upstream trap sediment, decreasing the delta's silt supply dramatically. The region's ability to absorb storm surge has been hindered by the rapid erosion of coastal wetlands. When Hurricane Katrina struck havoc on New Orleans in 2005, the city paid a steep price for this stunning loss of green infrastructure. One of the few positive outcomes of that disaster has been a rising realisation of the critical nature of restoring green infrastructure in order to resist future storms, especially in light of projected sea-level rise.

15. Conclusion:

Cape Town, South Africa's capital city, recently completed a thorough study of the value of ecosystem services provided by urban natural areas. These places include nature reserves, coastal areas, marshes, and rivers. The analysis estimated the city's natural assets' net present value to be between US\$ 5.13 and \$9.78 billion utilising valuation methodologies such as "willingness to pay." The research has contributed in the mobilisation of funds for the environment across departments by highlighting the critical role of ecosystem services in human welfare and emphasising the critical nature of accounting for and funding their maintenance.

Canberra's local governments plant trees for a variety of reasons. There are around 400,000 trees within the city borders. By reducing the requirement for energy-intensive air conditioning and ventilation, this urban forest contributes to the decrease of the urban heat island effect. Additionally, trees improve air quality, absorb and intercept runoff, and act as a carbon sink. Between 2008 and 2012, these services resulted in approximately US\$ 20–67 million in value or cost savings. The value has benefited in budgeting and resource allocation.

In their book "Biodiversity: an introduction," Gaston and Spicer define biodiversity as "variation of life at all levels of biological structure."

The biological diversity at all levels of organisation: genes within populations, populations within species, species within communities, communities within landscapes, landscapes within biomes, and biomes within the biosphere. Biodiversity refers to the total number of living animals within a single ecosystem or habitat, encompassing species abundance and variety, as well as all environmental elements such as temperature, oxygen and carbon dioxide levels, and climate. At sea level, biodiversity can be quantified on a vast scale, while at the well, it can be quantified on a micro scale.

References

1. https://archive.org/stream/springer_10.1007-978-94-007-7088-1/10.1007-978-94-007-7088-1_djvu.txt
2. J.P.Gibbs(ed), Urban Research Methods, Van Nostrand Company, Inc. Princeton, New Jersey, New York (1961),p.14
3. https://ipbes.net/sites/default/files/2018_americas_full_report_book_v5_pages_0.pdf
Glossary of Environment Statistics, Studies in Methods, Series F, No. 67, United Nations, New York, 1997.
4. https://www.researchgate.net/publication/344510191_IMPACT_OF_URBANIZATION_ON_ENVIRONMENTAL_HEALTH_QUALITY
5. <https://www.learninsta.com/class-12-biology-important-questions-chapter-15>
6. <http://assets.vmu.ac.in/MBO07.pdf>

7. [https://www.ravenshawuniversity.ac.in/StudyMaterials/Sociology_UG/UG-I/UG-.%20\(Sociology%20of%20Environment%20Unit-3\)%20\(8\).pdf](https://www.ravenshawuniversity.ac.in/StudyMaterials/Sociology_UG/UG-I/UG-.%20(Sociology%20of%20Environment%20Unit-3)%20(8).pdf)
8. [https://www.ravenshawuniversity.ac.in/Study_Materials/Sociology_UG/UG-I/UGI%20\(Sociology%20of%20Environment%20Unit-3\)%20\(8\).pdf](https://www.ravenshawuniversity.ac.in/Study_Materials/Sociology_UG/UG-I/UGI%20(Sociology%20of%20Environment%20Unit-3)%20(8).pdf)
9. [https://www.ravenshawuniversity.ac.in/Study_Materials/Sociology_UG/UG-I/UG-I%20\(Sociology%20of%20Environment%20Unit-3\)%20\(8\).pdf](https://www.ravenshawuniversity.ac.in/Study_Materials/Sociology_UG/UG-I/UG-I%20(Sociology%20of%20Environment%20Unit-3)%20(8).pdf)
10. <https://www.vidyarthiplus.com/vp/attachment.php?aid=27060>
11. DPR Godavari_Vol I_Chapter 4_24082020.docx
12. https://travelsdocbox.com/National_Parks/86817997-Bio-diversity-visit-us-at.html
13. https://archive.org/stream/VISIONIAS/ ECOLOGY_ENVIRONMENT_AND_DISASTER_MANAGEMENT_djvu.txt
14. <https://en.unionpedia.org/i/Biodiversity>
15. https://archive.org/stream/springer_10.1007-978-94-007-7088-1/10.1007-978-94-007-7088-1_djvu.txt
16. https://www.researchgate.net/publication/273206246_Impacts_of_urbanisation_on_biodiversity_The_role_of_species_mobility_degree_of_specialisation_and_spatial_scale
17. https://ipbes.net/sites/default/files/2018_americas_full_report_book_v5_pages_0.pdf
18. Unit 1_Threats to Biodiversity_01_09_20_Final_Ragini_K.docx : <https://www.learninsta.com/class-12-biology-important-questions-chapter-15/>
19. https://archive.org/stream/VISIONIAS/ ECOLOGY_ENVIRONMENT_AND_DISASTER_MANAGEMENT_djvu.txt
20. Contribution to HPNLU - JEDM- Sustainable Development and Gobar South - The Conservation of the Sundarban's Landscape.docx
21. Chapter WL Cnsrvatn INDIA SINCE 1981.docx
22. Contribution to HPNLU - JEDM- Sustainable Development and Gobar South - The Conservation of the Sundarban's Landscape.docx
23. <https://idoc.pub/documents/shankar-ias-environment-pdf-3no7239xpgld>
24. Ramsar Convention on Wetlands | NorBalWet. <https://www.norbalwet.org/ramsar-convention-on-wetlands/>
25. International Law • Environment Guide. <http://www.environmentguide.org.nz/issues/biodiversity/im:2506/>
26. UNESCO World Heritage Centre - The World Heritage Convention. <https://whc.unesco.org/en/convention/>
27. Convention Concerning the Protection of the World Cultural <http://legal.un.org/avl/ha/ccpwcnh/ccpwcnh.html>
28. https://sustainabledevelopment.un.org/content/documents/14838CITES_Convention.pdf
on the work of the Convention on International Trade in
https://sustainabledevelopment.un.org/content/documents/14838CITES_Convention.pdf
29. https://sustainabledevelopment.un.org/content/documents/14838CITES_Convention.pdf
1https://sustainabledevelopment.un.org/content/documents/14838CITES_Convention.pdf
on the work of the Convention on International Trade in
https://sustainabledevelopment.un.org/content/documents/14838CITES_Convention.pdf
30. What is CITES? | CITES. <https://cites.org/eng/disc/what.php>
31. Amigos da Rua Gonçalo de Carvalho - RESISTIR É PRECISO <https://goncalodecarvalho.blogspot.com/2013/06/>
32. <https://goncalodecarvalho.blogspot.com/2013/06/>
33. The World's Most Beautiful Street is a Tree-Filled Oasis <https://inhabitat.com/the-worlds-most-beautiful-street-is-a-tree-filled-oasis-in-the-heart-of-porto-alegre-brazil/>
34. NAKIVUBO SWAMP, UGANDA: managing natural wetlands g for <https://www.cbd.int/financial/values/uganda-valuenakivubo.pdf>
35. Experience South Africa Through Film and Television. <https://luxegotaways.com/experience-south-africa-through-film-and-television/>