FACTORS AFFECTING THE IMPLEMENTATION OF ENVIRONMENTAL MANAGEMENT SYSTEM (EMS) FOR ENTERPRISES IN SRI LANKA.

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Abstract

For improving the environmental performance in industries, Sri Lanka has been active in implementing ISO 14001, Environmental Management System (EMS) standard. Using structured questionnaire survey and the Relative Importance Index (RII) this paper identified the critical factors affecting the effective implementation of ISO 14001 for enterprises. Out of fifteen critical factors the five tops are; environmental consciousness of top leader, commitment of management, legal enforcement, professional expertise and encouragement mechanism for cleaner production. Based on the survey, it proposes the government should play an important role in promoting environmental management. It is necessary for the government to provide active support in following aspects including mandatory policy, encouraging policy and supporting policy.

Introduction

The environmental management is "the system that anticipates and avoids or solves environmental and resource conversation problems (Thompson,2002)". In 1970s and 1980s the concept of environmental management was largely technocratic and end of pipe (Barrow, 2005).The main approach was top-down using pressure from legislation which may lead to find and closure. At the end of 1980s, environmental management began to seen as cost reduction and an institutionalized organizational task, and being **green and clean** became a popular catchphrase for advertisement products. But in 1990s with the increased of stakeholder's pressure on environment, organizations recognized the environmental impacts associated with their operation through the introduction of comprehensive environmental management systems.

In the last twenty years, environmental management has shifted from being subject to "Command and control" to self regulation and accept public accountability and consultation (Martin, 2002). Environmental management is still undergoing rapid change, but the goal remains the same to ensure sustainable development.

Environmental Management System (EMS) and ISO 14001

In response to the pressing need for companies to address the impact of enterprises activities on the environment, in 1996 the International Organization for Standardization (ISO) introduced the ISO 14000 series of standards. The standards, claimed to be less confroustational and user-friendly may provide a potentially innovative supplement to current environmental regulations (Murray, 1999). The series of standards will help companies integrate environmental considerations into corporate decision making in a more organized and systematic fashion (Gale, 1996). The ISO 14001 is designed to introduce

environmental improvement into every aspect of a company's operations, and offers an organized approach to manage environmental issues. The focus of the standard is on the entire organizational structure of the business, thus bringing environmental issues into the mainstream of the corporate decision-making process. Given that businesses are increasingly asserting their role as responsible social players and regarding environmental concerns as an integral part of their daily operations, the ISO 14001 standard may well be an indicator of a company's commitment to environmental responsibility (Tucker and Kasper, 1998 ; Murray, 1999).

Today ISO 14001 certified companies around the world insist the certification is a prerequisite for business relationships. The ISO 14001 was revised in 2004 aimed at emphasizing transparency of process, continual improvement of performance and periodic evaluation of legal compliance. However since the issuance of the ISO 14000 standard series in 1996, the standard spread across the world rapidly and the number of organizations certified under the scheme has been constantly increasing (Stager, 2000). By January 2007 over 129,000 organizations worldwide gained ISO 14001 certification with the majority in Japan, China and Spain. It should be noted that Sri Lankan enterprises also have begun to show their motivation in environmental management. Now many enterprises in Sri Lanka responding to environmental management, offering green products, improving regulations with regulators and beautifying their facilities. Among those responses the most popular and visible demonstrations of environmental responsiveness is by obtaining the certification of ISO 14001. By January 2007 there have been 49 Sri Lankan organizations gained ISO 14001 certification which is ranked second in South Asia and first place occupied by India (Peglau,2007).

There are various factors that influencing the implementation of EMS and there may be obvious differences between the adoptions of EMS for enterprises. Within this context this paper is aimed to identify the factors affecting the implementation of EMS for enterprises in Sri Lanka.

Methodology

Structured questionnaire was used to collect the data and telephone discussions were also done where further clarifications required. Before conducting the survey, a various number of publications on the adoption of ISO 14001 standard by enterprises were reviewed. The auditors of EMS and the senior managers of five ISO 14001 certified companies were interviewed and requested to provide information and verification in formulating the questionnaire. Then a structured questionnaire was sent to the senior managers of forty two (42) enterprises listed in the directory (up to 2009) of ISO 14001

Certified enterprises of Sri Lanka Standard Institution (SLSI). SLSI is the National Standard Body of Sri Lanka, and a member of the International Organizations for standardization (ISO) which is based in Geneva.

Twenty completed questionnaires have been received within a period of one month and with a response rate of 47%. Table 1 shows the number of respondents from different sectors with highest response rate occupied by chemicals and agro products (5) followed by food and beverages (3) and rubber and plastic products (3).

