

Environmental Stewardship: Role of Higher Educational Institutions

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Abstract

This paper highlights the role of higher educational institutions in environmental stewardship. It puts forth the significance of environmental sustainability to protect mother Earth. It gives the history of emergence of Environmental Education as a branch of science. It also reiterates the multifaceted role of HEIs in different directions such as academic, research and innovation, campus operation, community engagement, cultural and value formation and leadership and governance. It shows, with examples, how all the stake holders, both internal and external, play a pivotal role in every aspect of the HEIs in achieving the goals of environmental sustainability. It suggests the HEIs to update their curriculum and syllabus at regular intervals according to the reports of recognised committees and governing bodies on the global as well as local environmental issues and challenges along with proposed solutions. Because the HEIs are considered as the catalysts for sustainable development with a holistic approach and they educate, train, and influence future decision-makers.

Keywords: Environmental Education, HEIs, Environmental sustainability, multifaceted roles, stake holders

Introduction

Protection of environment is the fundamental duty of every global citizen. But destruction of environment is being carried in the name of development for decades in building roads, railways, tunnels to establish accessibility and also in the name of religion rather *bhakti*, especially in India. For example, the Himalayan Mountain environment protection is the responsibility of all its frontier and neighboring countries. But no single nation is interested in conservation of the environment to maintain the ecological balance. India must develop indigenous models of development because sustainable development goals are the global need of the hour. It is our foremost responsibility to assert the type of sustainable future we want, for the generations to come.

Emergence of Environmental Education as a Subject

Indeed, environmental issues were taken into account and considered as a branch of modern science in 18th century. Mainly, Alexander von Humboldt, Father of Environment, contributed enormously through his immense explorations and research writings and laid foundations for modern

environmental science to make it a new and significant branch of science to be taught at various levels of education. Then in 1962 the *environmentalism* was first entered the thought process of the public through an American fiction *Silent Spring* of Rachel Carson in which she proclaimed how DDT, a pesticide discovered for destroying malarial causing insect, entered the food chain and accumulated in the fatty tissues, not only of animals but also human beings, causing cancer and some serious genetic damages. For the first time, the urgency to regulate industry in order to protect the environment became a widely accepted concept. Thus, the human being's faith in technological progress was rightly questioned and helped to kick start the environmental movement by the senate committee at America by creating an Environmental Protection Agency. After which the UNO took the responsibility to create awareness among the global citizens to protect planet Earth. In 1972 it declared 5th June, World Environment Day after a congregation of global civil society at America for a good environment. Since then, there was a drastic change worldwide and rapid growth of Environmental Studies as a subject. A World Commission for Environmental Development

(WCED) has been working hard to protect the nature by organising world conferences, in the name of CoP - Conference of Parties, for more than two decades on a single point agenda of global warming and has been submitting its reports and updating the human beings on the status of the earth.

Prof. William Stapp, School of Natural Resources and Environment, University of Michigan, first defined, Environmental Education in 1969 “as a process producing a citizenry that is knowledgeable concerning the biophysical environment and its associated problems” and awareness of needed solutions. He was the first Director of Environmental Education for UNESCO, and then the Global Rivers International Network. The definition of Environmental Education is formed the basis of the Tbilisi Declaration and it identified five main objectives, i.e. awareness, knowledge, attitudes, skills and participation, and actions (UNESCO-UNEP, 1978). Earlier Indian HEIs had shown inconsistent engagement in environmental education (Ghorai & Mondal, 2025). But it was Ramdeo Misra who laid foundations for ecological and environmental science in India and hence was called as ‘father of Indian ecology’ by the worldwide ecologists.

The scope of environmental studies is very vast and deals with many points and observations such as conservation of natural resources, ecological issues, pollution of the surrounding natural resources, and its control, and many other social issues connected to it, and finally the impact of human population on the environment. Environmental Education is instrumental for promoting intergenerational neutrality and even-handedness to inculcates a long-term perspective on environmental governance by educating the present generation on the influence of their day-to-day actions on environmental conditions in future. Thus, the Environmental Education helps to create awareness among the people of India about the ‘environmental issues and challenges, provide them with relevant information and skills, cultivate a sense of concern and responsibility for the environment, encourage them to take action for environmental protection and improvement, and promote a sustainable and clean environment’.

