

Environmental Management Systems (Emss) In The Higher Educational Institutions: Need, Actions And Installation Process

Dr. Shailinder Sekhon,

Associate Professor (Commerce), Department of Distance Education, Punjabi University Patiala.

Abstract: *Universities are no longer confined to its four walls rather they are developing as big cities inside that area. Academic blocks, libraries, hostels, cafeterias, administration blocks, dispensary, shopping area, schools etc. are becoming major part of such institution. Every part of the campus is using environmental resources. It can both teach and demonstrate environmental principles by taking actions to understand and reduce the impact of its activities on the environment. It is equally important to incorporate sustainable practices into planning and operations of the campus if it wants to sustain in the future. Thus, a proposed course of action for promoting environmental education and installation of EMS in the universities has been suggested.*

I. Introduction

Environment Protection has emerged as the biggest challenge to the human society in the recent times. Whereas, industrialization is the answer to the ever increasing needs of growing population for the survival of human race, at the same time, preservation of the natural resources, controlling of pollution are the need of the hour. Thus, we need to follow the path of sustainable development in harmony with the environment.

Environmental protection is the collective responsibilities of the state, society and interested groups working for it. And the present paper emphasized that as the business houses every educational institution too has to play the role of stabilizing the natural environmental climate by paying sharp attention to the pollution free environment, and implementation of EMS (Environment Management System).

An environmental management system (EMS) is a framework for understanding an organization's "environmental footprint," complying with environmental regulations, and implementing proactive pollution prevention strategies. An EMS is not a checklist completed once a year to review compliance or a one-time project, rather, an EMS invokes a continual cycle of planning, doing, reviewing, and improving the processes and actions associated with the organization's responsible environmental management. Madhavi Joshi (Programme coordinator, CEE) in her paper suggested that real world environmental problems need integration for which Education for Sustainable Development is an important tool. According to her, the core issues of Education for Sustainable Development are 1) value education, 2) Environmental education, and 3) Health education. To promote environmental practices in the campuses, universities need to 1) strengthened the role of university population; various disciplines, and 2) to install the EMS.

II. Objectives Of The Paper

The major objective of this paper is to highlight the need and process of implementing environment management practices in the higher educational institutions. To achieve this main objective, the following specific objectives have been designed:

1. To highlight the need of environmental management system in Higher Educational System.
2. To propose the course of action for Universities in Managing Environment.
3. To propose the installation process in EMS in their campuses.

The process of **collection of data** has been based on secondary sources only. The background or secondary material based data, required for this research study is gathered from following sources:

- Relevant research papers.
- Project reports.
- Websites.
- Survey reports.

III. Need Of Environmental Management System In Higher Educational Institutions

Universities are no longer confined to its four walls rather they are developing as big cities inside that area. Academic blocks, libraries, hostels, cafeterias, administration blocks, dispensary, shopping area, schools etc. are becoming major part of such institution. Every part of the campus is using environmental resources. It can both teach and demonstrate environmental principles by taking actions to understand and reduce the impact of its

activities on the environment. The ways university handles the problems of heating and cooling, waste disposal, recycling of waste, efficient use of energy, waste water management, e-waste management, food waste, transportation, material procurement, purchasing, storage, disposal of chemical & hazardous waste from labs, noise pollution, use of pesticides in the university farms and many more are directly related to the environmental consequences. In addition to this construction, maintenance, operations and renovations provide great opportunities to improve the environmental conditions of the universities.

While starting sustainable practices on a campus, the focus should be typically on several key issues, including 1) energy usage, 2) water consumption and treatment, 3) the optimum and reuse of resources, 4) green curriculum development, 5) change in purchasing policies, and 6) administrative operations. These issues demand a strategic approach while implementing EMS in universities.

