

Role of Green Practices in Higher Educational Institutions for Environmental Sustainability

Dr. Subhash Chand

Assistant Professor, Department of Geography, SGS Government College, Nasirabad, Ajmer (Rajasthan), India.

Abstract

The present study aims to explore various Green practices practised in higher educational institutions (HEI's) to attain environmental sustainability so that economic and social development go hand in hand without compromising our environment. Use of renewable sources of energy, proper conservation and management of flora & fauna, rain water harvesting, proper disposal of e-waste and chemical waste from laboratories, reducing use of non-renewable resources, recycling & reusing precious and limited resources, construction of green and eco-friendly buildings by using locally available building materials and incorporating traditional wisdom are some of the green practices which can solve the global environmental problems such as global warming and climate change. HEI's play a major role in spreading environmental awareness not only among students but also among masses by leading society by example. Some green practices such as conduction of certificate courses in organic and natural farming, promoting green lifestyle are also suggested in this paper. These green practices can improve our quality of life, build image of the institution and reduce carbon footprints to save our mother earth.

Key words: Green Practice, Environmental Sustainability, HEI's, Audit, Solar Panel and Rain Water Harvesting

1. Introduction

Earth is the only planet in our solar system which supports life. Life exists only in Biosphere i.e. a thin layer enveloping the earth. All the living beings depend on each other and interact with their environment. Due to faulty models of development, leading to luxurious lifestyle or modern use and throw culture, our mother earth is in great danger. This was realised by us only in early seventies when the effects of air pollution started negatively affecting human health and need for sustainable development was felt which means enhanced quality of life for us and conservation and augmentation of our precious natural resources.

Sustainability is a concern that has been a point of discussion and implementations in many global conferences, in the educational domain which has also removed the barriers of domain boundaries globally. Thus, the idea of sustainable development has gained international attention since its inception in the Brundtland tagged "Our Common Future" during the United Nations Conference on Environment and Development in the year 1987 (Brundtland, 1987). Universities and Colleges are still lagging behind in implementing of Green practices for attaining sustainability as part of their institutional policy.

Higher educational institutions are mini projections of our mother earth where young minds are shaped. Their work culture not only affects the life within the campus but also carries traditions of environmental sustainability beyond the campus (Alshuwaikhat and Abubakar, 2008). Accordingly quality of life is related to employability, housing and socio-economic satisfactions. Kadir et, al. 2012 stated that green practices are important for the image of the university and is an essential component of the campus environment.

2. Literature Review

“Greening the curriculum” according to Roy, et al. (2008), have two main issues in environmental programmes for the Higher Education which are related to reducing energy consumption and waste on campus. Distance learning is a milestone to reduce the infrastructure and activities that used in conventional learning programmes. Fuel consumption and electricity consumption will reduce to many folds by promoting e-learning. According to Cole, 2013, there are several aspects of the higher education institution’s role over green initiative. New solutions can be provided by the educated stake holder not only at local level but also at global level. In higher education system certain goals are to be given to the teaching staffs to educate students about environmental sustainability.

According to Chan, 2013; Cole, 2013, conduction of educational programs and green activities are essential to help students become aware of their environment. Environmental educations should be imparted to the students as a part of their curriculum (Barr, 2012). According to Beringer, 2006 “The people system lies within the eco-system, representing supportive function of the environment in sustaining human life.” Environmental sustainability can be attained by reducing waste, increased use of energy efficient sources, water conservation and reduction in water utilisation and healthy working surroundings as well as clean indoor air (Sonetti et al., 2016). These initiatives can improve quality of life for all, better economic vitality and a reduced environmental footprint (Mat et al., 2011).

3. Objectives of the study:

1. To highlight the need of green practices in HEIs.
2. To list the green practices presently practised in HEIs.
3. To gauge the impact of green practices on environment.
4. To suggest incorporation of some more green practices in HEIs.

4. Methodology:

Keeping in view the objectives of the study, a methodology is developed to expedite the bringing out of the objectives. This study is carried out at institutional level. After literature review, a short survey of the HEIs was conducted which included University (Central, State and private) and colleges both government and private. Also green practices of these HEIs were searched on internet and tabulated.

