

CHAPTER 2

LITERATURE REVIEW

2.1 Small Business and Environment Impact

Small and medium-sized enterprises (SME's) play a key role in the economies of most countries around the world, making important contributions to economic growth and employing significant numbers of people. Collectively, SME's also cause significant impacts on the environment by their activities, products and services. In recent years there has been a noticeable growth in the adoption of the notion of environmental responsibility within the global business community. The concept of environmental management has been gaining wider acceptance. Generally, environmental management programmes worldwide have seen significant reductions in environmental impact such as air emissions, water discharges and solid waste and at same time increase the business profits.

Whilst the individual impact of SMEs is small, their collective impact is substantial. SMEs typically represent about 95 % of all private sector firms in most modern nations, and so form a major portion of all economic activity. Of the estimated 73 million legally incorporated employer businesses worldwide, at least 65 million are SMEs. They are also a means of innovation and change within the business sector, and form an important support to the large firms which they co-exist alongside with. The impact of SMEs on the natural environment, and the ways in which they can contribute to sustainable development in the future need to be examined in more detail (Spence, Rutherford, Blackburn 1998).

Small business' engagement in environmental management practices is vital as it is currently estimated that small businesses are contributing up to 70% of global pollution (Hillary, 2000), but small businesses are a disparate group and they do not think as a collective and they often work in isolation. This isolation makes it easier for them to ignore the individual impact they may be making on the environment, yet it is estimated that they are collectively contributing a considerable ecological footprint (Hillary, 2000).

In 2007, about 99% of business establishments in Malaysia consisted of SMEs, which contributed 32% to the gross domestic product (GDP), provided 56% employment and accounted for 19% of total exports. Banking and development financial institutions approved RM63.2bil in funding for over 132,000 SME accounts in 2007, exceeding the target of RM51bil to 110,000 accounts projected in 2006 (National SME Development Council, 2008).

The government expects to see small and medium enterprises (SMEs) making an increased contribution of 37% to the national gross domestic product (GDP) by the year 2010 from 32% in 2005. SMEs are also expected to increase the country's total export value of 19% in 2005 to 22% by 2010 and the employment over 6.2 million workers by 2010 as stated in the SME Annual Report 2006, released by Bank Negara's National SME Development Council. To date, it has allocated RM3.7 billion to implement 189 programmes for the SME sector (National SME Development Council, 2007).

On the surface level, environmental responsibility within a firm can take one or more of a variety of different actions, including steps to reduce, recycle and reuse raw materials and waste materials; minimizing the impact of transportation, energy and water usage by a firm;

donating or contributing to environmental groups; the adoption of a formal environmental policy (such as the International Organization for Standardization (ISO) 14000 standard); and / or reductions in pollution by the organization.

The advantages of SMEs are they need not consider inter-plant aspect as multinational companies, the size and complexity of decision making structure can be reduced. Moreover, some possible organizational problems that are typical in large-sized company can be managed relatively easy. Some mistakes on implementing strategies are caused by unqualified application of existing methodologies. They should make their own suitable strategies based on understanding the relation of economical, technical, and environmental aspects, including interactive cooperation and alliances.

2.2 Environmental Management Benefits

Extensive benefits accrue to SMEs adopting formal environmental management and this is widely reported in the analyzed studies. These benefits may also arise in small firms that implement non-formal EMSs. Smith and Kemp (1998), found that reducing environmental costs increases profitability and hence competitiveness. They report that 45% of SMEs believed that having an environmental policy brings commercial benefits (diverse set of benefits). Cost savings were perceived as the main commercial advantage and better customer relations were also often mentioned (26% of respondents). In fact, 12% of respondents claimed that improved environmental performance resulted in financial savings, and more SMEs believed this if they had implemented ISO 14001 or Eco-Management and Audit Scheme (EMAS). Another 26% were unclear whether their company made savings but not dismissive about the possibility.

The pan-EU (whole European Union) survey of EMAS sites identified cost savings as the top benefit cited by large, medium-sized and small companies from the implementation of EMAS (Hillary, 1998). However, SMEs place cost savings as the second ranked benefit behind better image. Compliance with existing legislation is a key motivating factor behind SMEs environmental consciousness (Hillary, 2004).

According to Stone (2000), most members of 22 organizations of New Zealand implementing environmental management policies and practices agreed that improving environmental performance makes good business sense. Also, employees of organizations adopting such initiatives developed a stronger belief that good environmental practices make good business sense. This supports the assumption that environmental practices can be a beneficial business proposition.

SMEs found numerous financial, competitive and business rewards from adopting formal EMSs. For many, ISO 14001 and EMAS are living up to the claims of those that promote the initiatives. Key benefits for SMEs are the attraction of new business and customers and the satisfaction of customer requirements (Hillary, 1995). These benefits are closely linked to customers in their role as the paramount driver for the adoption of EMSs in the SME sector. Naffziger et al. (2003), found that attention to environmental issues can have positive impacts on the company with particular improvements to company image. Also, companies with high top-management concern perceive that environmental strategies have a positive impact on profit, operations efficiency, and company image. Simpson et al. (2004), reports that 77% of the SMEs surveyed thought environmental issues were business issues and 63% directed resources to planning and tackling environmental issues. Also,

most companies surveyed agreed that environmental good practices did result in better products.