A business deals with mainly three processes i.e. Input (raw material)-Processing (Resources)-Output (final product). In the same way universities also reflect these three processes namely: Input (Students)-Resources (Teaching & research)-output (doctors, engineers, leaders, economists, professionals etc). Thus, one thing common between the business organisations and universities is 'Resources'. Both are getting these resources directly or indirectly from the environment. In the same manner both are equally responsible towards environment. Now the question arises how these can meet their responsibilities towards environmental protection? The simple answer to this question is application of Environmental management Strategies in the campus.

It is equally important to incorporate sustainable practices into planning and operations of the campus if it wants to sustain in the future. Environmental policy, its implementation plan, management review, EMS audit should be the core components of strategically planned EMS. Otherwise environmental degradation will prove a big threat to universities in the coming times.

The excerpt from the thesis submitted by **Amelia C. Clark on Dalhousie University**, reiterates that "Higher education institutions have a role in helping society become sustainable... There are four distinct stakeholder categories at a university: staff, students, faculty and management (senior administration, Senate and Board of Governors)...and all four groups together can develop, plan, implement, monitor and revise a university's environmental policy."

Similar views have been expressed on the potential of students as well. For instance, **National Assessment and Accreditation Council, India**, on the issues of Empowerment of students in quality sustenance in education feels that empowerment of students will involve twin aspects: firstly, the students should be responsible enough to handle the power to change things or decide the course of events; secondly, empowerment will mean enhancing those skills which will enable them to think, act and face realities. ISO (International Organisation of Standards) certification for educational institutions considers students as customer. The quality procedure contains academic development of student as prime objective, followed by social development. Development of values and ethics are included so as to mould the student into all rounded personality. It is a holistic approach to student development.

P.R. Trivedi in his book stated that Universities can both teach and demonstrate environmental principles and stewardship by taking action to understand and reduce the environmental impacts that result from their own activities. Many of the actions that reduce the environmental footprints of the university involve the reduction of the waste: wasted heat, wasted water, wasted electricity, wasted chemicals, and solid waste.

Roorda in his study also mentioned that, in the former years and in various countries, in different ways attempts have been made to define the way in which Higher Education should contribute to sustainable development. One of these ways is the implementation of sustainable subjects in the curricula.

The Halifax Declarations at Halifax, Canada, in December 1991, the specific challenge of environmentally sustainable development was addressed by the presidents of universities from Brazil, Canada, Indonesia, Zimbabwe and elsewhere, as well as by the senior representatives of the International Association of Universities, the United Nations University and the Association of Universities and Colleges of Canada. All were of the view that human demands upon the planet are now of a volume and kind that, unless changed substantially, threatens the future well-being of all living species. Universities are entrusted with a major responsibility to help societies shape their present and future development policies and actions into the sustainable and equitable forms necessary for an environmentally secure and civilized world.

The Talloires Declaration at Talloires, France in October, 1990, a conference of university presidents from every continent, held under the auspices of Tufts University of the United States, issued a declaration of environmental commitment that has attracted the support of more than 100 universities from dozens of countries. The conference suggested that stabilization of human population, adoption of environmentally sound industrial and agricultural technologies, reforestation, and ecological restoration are crucial elements in creating an equitable and sustainable future for all humankind in harmony with nature. Universities have a major role in the education, research, policy formation, and information exchange necessary to make these goals possible.

Thus, university leaders must initiate and support mobilization of internal and external resources so that their institutions respond to this urgent challenge.

Luciano et. al. corroborates that sustainability inspired education would have spin-off effects on broader communities, be they local or global. Through classroom learning and collaboration among compartmentalized sectors of the institution, the knowledge of campus community stakeholders can be applied to address the ecological and social challenges faced both today and in the future. According to him it should not only teach excellence but should exemplify it.

Suresh Jain, Pallavi Pant in his paper titled "Environmental management systems for educational institutions: A case study of TERI University, New Delhi", discussed a model for implementation of an environmental management system (EMS) in institutes of higher education in India. They suggested that, implementing an EMS in the university will help to reduce the impact on environment due to various day-to-day activities. It will also lead to developing environmental consciousness in the minds of young professionals who graduate from the university as well university staff. There have been very few examples of environmental consciousness in educational institutions in India. So, there is a need for model systems for incorporating environmental management in the university set-up.

