World Journal of Pharmaceutical and Life Sciences
WJPLS
www.wjpls.org
SJIF Impact Factor: 4.223

ISO 14000-ENVIRONMENTAL MANAGEMENT SYSTEMS- A NEW APPROACH TO ENVIRONMENTAL PROTECTION

Dr. Prem Kumar Dara[1]* and Dr. Ketema Tilahun Gelaye[2]

[1]Associate Professor, Gambella University, Ethiopia.
[2]Assistant Professor, Gambella University, Ethiopia.

***Corresponding Author: Dr. Prem Kumar Dara**
Associate Professor, Gambella University, Ethiopia.

Article Received on 01/04/2017 **Article Revised on 22/04/2017** **Article Accepted on 13/05/2017**

ABSTRACT

Rapidly growing developmental activities and ever increasing population causes enormous strain on environmental resources leading to severe degradation of environment. But for maintaining healthy life on earth there must be a balance between resource utilization and capacity of environment. All this can only be possible if environment and its components are properly understood and managed. In this regard an environmental management system (EMS) was evolved in the early nineties for environmental conservation. It help organizations to minimize the negative impacts of operations or processes that affect the environment and leading to cause harmful effects on air, water, or land quality. The core elements of EMS include environmental policy, environmental action plan, environment related organizational structures and integration of environmental concerns. The main benefits of EMS are improved environmental performance, enhanced compliance, pollution prevention, improve efficiency, enhanced image in public and also enhanced environmental awareness.

KEYWORDS: Environmental Management Systems, conservation, degradation, ISO14000.

1. INTRODUCTION

An Environmental Management System (EMS) is part of an organization's overall management system. It is a systematic approach dealing with the environmental aspects of an organization. EMS is a 'tool' that enables an organization of any size or type to control the impact of its activities, products or services on the natural environment. It provides a framework to help the organization identify those aspects of its business that have a significant impact on the environment, to set objectives and targets to minimize these impacts and to develop programmes to achieve targets and implement other operational control measures to ensure compliance with the stated environmental policy *(International Trade Centre (ITC),2001).*

1.1 Origin

During the 1992 Earth Summit in Rio de Janeiro, the Business Council for Sustainable Development suggested that the International Organization for Standardization (ISO), which had already established standards for the quality of air, water, and soil, should develop international standards for environmental performance based on the concept of sustainable development. In 1993, ISO formed the technical Committee 207 on Environmental Management to develop international standards for environmental management tools and systems *(International Trade Centre (ITC), 2001).*

2. A new approach to environmental protection

In the last two decades environmental problems have increasingly become the centre of attention, raising the level of consideration of government, productive industries, legislative organs and common people on the need to contain risks that human activities have on the ecosystems. Voluntary initiatives represent a more effective and desirable alternative to the 'command and control' policies: they provide flexibility for businesses to reach desired goals in the most effective manner *(Sharmistha Banerjee et.al.,2012)* As a part of such organizational measures various mandatory measures have been designed to keep industrially polluting at bay. In this regard an environmental management system (EMS) was evolved in the early nineties for environmental conservation. It help organizations to minimize the negative impacts of operations or processes that affect the environment and leading to cause harmful effects on air, water, or land quality (C. Barbu et.al.2013).

An environmental management system also manage natural resources and thus improves reliability and credibility of the environmental policies, setting targets,

keeping appropriate records and undertaking regular reviews of organization for sound environmental performance. A product can be only qualified as being environment friendly when its life cycle 'from cradle to grave' respects the needs of the environment. An emphasis on environmental management in the real engineering sense was made by Khan et. al. (2002) for developing an effective environmental management system through life cycle assessment, by giving demonstration of a real life case study of an industry that achieved landmark success in managing its environment, production, as well as winning the good faith of society (I. S. Arvanitoyannis (2008)).