Role of higher educational institutions in environmental sustainability:

Higher Educational Institutions (HEIs) play a pivotal role in environmental protection, extending beyond policy compliance to shaping ecological consciousness. ‘HEIs are recognized as key drivers of environmental literacy’ (Rugbani et al., 2025). Their role is to design curriculum for different levels of students, encourage research and analysis and collaborates with the NGOs for better future of the planet Earth. In Environmental Protection HEIs are not just factories of educational degrees—they are key stakeholders with unique reach across knowledge, policy, and culture. In general, ‘Higher education significantly increases pro-environment attitudes globally’ (Cabalu et al., 2026) as the HEIs have a strategic role in integrating sustainability into courses, research, operations, and community engagement. And their role is multifaceted in environmental sustainability as the focus have to be multi-directional such as academic, research and innovation, campus operation, community engagement, cultural and value formation and leadership and governance.

At academic level the HEIs must focus on curriculum integration across disciplines - Environmental Science as core subject, but inclusion of eco-ethics in literature, green design in engineering, environmental economics etc. There must be a pedagogical shift from rote to inquiry-based projects on local ecology, carbon audits, water footprints and in developing campus as laboratory by encouraging rainwater harvesting, establishing biodiversity parks, zero-waste canteens for a real-world learning. There should be a balance between development and environmental sustainability because development is a responsibility. According to Paulo Pereira and Inga Zaleniene, interdisciplinary studies are the basis of the transformation towards sustainability. Hence, the universities must frame syllabus for the EE with an effective motif of interdisciplinarity. It should also include the efforts of many environmentalists in conserving natural resources that were disturbed in the name of development. For example, Sunder Lal Bahuguna’s the *Chipko Movement* against large-scale cutting down of trees by timber contractors in the Uttarakhand hills, Medha Patkar’s *Narmada Bachao Andolan*, Vandana Shiva, an eco-feminist, and *Gandhi of grain* etc. Inclusion of these biographies will definitely motivate the students to realize their role in protecting the natural resources.

At research and innovation level they should motivate the students to take up research

i.e. student study projects on local ecology, and innovative technology for renewable energy resources. The faculty as researchers can also create knowledge by taking up action research studies on local specific environment, on indigenous practices for conservation of nature and bio-diversity. They can take up mentorship in guiding student projects from near to far i.e. to start with their campus then expand it to the region. This enables the students to transform themselves in developing a sense of responsibility towards the environment and helps them to learn about the importance of preserving natural resources by reducing waste and conserving energy. The HEIs must pay attention to include the new concepts in the syllabus, developed by the scientists. International protocols, government policies, and local wisdom are the foundation for developing environmental education for several stakeholders such as industry, community, individuals, and administrators. This commitment is essential as a guarantee to create synergy in developing natural resources, agricultural resources, human resources, and water resources (Gani et al). For example, 'four water concept' – rain water, ground water, surface water and top soil moisture - developed by Sri T. Hanumanth Rao of Telangana and the measures to retain them.

For the campus operation the students should be encouraged to plunge into action with activities like Eco-clubs, digital activism, plantation or tree drives, waste audits, by reducing single-use plastic, conserving energy on campus by shifting to solar energy and by organizing peer awareness programs in communities as social responsibility. Because HEIs enact sustainability via operations, community empowerment, and policy (Hinterleitner et al., 2026). In promotion of community engagement, inclusion of local corporate and industry sector can support HEI innovation hubs and fund for green labs, sponsor environment sustainable internships under CSR. They can also create employment and training opportunities for environment sustainability skills by building a connection between education and real world. The HEIs can include local community and NGOs in preserving traditional knowledge of water conservation methods, seed saving

techniques, and the information of local biodiversity and its protection. They can collaborate with them for joint clean-up drives in local areas, and can also adopt a local lake and nearby forest to create an accountability among all the stake holders of the institution – students, parents, communities, corporates, industries etc.