Sara King, (2011), in her paper titled "Choosing the Most Appropriate Environmental Management System for an Institution of Higher Education" has found that Institutions of higher learning are leading the way towards sustainability through both their innovative research and the sustainable example they set. One tool that an institution can utilize to help them to become more sustainable is an Environmental management system, EMSs have been widely utilised in the corporate sector; but there is a definite cultural distinction between higher educational institutions and corporations. She evaluated various EMSs and suggested that further research is needed into the successful implementation of higher education EMSs.

Thapak et al in their study "Use of technology to save environment by saving paper in an online era" have suggested that Paper industry is a one of the largest user of wood for which trees are cut, leading to detrimental effect on the environment. In spite of technology offering an environment friendly alternative the use of paper has not reduced in the Indian context. In some developed countries the online technology has helped to reduce the consumption of paper. The study emphasised on substitution of technology with print outs in organizations and academic institutes. It further suggested that technology has come to the aid of mankind whenever there has been a problem. As now a day, online technology is very much developed and capable of handling almost all kinds of transaction related to every organization including schools, colleges and universities.

In nutshell, the role of universities and colleges involves Greening colleges and university education; curriculum intervention; capacity building of educational institutions; awareness among the university community; developing environmental education units/departments; and formulating, linking and implementing the environmental policy with operational plans of the university. To play this role, universities need to spread environmental education and do research into new technologies, methods and enhance capacity and skills of current students to make them future leaders of change.

IV. Propoesd Course Of Action For The Higher Educational Institutions To Install Ems:

This part of the paper proposes the role of various disciplines and university population to address the environmental problems and this section proposes the generic environmental management system for the universities which is based on the ISO 14001, developed by the International Organization for Standardization which covers the following five categories :

- (1) policy;
- (2) planning;
- (3) implementation;
- (4) checking and corrective action; and
- (5) review and improvement.

The main elements and requirements of the ISO 14001 EMS Standard are as discussed below:

- (1) **Environment Policy:** Define the organization's environmental policy and ensure that it:
 - a) is appropriate to its activities and services;
 - b) supports continual improvement and pollution prevention;
 - c) contains a commitment to comply with relevant legislation and regulations;
 - d) has a framework for setting objectives and targets;
 - e) is documented, implemented, maintained and communicated to all employees; and
 - f) is publicly available.

(2) **Planning:** The Planning process should focus on following aspects:

- 1. Environmental Aspects:** Develop a procedure to identify the environmental aspects of activities, in order to determine those which have significant impact. Ensure that these are considered while setting objectives.
- 2. Legal and Other Requirements:** Identify legal and other applicable requirements.
- 3. Objectives and Targets:** Establish and maintain documented environmental objectives and targets, at each relevant function and level within the organization.
- 4. Environmental Management Programs:** To achieve objectives and targets, designate responsibilities and determine the methods and schedule by which objectives and targets are to be achieved.

(3) Implementation and Operations: This phase of proposed action includes:

- 1. Structure and Responsibilities:** Roles, responsibilities and authorities shall be defined, documented and communicated. Management shall provide resources (including human resources and specialized skills, technology and funding) essential to the implementation of the EMS.
- 2. Training, Awareness and Competence:** Identify training needs for all personnel whose work has a significant impact upon the environment. Make employees or members aware of:
 - a) the importance of conformance with the environmental policy and procedures and requirements of the EMS;
 - b) the significant environmental impacts of their activities and the environmental benefits of improved personal performance;
 - c) their roles and responsibilities in achieving conformance; and
 - d) the potential consequences of departure from procedures.
- 3. Communication:** Develop procedures for internal communication and handling communication from stakeholders regarding environmental issues and the EMS.
- 4. Documentation:** Establish and maintain information to describe the core elements of the management system and direct people to related documentation.
- 5. Documentation control:** Ensure that all EMS documentation:
 - a) can be located;
 - b) is periodically reviewed, revised and approved;
 - c) is available at all appropriate locations; and
 - d) is retained, as required, for legal and/or knowledge preservation purposes.