5. Result and Discussions

Table 1 Green Practices as practised by Higher Educational Institutions (HEIs)

| S. No | List of green practices |
|-------|--|
| 1. | Energy Conservation and Management |
| 2. | Annual Audit of Air, Water and Soil quality |
| 3. | Conservation of water (Rain Water Harvesting) |
| 4. | Conservation and Management of Flora and Fauna |
| 5. | Transport management |
| 6. | Green Library |
| 7. | Promotion of Reduce Recycle and Reuse mindset |

➤ **Energy Conservation and Management:**

Energy is a vital component and without energy life is not possible as it provides fuel to air conditioning, Coolers, Computers, Fans, heating and other vital operations in HEIs campus. It's our duty to promote the use of renewable sources of energy and natural lighting in the campus as natural light boosts positive mood. It is beneficial not only economically but also for sustainable environment (Kadir *et al.*, 2012; Bantanur *et al.*, 2015). Use of LEDs, white light with low wattage bulbs and all air-conditioners within the campus should be set at 25 ° centigrade temperatures to save energy. Buildings should be provided with roof top solar panels.

➤ **Annual Audit of Air, Water and Soil :**

Air, water and soil are the three main components of ecosystem and their deviation from average value directly or indirectly affect our ecosystem. It is prime duty of every institution that these parameters should annually be checked and if there is any deviation from the standard range then proper measures and precaution should be taken to improve air, water and soil quality within the campus.

➤ **Conservation of Water (Rain water harvesting):**

Rain water is natural and life sustaining gift from God. Now it's our duty how we can store rainwater so that not even a single droplet goes waste. Rain water harvesting aims to resolve the issue of freshwater. This indicator involves collecting rainwater using a catchment attached to campus roof buildings. Because rainwater harvesting provides sustainable water provision and hence it is one of the green practice. (Ayog *et al.*, 2015). Other water management initiative is to recycle the waste water within the university campus (CGSS, 2009).

➤ **Conservation and Management of Flora and Fauna:**

Rich biodiversity within the institutions can improve the quality of air, water and soil. Fresh air and pure water are the two fundamental needs of stake-holders. Tree plantation, should be promoted and these flora and fauna management should also be included in curriculum.

➤ **Transport Management:**

To reduce air & noise pollution within the campus vehicles should be restricted to parking areas only. According to Kamal *et al.* (2015) cycling and walking habits certainly will improve the surrounding environment and lessens number of vehicles in the campus. Smoke from these vehicles consists of carbon mono-oxide, nitrogen oxides, volatile organic compounds (VOCs), suspended particulate matter (SPM) and CO₂. Noise pollution generated from the vehicles can also be reduced (Darus *et al.*, 2009). Kadir *et al.* (2012) suggested public transportation and car-pooling as a medium of transport in university campus to achieve clean environment.

➤ **Green Library**

Concept of green library is used to minimize negative impact on environment and improves indoor air quality. The construction and architectural design of library buildings should be environmentally sustainable to maximise use of natural sunlight and fresh air. As far as possible, locally available building materials and traditional knowledge should be used. Conservation of resources should be maximised by use of online study materials. According to Antonelli, 2008 role of the library is to serve the community and libraries act as role models for sustainability by providing accurate information on all green topics.

➤ **Promotion of Reduce, Recycle and Reuse mindset**

Reduce, Recycle and Reuse mindset of people can bring revolution in the environmental sustainability. If we promote reduce, recycle and reuse concept through various green activities among students then there will be no problem of waste disposal, which will help to make our environment clean and green.