For realizing cultural and value formation, leadership and governance, they must train teachers to make them models of Eco-Stewardship by designing environment specific Faculty Development Programs for sustainability and conservation of the mother Earth. They can become role models by practicing sustainability in teaching methods such as reducing paper and plastic usage, promoting the concept of *gurukuls* i.e. outdoor classes in the midst of greenery. They can provide knowledgeable expertise and trained manpower (Raut Prakash Dattatray). The HEIs must provide an authoritative knowledge on some of the prominent environmental acts, policies and rules in India such as, Wildlife Protection Act, 1972, Environment Protection Act, 1986, National Forest Policy, 1988, WALTA Act, 2002 etc.

Role of stake holders of the HEIs:

The stake holders of HEIs also have a crucial role in EE for maintaining sustainable environment for the generations to come. The primary role of a stakeholder is to help the institution to meet its strategic objectives by contributing its experience, perspective and also to provide necessary materials and resources. The development of a sustainability culture through the different activities carried out on the campus such as institutional framework and assessment, research, education, experiences and operations and outreach, have a substantial impact on the outside world, namely on the environment, economy, society and the stakeholder's awareness of sustainability aspects (Pereira Paulo and Inga Zaleniene).

Internal stakeholders such as faculty members, students, administrators and policy makers must directly involve in the daily operations of the institution. The faculty must instill a deliberation among the students and community for a better future with environmentally sustainable practices through their research and the administrators with the help of the policy makers must implement them through the students.

For example, Kanika Jamwal, doctoral candidate,

faculty of law, National University of Singapore, insisted upon the role of communities in conserving water. She emphasized the effective participation of communities in policy making by mainstreaming their ecological practices and highlights that they must address the issues of fragmentation of water management, i.e. different parts of the ecosystem – forests, land, water, and biodiversity – for an integrated approach by considering the interdependence of these constituents. She refers to the ecological practices of the western Indian rural communities – establishment of orans, the sacred forests holding a deeper cultural and religious significance of their communal practices, in addition to water conservation by growing grass cover which in turn results in rain water harvesting. She also advocates the non-human perspective in environmental governance i.e. to take into consideration the needs of animals, birds and other living beings to maintain bio-diversity. This concept can be taken up by the administrators to make it an implementable policy. Another example is the demand and successful fight of the UoH students in cancellation of auction of Kancha Gachibowli land of 400 acres, not only to protect the university lands and but also its rich flora and fauna which in turn definitely results in the sustainable environment.

The external stake holders - individuals or groups, parents, NGOs, industry organizations who are future employers of the graduates, local agencies etc must show interest in protecting the environment though they are not involved directly in the operations of the HEI. For example, the same issue of land auction of Kanch Gachibowli of Hyderabad Central University. It has been protested by many external groups like alumni, parents, NGOs etc. A delegation comprising of civil society members, the JAC members UoH, environmentalists, and social activists met the cabinet members to bring to their notice that the auctioned land inhabits the five species of fauna listed under the Schedule-I of the Wild Life Protection Act, 1972. It raised questions about the violation of the WALTA Act, 2002, which prohibits felling of trees without prior permission and without any assessment for biodiversity. A citizens' collective Save City Forest has been fighting to withdraw TGIIC auction unconditionally to protect the university land, an effective lung space of the surrounding areas, on

one hand and the bio-diversity on the other.

Suggestions and conclusion:

As HEIs influence sustainability discourse through curricula, research, and community ties (Žalėnienė & Pereira, 2021) they must update their curriculum of EE at regular intervals on the basis of the emerging social and ecological needs and the reports of some prominent governing bodies such as the UNFCCC, UNEP, IUCN, CSE and CEE. Because, the HEIs are considered as the catalysts for sustainable development with a holistic approach. And to answer the question, Why HEIs matter most in environmental guardianship, unlike other stakeholders, HEIs educate, train and influence future decision-makers. A student trained properly doesn't just recycle and reuse—they redesign the entire system.

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