Table 1: Categories of respondents based on different sectors

Sector	No: of respondents	Percentage%
Chemicals and agro products	5	25
Food and Beverages	3	15
Rubber and plastic products	3	15
Asbestos and cement based products	2	10
Electrical and optical equipments	1	5
Sale, maintenance and repair of motor	1	5
vehicles	1	5
Manufacture of paint and emulsions	1	5
Ceramic and floor tiles	1	5
Polyethylene foam products	1	5
Aurvedic and herbal products	1	5
Hotel operations		
Total	20	100

Source: Survey data

With respect to the time taken in obtaining ISO 14001 certificates, six companies (32%) proclaimed to be within one year, four companies (20%) between one to three years, and 10 companies (48%) over three years. Further 90% of the certified companies had involved in consulting from various certifying bodies and from the experts in applying for EMS certification. Which may be the fact that the ISO 14000 series was issued in 1996 and is still at the early development stage in developing countries like Sri Lanka, India, Pakistan, Bangladesh etc.

Analysis of Data and Results

The respondents were asked to provide their opinions on the importance of factors that influencing the implementation of EMS for their organizations by scores from 1 to 5. To determine the relative ranking of the factors, the scores were then transformed into relative importance index (RII). Table 2 lists the values of relative important indices and ranks of the influencing factors.

$$\text{Relative Importance Index} = \frac{\sum W}{AN}$$

W= The weighting given to each factor by the respondents (1 to 5), where "I" represent the least important and "5" represent the most important.

A= The highest weight (5 in the study)

N= The total number of sample

Table 2: Ranking of the influencing factors based on RII

Ranking	Factors	RII
1	Environmental consciousness of top leader	.889
2.	Commitment of management	0.852
3	Legal enforcement	0.754
4.	Professional expertise	0.747
5.	Encouragement mechanism for cleaner	0.737
6.	Production	0.726
7.	Measures of environmental protection on	0.720
8.	Production	0.715
9.	Definite responsibility on EM	0.713
10.	Training on EM	0.710
11.	Utilization of environment friendly equipment	0.703
12.	Corrective information	0.679
13.	Systematic operation regulations	0.668
14.	Safety operation	0.652
15.	Re-utilization of resources	0.637
	Encouragement mechanism for reducing wastage	
	Minimizing environmental nuisance material	

In table 2, the respondents ranked "environmental Consciousness of the top leader" and the "commitment of management" first and second, with a relative importance index of 0.889 and 0.852. The role of the top management in environmental management was highlighted by many researchers (Gupta 1995; Quazi et al. 2001). According to Gupta (1995),92% of 400 CEOs and top management surveyed agreed that the environment challenge was one of the central issues of the 21st century. Hunt and Auster (1990) Identified top management leadership as one of the seven critical elements that was required to create an effective environmental management. Without strong top management support, the implementation of EMS would not be successful (Berry and Rondinelli). The respondents graded "legal enforcement" as third with a relative importance index of 0.754. The legal enforcement and legal system are prerequisites for effective environmental protection.

Professional expertise was graded the fourth, with a relative importance index of 0.747. The professional expertise played a vital role in ISO 14001 implementation. In Sri Lanka many enterprises are lack of professionals who are familiar to environmental management. Moreover ISO standard is new to most enterprises of the country. That could be witnessed from the fact that 90% of the certified companies had involved consulting agencies in applying for EMS certification. The respondents ranked "encouragement mechanism for cleaner production" as fifth with a relative importance index of 0.737 and "measures of environmental protection on production" as sixth (RII=0.726).Definite responsibility on EM was ranked seventh, with a relative importance index of 0.720. That is due to the fact that ISO 14001 stipulates the responsibility of environmental management in procedures. Because the precise cause of environmental accidents is often difficult to determine, many people have a "pass the buck" mentality in many companies.

The respondents ranked "training on environmental management" the eight with index importance of 0.715 and "utilization of environment friendly equipment" was ninth (0.713). The "corrective information" occupied the tenth place (0.710) and the "systematic operation regulations" ranked eleventh as with the relative importance index 0. 703. "Safety operations" was graded the twelfth, with a relative importance index 0.679 and "re-utilization of resources" was graded thirteenth, with a relative importance index 0.668. "Encouragement mechanism for reducing wastage" was fourteenth in the ranking with a relative importance index of 0.652. In this study 55% of the respondents indicated that they hope to save resources and reduce waste. The respondents ranked "minimizing environmental nuisance materials" fifteenth with a relative importance index of 0.637.

In this survey, the current status of Sri Lankan legal system and legal enforcement on environment protection were also exploded (see Table 3). Within Sri Lanka's legal system, there are over hundred laws each which deals with some aspect or other on the environment. These have been enacted from colonial times. The objectives with which these laws were enacted do not cover in many cases the environmental imperatives necessary to meet adequately the environmental challenges of the present day.

