

Understanding Environment and Urban Biodiversity

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Only in the last few decades have the principles of sustainability become more widely accepted. Environmental worries arose in the 1960s, fuelled in part by Rachel Carson's book *Silent Spring* and the publicity that accompanied it (Carson, 1963). The Club of Rome recognised the issues that societies would confront if environmental resources were overused, exhausted, or injured in the 1970s.

In response to the growing environmental movement of the 1960s, many nations began to take actions to protect the environment within their borders. By the early 1970s, however, governments began to realize that pollution did not stop at their borders. International consensus and cooperation were required to tackle environmental issues, which affected the entire world. In 1972, the United Nations Conference on the Human Environment (UNCHE) was convened to address issues concerning the environment and sustainable development. UNCHE, also known as the Stockholm Conference, linked environmental protection with sustainable development.

There was a necessity to understand the environment and its relation to the human life. So in 1977 the world's first intergovernmental conference on environmental education was organized by the United Nations Education, Scientific, and Cultural Organization (UNESCO) in cooperation with the U.N. Environment Programme (UNEP) and was convened in Tbilisi, Georgia (USSR) from October 14- 26, 1977.

Delegates from 66 member states and observers from two non-member states participated. Representatives and observers from eight U.N. agencies and programs also participated. Three other intergovernmental organizations and 20 international nongovernmental organizations also were represented. In all, 265 delegates and 65 representatives and observers took part in the conference.

The Tbilisi Declaration noted the unanimous accord in the important role of environmental education in the preservation and improvement of the world's environment, as well as in the sound and balanced development of the world's communities.

The Tbilisi Declaration together with two of the recommendations of the Conference constitutes the framework, principles, and guidelines for environmental education at all levels—local, national, regional, and international—and for all age groups both inside and outside the formal education system.

In India knowledge of environment and nature's importance was known from the vedic period. Protection and cleaning up of environment was the essence of Vedic (1500–500 BC) culture. Charak Samhita (medical Science book of 900 BC - 600 BC) gives many instructions for the use of water for maintaining its purity. Under the Arthashastra (an ancient book on statecraft, economic policy and military strategy), various punishments were prescribed for cutting trees, damaging forests, and for killing animals and environmental ethics of nature conservation were not only applicable to common man but the rulers and kings were also bound by them.

Shantiniketan founded by Sir Rabindranath Tagore also highlighted studying with the nature. The newly declared National education policy 2020 also highlights the importance of environment in “part B) 11.8. Towards the attainment of such a holistic and multidisciplinary education, the flexible and innovative curricula of all HEIs shall include credit -based courses and projects in the areas of community engagement and service, environmental education, and value –based education. Environment education will include areas such as climate change, pollution, waste management, sanitation, conservation of biological diversity, management of biological resources and biodiversity, forest and wildlife conservation, and sustainable development and living.”

For the conservation of Environment most of the branches of UNO like (United Nations Environment Programme)UNEP, (United Nations Framework convention on Climate Change)UNFCCC, (United nations Education, Science, and Cultural Organisation)UNESCO, (World Meteorological Organisation)WMO, (Food and Agricultural Organisation)FAO, (Intergovernmental Panel on Climate Change)IPCC, (International Union for conservation of Nature and Natural Resources) IUCN, United Nations Forum for Forests(UNFF) etc are working. There are also various Conventions, Declarations and Protocols formulated for the nature and biodiversity conservation like Ramsar Convention,

Cartagena Convention, Kyoto Protocol, Montreal Protocol, and Convention for Biodiversity Conservation, Tragedy of Commons, Our Common Future, Happy Planet Index, and Earth Overshoot Day etc.

Environmental education or to know the environment has different facets. One is to study the whole environmental science as a scientific discipline or to study basics and important knowledge about the environment along with the regular educational programme. There is another aspect while studying is the “Environment of the Education”. This is also important because it realises us about the environment outside the study area. Realisation of environmental status of the whole earth is not necessary for every person as it is a very vast and multi-disciplinary subject. It involves nearly every subject known to human being. As human being is a part of the environment and its every action affects the environment in either way, everybody should know about consequences of its everyday actions. He should aware about the environment around him and he should try to conserve it. This is the specialised knowledge for an individual though it is only limited to the part of his working area. The specialised organisations of the UNO have given related tasks to everybody from a nation to Corporations, NGOs and common man. Sometime we are not aware about these tasks and are badly affecting the environment as well as performance of our nation and ranking in front of the world.

Some of the important indices which are concerned with an individual’s actions are “Sustainable Development Goals, Environmental Performance Index, City Biodiversity Index or Singapore Index”. These are the indices where a common individual is a mandatory participant; he may or may not be willing to do so. This means every citizen’s action from a country is counted to calculate these indices. So we should aware about the factors noted in these indices.