A study conducted by C. M. Raymond et.al. (2010) observed that there is no single optimum approach for integrating local and scientific knowledge and encourage a shift in science from the development of knowledge integration products to the development of problem-focused, knowledge integration processes. These processes need to be systematic, reflexive and cyclic so that multiple views and multiple methods are considered in relation to an environmental management problem (F.I. Khan, V. Raveender and T. Husain (2002)). In another investigation M. Lozano and J. Valles (2007) analyzed implementation of EMS in public administration and found that economic and environmental advantages were obtained by municipality when implementing an EMS (C. M. Raymond et.al. (2010)).

2.1 ISO 14000 series

International organization for standardization (ISO) was formed in 1947 for promoting worldwide standardization to facilitate international commerce. ISO published standards for voluntary acceptance but are generally incorporated into national standards. There are more than hundreds countries members to it and each member country is represented by one standard organization. ISO 14000 is an International Standard (1996) applicable on international scale and help to improve EMS of an organization or system. The transformation of these management practices is not limited to industrialized countries. In anticipation of the non-tariff trade barriers that could be erected as a result of these standards, many developing countries are seeking avenues of compliance with ISO 14000's requirements (M. Lozano and J. Valles (2007). ISO consider three key principles while developing international standards.

1. ***Consensus:*** Various groups among society give their views including manufacturer, vendors, engineering, research organizations and governments.
2. ***Industry-wide applicability*:** Standards are drafted to satisfy industries and customers need.
3. ***Voluntary nature:*** All standards drafted are voluntary in nature, thus no legal pressure for their adoption.

ISO 14000 standards are of two types:

- Normative standards: Indicate requirement that has to be met and which can be audited for certification
- Informative standards: Indicate requirements and guidance which need not be audited for certification (S.T Mohamed, 2001).

Supporting systems of ISO 14000 are ISO 1410 (Environmental auditing), ISO 1420 (Environmental Labeling standards), ISO 1430 (Environmental performance standards), ISO 1440 (Life cycle assessment), ISO 1450 (Environmental terms and definitions) and ISO 1460 (Environmental aspect in product standard) (V. Kulkarni and T.V. Ramachandra, 2009).

.

3. ISO 14000 model

The ISO 14000 model follows the Plan-Do-Check-Act (PGCA) strategy, a self-improving loop including the following steps:

Plan: Launching of a confirmed policy by the management.

Planning of objectives in relation with this policy.

Do: Implementation of the provisions specified in the plan.

Check: Verification and assessment of results and progress achieved.

Act: Review for continual improvement of the system.

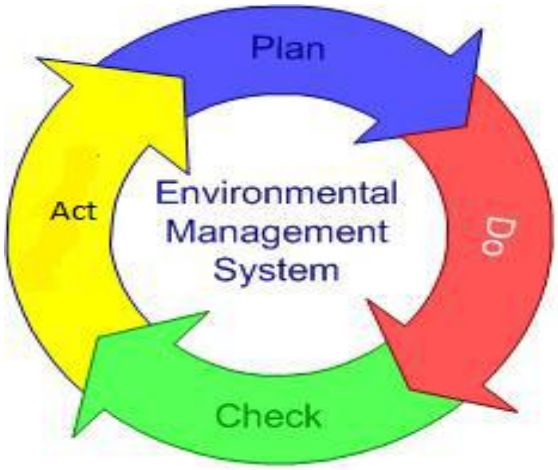

Figure 1: ISO14000 Model.

Although the ISO 14000 standards are designed to be mutually supportive, they can also be used independently of each other to achieve environmental goals (Environmental Management, (2002))

4. The key elements of an ISO 14000 EMS

4.1 *Environmental policy*

The environmental policy and the requirements to pursue this policy via objectives, targets, and environmental programs.

4.2 Planning

The analysis of the environmental aspects of the organization (including its processes, products and

services as well as the goods and services used by the organization).

4.3 Implementation and operation

Implementation and organization of processes to control and improve operational activities that are critical from an environmental perspective (including both products and services of an organization).

4.4 Checking and corrective action

Checking and corrective action including the monitoring, measurement, and recording of the characteristics and activities that can have a significant impact on the environment.