Table 3 : Respondents opinion on Sri Lankan Legal System on Environment

Item	Opinion of Respondents	No: of Enterprises	Percentage%
Act and Regulations	Systematic	2	12
	Average	4	20
	Not systematic	14	68
	Total	20	100
Legal Enforcement	Stringent	3	16
	Average	5	26
	Not stringent	12	58
	Total	20	100

Source: Survey data

In table:3, 68% of the respondents (14) stated that Sri Lanka has no systematic legal framework for regulating the environmental protection. In recent years the Sri Lankan government has made some important changes and additions were made to our legal framework for the environment during the 1980s. By far the most important addition was the enactment of the National Environmental Act (NEA) (Act no: 47 of 1980 and amended in 1988 and 2000) and the establishment of the Central Environmental Authority (CEA). The Costal Conversation Act (Act No: 57 of 1981) is another important new law which established the coastal conversation Department. The forest ordinance and the Fauna and Flora Protection Ordinance are much older laws of importance. The State Lands Ordinance and the Land Settlement Ordinance govern the complex questions of State Lands and distribution of these lands to shelters.

However, most of these regulations do not contain explicit clauses defining the action and standards of performance. Only applying these explicit standards to communities with the consideration of the local context and characteristics can EM be effectively promoted. Moreover the system of environmental legal regulation remains with serious flaws. It is still essentially administrative rather than legal in nature, with courts and lawyers playing only a minor role; there is a real need to established clearer parameters of liability; and the system places too much emphasis on punishment as opposed to material incentives in order to secure compliance

Moreover 84% of the respondents (17) opined that the legal enforcement in Sri Lanka average and not stringent. Only 16% of the respondent (3) indicated that legal enforcement was stringent. The administration still has very considerable powers, and can use its direction to influence local environmental protection to suit itself. But environmental law is an area in which problems of distorted decision making stemming from corruption, selective information of rules, the difficulties of controlling local political leaders, the low status of those involved in administration the system and so on appear to be particularly serious (Edmonds, 1998). Therefore strong strict legal enforcements need to await improvement of the Sri Lankan legal system.

Discussion

The business enterprises must take responsibility for all of its activities, including those that affect the environment regardless of where the company is, what it does and how small it is. Today most of the Sri Lankan enterprises are facing the challenge of competitive market. But many of them are struggling with survival strategies. Thus making issues of competitiveness and marketing top priorities while environmental issues are left far behind. Often most managers feel that they are powerless next to large and multinational organizations. Either they feel that environmental issues are global in nature, and therefore outside the ability of them or that do not have the resources within their grasp to make the necessary change. In order to minimize those issues, an EMS can be considered as a pivotal tool that can be introduced for implementation. As a result, the application of an EMS will enhance the performance of not only environmental but also operational and social sectors of the organization as whole. In this way, the importance of environmental performance to a firm can be better realized.
In addition to that the government should play an important role in promoting environmental management. In some developed countries besides the mandatory policy, there are encouraging policy and supporting policy for environment management and cleaner production. Encouraging policy includes tax and subsidies and the supporting policy involves workmanship, project model, product model, training and research and development plan. Although it is difficult for a developing country like Sri Lanka to fully implement the above measures the government should focus on aspects it can implement.

It is necessary to establish a proper legal framework for promoting environmental protection and ISO 14001 standard. Presently the major problem is the lack of local regulations consistent with the national standards. In addition, because the involvement of the general public is very important in promoting environmental protection and it is necessary to establish channels for the public to address their complaints. As an encouraging policy the government can provide soft loan or short – term subsidies although it might not support tax exemption for the certified enterprises. Under the supporting policy the government should organized training courses and seminars on the subject of environmental management for the management of enterprises as their environmental awareness is pivotal in adopting EMS. The owners of enterprises they are concerned that ISO 14001 cannot bring them instant or short- term benefits, leading them to adopt a wait- and- see attitude (Alberti et,al 2000). The training should be included sharing of experience by those ISO 14001 certified companies. From their experience, participant could learn more about the implementation process and benefits.

Conclusions and Recommendations

An EMS is a continual cycle of planning, implementing, reviewing, and improving the processes and actions that an organization undertakes to make its business and environmental goals .Thus, EMS application is subjective to organizations, which allow organizations to systematically manage their environmental, health and safety matters. EMS can result in both business and environmental benefits. Hence, EMS can be used as a framework for help enterprises to improve their environmental performance and make greater use of pollution prevention approaches, which will lead to cost reduction due to enhanced resource efficiency in production. There are various factors influencing the implementation of EMS for enterprises. Using a structured questionnaire this study tried to identify the critical factors affecting the implementation of ISO 14001 standard. Out of fifteen, the five top critical factors are; environment consciousness of top leader, commitment of management, legal enforcement, professional expertise and encouragement mechanism for cleaner production. The government should play an important role in promoting environmental management. As Mandatory policy the government should establish a proper legal framework for promoting environment protection and ISO 14001 standards. To encourage the enterprise for implementation of EMS the government can provide soft loans or short – term subsidies. Under the supporting policy the government should organize training course and seminars on environmental management for the management of enterprise as their environmental awareness is pivotal in adopting EMS.

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