To achieve United Nations Sustainable Development goals by reducing carbon footprints, it is found that a majority of the government run institutes either have functional roof top solar panels or are in the process of instillation. A few private HEI's also have functional roof top solar panels and solar street lights. Regular audit of air, water and soil quality is hardly done due to the lack of financial and technical resources. All the HEI's go for annual tree plantation derive in the monsoon months but high mortality rate of plants due lack of post plantation care is depicted. Hence emphasis should be given on post plantation care to improve plant survival rate. According to Nifa *et al.*, 2015 sustainable development support green buildings that reduce water, energy consumptions and having less carbon footprint. Furniture waste, chemical waste, e-waste and paper waste are the main sources of carbon foot prints within the campus. These can be minimised by proper disposal and recycling.

6. SUGGESTIVE GREEN PRACTICES:

These are the some green practices which can be incorporated by HEI's

1. Green summer courses for housewives such as kitchen gardening.
2. Promoting green life style

3. Conduction of certificate courses in organic and natural farming, vermi-composting and best out of waste.
4. Promoting paperless office
5. Honouring a member of staff and a student in annual function for taking green initiatives.

7. CONCLUSION:

Presently HEI's are playing a major role in spreading environmental awareness among its stake holders through conduction of various in campus and off campus environmental activities. They are also educating masses by practising green initiatives in their campus. Green campuses play role models for other institutions. But still a lot has to be done because protecting our environment is not a simple game but now it is a complex issue which can be resolved by integrating green practices in letter and spirit to achieve sustainable development.

8. REFERENCES:

- Alshuwaikhat, H. M. and Abubakar, I. (2008), "An integrated approach to achieving campus sustainability: assessment of the current campus environmental management practices", *Journal of Cleaner Production*, Vol. 16 No.16, pp.1777-1785.
- Antonelli, M.(2008). "The green library movement: an overview and beyond" *Electronic Green Journal*, Vol. 1 (27).
- Ayog, J. L., et, al. (2015), "Feasibility Study of Rainwater Harvesting in Universiti Malaysia Sabah's Residential Colleges in Support Of the Eco-Campus Initiative", *2nd Regional Conference on Campus Sustainability: Capacity Building in Enhancing Campus Sustainability*, Kota Kinabalu, Malaysia, pp. 206-216.
- Bantanur, S., Mukherjee, M. and Shankar, R. (2015), "Sustainability perceptions in a technological institution of higher education in India", *Current Science*, Vol. 109 No. 12, pp. 2198-2203.
- Beringer, A. (2006). Campus sustainability audit research in Atlantic Canada: pioneering the campus sustainability assessment framework. *International Journal of Sustainability in Higher Education*, 7(4), 437 – 455
- Brundtland, G. H. (1987) "World commission on environment and development", *Environmental policy and law*, Vol. 14, No.1, pp. 26-30.
- CGSS. (2009), Centre for Global Sustainability Studies. <http://cgss.usm.my/> (Accessed 22 December 2016).
- Darus, Z. M., et,al (2009), "Development of sustainable campus: Universiti Kebangsaan Malaysia planning and strategy", *WSEAS Transaction on environment and development*, Vol. 5 No. 3, pp.273-282.
- Kadir, S. M. A., et,al (2012), "Implementing Sustainability on the Campus: Towards A Better Understanding of Sustainability Initiatives", *LUK2012*, pp. 1191-1198.

Kamal, M. M. Et,al (2015), “The Case Study of 30 years UiTM Pahang”’s Development as a Sustainable University Campus”, *KONAKA 2015*, pp.148-154.

Mat, S. O. H. I. F., et,al (2011), “Managing Sustainability in Universiti Kebangsaan Malaysia”, *Environmental Problems and Development*, pp.33-38.

Nifa, F. A. A., et,al. (2015), “Towards Development of Sustainable Design in Malaysian University Campus: A Preliminary Framework for Universiti Utara Malaysia”, *Jurnal Teknologi*, Vol. 77 No. 5, pp.43–49.

Roy, R., et, al. (2008). Designing low carbon higher education systems Environmental impacts of campus and distance learning systems. *International Journal of Sustainability in Higher Education*, Vol. 9, 116-130

Sonetti, G et,al. (2016), “True Green and Sustainable University Campuses? Toward a Cluster Approach”, *Sustainability*, Vol. 8 No. 1, pp.2-23.