4.5 Management review

Review of the EMS by the organization's top management to ensure its continuing suitability, adequacy and effectiveness.

4.6 Continual improvement

The concept of continual improvement is a key component of the environmental management system; it completes the cyclical process of plan, implement, check, review and continually improves.

5. Benefits of EMS

Implementing an EMS will help a company to establish confidence in interested parties (customers, employees, shareholders, suppliers, regulators, insurance companies, financial institutions, local communities).

The potential benefits small and medium-sized enterprises can draw from implementing an EMS include (Sheldon C. and Yoxon M. 2006)

- Improving market access,
- Assuring customers of commitment to demonstrate environmental management,
- Adopting a process of continual improvement,
- Improved environmental performance,
- Adopting a preventive approach to ensure compliance with statutory and other requirements applicable to the company,
- Enhancing image and market share,
- Preventing pollution by conserving resources like electricity, water, coal,
- Improved operating efficiency,
- Enhanced employee morale in a safe working environment,
- Credibility with stakeholders,
- Competitive market advantage,
- Improving cost control,
- Meeting vendor certification criteria,
- Legal compliance and facilitating the attainment of permits and authorizations,
- Better image and maintaining good relations with the public, regulators, shareholders, investors,
- Heightened employee awareness of, and responsibility towards, the environmental aspects of their activities,
- Competitive advantage in research.

6. Certification for EMS

An organization can apply for certification when at least its EMS is operational for a minimum of three months and after conducting audits by certification body. The documentation for EMS is must and it should make clear relationship of management system in operation of entity within organization which is subjected to certification. An environmental management manual is a key document for EMS as it contains environmental policies and clearly defines duties of a person in charge of verification of activities in organization, it also contains list of all procedures.

7. CONCLUSIONS

From present study, it was concluded that environmental resources should be conserved for healthy today and tomorrow, without compromising economic development. There exist various environmental management systems and standards available throughout world. So for better performance and reduced trade barriers, organizations must adopt such systems as per their suitability. Proper implementation of such systems will not only improve environment but also promote sustainable development.

REFERENCES

1. C. Barbu et.al. A Theoretical Study Between the Two Environmental Management Systems: Eco Management Audit Scheme – Emas - and ISO 14000, Journal of Environmental Management and Tourism, 2013; 3(2): 59–69, ISSN (Print) 2068-7729.
2. S. Arvanitoyannis ISO 14000: A Promising New System for Environmental Management or Just another Illusion? Waste Management for the Food Industries, 2008; 39-96.
3. *IEMA* guidance on EMS (www.iema.net/ems)
4. EMS ISO 14001 Gap Analysis Tool, A Guidebook for Improving Energy and Environmental Performance in Local Government, 2009.
5. F.I. Khan, V. Raveender and T. Husain Effective environmental management through life cycle assessment, Loss Prevention in the Process Industries, 2002; 15(6): 455-466.
6. C. M. Raymond et.al. (2010) Integrating local and scientific knowledge for environmental management, Journal of Environmental Management, August 2010; 91(8): 1766-1777.
7. M. Lozano and J. Valles (2007) An analysis of the implementation of an environmental management system in a local public administration, Journal of Environmental Management, March 2007; 82(4): 495-511.

8. S.T Mohamed, The impact of ISO 14000 on developing world businesses, Renewable Energy, 2001; 23(3–4): 579-584.
9. Sheldon C. and Yoxon M. *Environmental Management Systems A Step-by-Step Guide to Implementation and Maintenance*. Earthscan Publications, UK, 2006.
10. V. Kulkarni and T.V. Ramachandra Environmental management, The Energy and Resource Institute, TERI Press, 2009; 195-224.
11. Tech Monitor, 1998; 15(5).
12. http://goliath.ecnext.com/coms2/gi_0199-5540995/Judicious-incentives-international-public-policy.html
13. http://www.bsigroup.co.in/en-in/Assessment-and-certification-services/Management-systems/Standards-and-schemes/ISO-14001/