(4) Checking and Corrective action: After implementation, following, checking and corrective actions are suggested:

- 1. Monitoring and Measurement:** Develop procedures to monitor the key characteristics of operations and activities that can have a significant impact on the environment. Record information to track performance, relevant operational controls and conformance with objectives and targets.
- 2. Corrective and Preventive Action:** Develop procedures for defining responsibility and authority for handling and investigating non-conformance, taking action to mitigate any impacts caused and for initiating corrective and preventive action.
- 3. EMS Audit:** Conduct periodic EMS audits in order to:
 - a) determine whether or not the EMS: (i) conforms to expectations for environmental management, including the requirements for this standard; and (ii) has been properly implemented and maintained; and
 - b) provide information on the results of audits to management.

(5) Management and Review: Top management shall regularly review the effectiveness of the EMS, to ensure its continuing suitability, adequacy and effectiveness. All necessary information should be collected to allow management to carry out this evaluation. The management review shall address the possible need for changes to policy, objectives and other elements of the EMS.

V. Proposed Ems Implimentation Guide For The Higher Educational Institutions

This part of the paper highlights some tips for the implementation of EMS in the universities as guided by Jen Carville. Following are the steps of this programme:

1. Obtain Top-Level Commitment: An EMS without commitment from the highest level of the administration is like a car without a driver – it will not run. Successful EMSs are characterized by top-level commitment demonstrated through words and actions.

2. Identify An EMS Manager Responsible for Coordinating EMS Efforts: The EMS Manager in turn should form an EMS Team including other personnel familiar with the institution's operations, material use, and waste management.

3. Identify and Discuss Important EMS Features: The EMS Team should meet to identify and discuss important EMS features that will guide the creation and implementation efforts. Several examples are provided below:

- ◆ **Continual Improvement:** An EMS should feature continual improvement through "plan-do-check-act" strategies that lead to more efficient EMS implementation and better environmental performance.
- ◆ **Compliance:** An EMS should, at a minimum, incorporate a systematic approach to maintaining compliance.
- ◆ **Emphasis on Pollution Prevention:** When developing options for achieving objectives and targets, action plans that prevent pollution through source reduction should be favoured.
- ◆ **Results-Oriented:** Although Universities will create documentation during EMS implementation; the focus of the EMS should be on achieving results, that is, measurable or demonstrable environmental performance improvements.

4. Communicate the EMS Initiative to Faculty, Students, and Staff and Invite Input: Faculty, students, and staff should be aware of the EMS implementation effort, its, purpose and elements, and how individually, they contribute to achieving environmental performance objectives.

5. Conduct a Preliminary Review or Gap Analysis: A gap analysis should be performed to identify: (1) current environmental management practices that can "evolve" into EMS elements and (2) missing EMS elements.

6. Determine the Scope for the EMS: Every University will have unique circumstances that dictate the extent and focus of its EMS.

Therefore, the EMS Team should step back and make decisions regarding the scope of the EMS. Specifically, the EMS Team should consider issues such as:

- ◆ Should the EMS cover both environment and health and safety issues?
- ◆ How pertinent is the ISO 14001 EMS model to our University?
- ◆ Do we need to tackle the whole University at once or build momentum with selected departments and activities before expanding?

7. Begin Implementing Guide Elements: Steps 1 through 5 lay the foundation for actions to construct the EMS. The Universities, EMS Implementation Guide contains the minimum elements needed for a functioning EMS.

VI. Conclusion

Education is not merely acquiring knowledge, gathering and correlating facts; it is to see the significance of life as a whole. So, the main function of education is to create human beings who are intelligent and can be integrated to achieve some common objective. In the given context, it has been observed that university educated labour is crucial to the adornment of global environmental literacy and sustainability. Thus, multidisciplinary course of action for promoting environmental education and installation of EMS in the universities has been proposed.

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