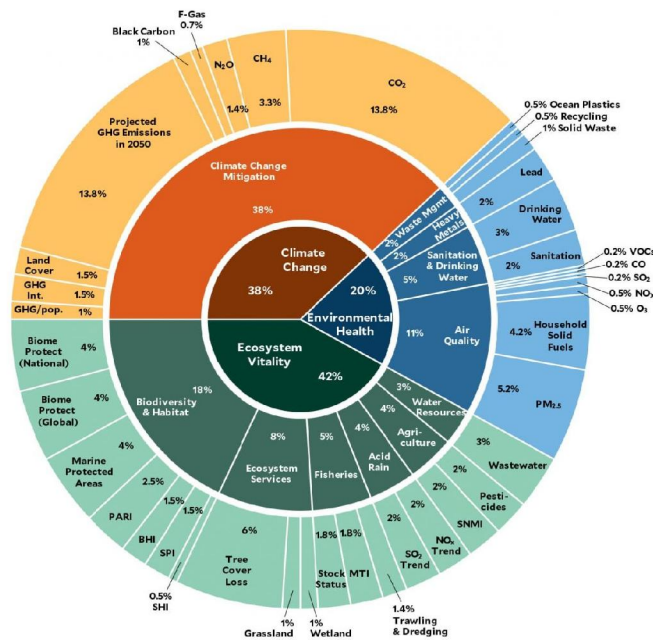
The most important thing today is sustainability. So United Nations has given every member country “17 Sustainable Development Goals”. Every year performance about the goals is monitored. These goals include goals for the country but some goals which are to be performed by individuals. United Nations has also published a “Lazy Persons Guide to Saving the World” booklet, keeping in mind a person who does not want to work hard for the environment. In its introduction it clearly mentioned

“The Sustainable Development Goals are important, world-changing objectives that will require cooperation among governments, international organizations and world leaders. It seems impossible that the average person can make an impact. Should you just give up?

No! Change starts with you. Seriously. Every human on earth—even the most indifferent, laziest person among us—is part of the solution. Fortunately, there are some easy things we can adopt into our routines that, if we all do it, will make a big difference.”

Apart from restricting GHG emissions and waste management, these also state for sustainable agriculture, preserving local flora and fauna, organic farming, sustainable cities, conserving cultural and natural heritage, biodiversity conservation and lot more. Any person as an individual can participate in this programme directly to the United Nations through an App developed by the UN which is available on play store free of cost. But we are not fully aware about it. The result of this ignorance is that India ranked 117th in 2021 in 180 countries.

Another such important index is “Environment Performance Index”. This index is much discussed in India because India ranked 180th means the last rank. For this performance we cannot blame the government because most of the actions are directly related to individuals, no government will not be successful without peoples participation. 100 points are calculated according to their importance in the environmental conservation. Out of 100 points 42 points are allocated to Ecosystem Vitality, 38 points to Climate change policy and 20 points to Environmental health. The Ecosystem vitality contains biodiversity and habitat 18%, ecosystem services 8%, fisheries 5%, Agriculture 4%, acidification 4% and water resources 3% which includes waste water treatment. Climate change 38% includes emission of GHG gases and their committed projection on 2050. Environmental health 20% includes air quality 11%, sanitation and drinking water 5%, Heavy metals 2% and waste management 2% which includes ocean plastics at 0.5%. When we go through the details of each criterion, we will find that as an individual we are responsible for degradation of the criterion, and not the nation. Government can plant the trees but we have to protect it, Govt can build toilets but we have to use it, we have to avoid single use plastics, use vehicle sensibly. The following diagram shows the points allocated in details.



Yet another important index related to the individuals mostly living the cities is “City Biodiversity Index” or the Singapore Index because it is formulated on the performance of the Singapore City. This index indicates overall sustainability of the city. Every city has to calculate its index regularly. In India only 4 to 5 cities have calculated such index and that is for only once. This index indicates how good the city environment, where people live and pay taxes is. Most of the environmental activists may not be aware of it. Following are the 23 indicators from which the city biodiversity index is calculated.

- Indicator 1: Proportion of Natural Areas in the City,
- Indicator 2: Connectivity Measures or Ecological Networks to Counter Fragmentation,
- Indicator 3: Native Biodiversity in Built Up Areas (Bird Species),
- Indicators 4 - 8: Change in Number of Native Species,
- Indicator 9: Proportion of Protected Natural Areas,
- Indicator 10: Proportion of Invasive Alien Species,
- Indicator 11: Regulation of Quantity of Water,
- Indicator 12: Climate Regulation: Carbon Storage and Cooling Effect Of Vegetation,
- Indicators 13 –14: Recreational and Educational Services,
- Indicator 15: Budget Allocated to Biodiversity,
- Indicator 16: Number of Biodiversity Projects Implemented by the City Annually,
- Indicator 17: Policies, Rules and Regulations – Existence of Local Biodiversity Strategy and Action Plan,
- Indicators 18 – 19: Institutional Capacity,
- Indicators 20 – 21: Participation and Partnership,
- Indicators 22 - 23: Education and Awareness.

All the above discussion is very little part of the environmental monitoring and efforts towards the conservation of the same. Earth’s environment is changing from her birth at billions of years ago. The change was very slow may take some million or thousand years. At the abrupt changes cataclysmic events happened such as mass extinction of the major species. Till now such five mass extinctions are happened in earth’s history. Now the noticeable climate change is happening, and humans are responsible. Now we are at the war for our survival not with anybody but with our own bad habits. We as a citizen of the world together should know the facts what is happening around us, what are the guidelines and educate ourselves and others too about it and win the race for survival.