Communication channels, skills, knowledge and attitude are all improved in SMEs adopting EMSs. EMS implementation opens up new interactions between staff and management and provides intangible benefits like enhanced morale, which is seen as very important for both small firms and medium-sized ones (Hillary, 1998).

The most frequently cited improvements were those related to reduced energy consumption and waste minimization. Coupled with these benefits, SMEs found image was enhanced and dialogue and relationships with stakeholders improved (Hillary, 1995). Indeed, improved image was the most important benefits for SMEs implementing EMAS cited in the pan-EU EMAS survey and this became more important as the size of the firm decreased; i.e., 38% of medium-sized companies and 54% of small companies cited it as the first benefit from the adoption of EMAS (Hillary, 1998).

2.3 Environmental Management Issues and Barriers

Some studies are uncritical of the practical experience of SMEs with environmental managements and do not addresses disbenefit and this may be why they are underrepresented, though there may genuinely not be that many.

Evidently, large corporations can devote more management time and resources to environmental improvements. They may also be more motivated to improve their environmental performance because the pressures on larger firms are generally more acute,

whereas the environmental impact of small firms is often conceived as negligible by managers and customers alike. SMEs are often slow to respond to the challenge of improving their environmental performance (Rowe and Hollingsworth, 1996). Lack of human resources and the multifunctional nature of staff becomes of ever increasing importance as the size of the company decreases not only to the implementation but also to the maintenance of EMSs. They are also aggrieved by the cost and quality of consultants advising them (Hillary, 1997a).

Issues surrounding financial resources include lack of funding for environmental projects or return on investment periods that are too long (Vernon, 2003). Consequently, SMEs tend to regard the environment as peripheral to their business practices (Rutherford et al., 2000) and environmental protection as an unnecessary cost burden (Simpson et al., 2004). SME managers who are aware of environmental management principles are often convinced that it is costly and cannot offer them any benefits (Simpson et al., 2004). A major source of irritation for SMEs, surfacing in a number of studies, is the cost of certification or validation (Hillary, 1998).

As such ISO 14001 and EMAS hold relatively little interest for the sector. Furthermore, EMAS has its public reporting component that frightens SMEs and ISO 14001 has an added disadvantage amongst small companies who have had negative experiences with one of the ISO 9000 standards (Hillary, 1997a).

For economical viewpoint, the lack of financial resource is representative and it is resulted as the constraints on technical investment. At the same time, since the resources of SMEs

are usually more limited than those of their larger counterparts, they are strongly dependent on investors. Practical difficulties, such as how to achieve internal auditor independence and how to determine environmental aspects and assign significance, also scupper implementation (Hillary, 1997a). In the pan-EU EMAS survey, the environmental review and the EMS elements took SMEs the most time to implement, were cited as the most difficult to understand and the elements which required additional guidelines (Hillary, 1998).

According to Hart (1995), the integration of environmental management in firms' strategy will be the main challenge over the next 30 years. The author develops his argumentation around a wider vision of natural environment, integrated into a process of sustainable development. He defends the idea that the source of sustainable competitive advantage is situated at three levels:

- Prevention of pollution (also a mean for costs' reduction);
- Responsibility in terms of product all along its life-cycle (cf. the idea of eco-conception);
- Integration of the three elements of sustainable development (Planet, People, Profit).

Most of the tools and techniques for improving environmental performance have been developed by and for larger firms and fail to take the unique characteristics of small businesses into account (Tilley, 1999). This may help to explain the low uptake of Environmental Management Systems (EMS) in small companies. Most SMEs do not see any relevance for such systems in their business. Consequently, the lack of sector specific guidance and materials tailored to different sizes of firms has emerged as a major barrier to

adoption of EMS in small companies (Hillary, 2004). In addition, a number of studies have found low awareness of available programs and initiatives providing assistance to SMEs regarding their environmental performance and opportunities (Tilley, 1999). This suggests that the communication mediums used to reach SMEs are not being sufficiently successful.

SMEs differ from larger enterprises in a number of ways including: generation of less environmental data; fewer resources (less environmental expertise / experience, technical, financial, time), environmental performance is driven by the personal views of the business owners; no common access points; differences in organizational structure (Environment Canada, 2003).

The report written by the Observatory of European SMEs published in 2002 presents an analysis of the barriers to a wider development of environmental initiatives among SMEs. These obstacles can be external as well as internal to the organization, this last category being apparently more crucial to explain chilly behaviors, according to a British study cited by the report (Observatory of European SMEs, 2002). External obstacles can be classified into three categories:

- The ambivalence of customers to SMEs' environmental performance could act as a negative stimulus for SMEs insofar as these organizations are less influenced by customer and employee pressures than large companies.
- The existing environmental management tools are specifically designed for and by large companies. In that sense, their direct transfer into the context of small companies can be inappropriate.

- The environmental pressure from public authorities is less for SMEs than it is for larger enterprises. Large firms are also more visible and are thus more susceptible to institutional pressure (Bowen, 2002).

Negative corporate attitudes towards EMSs and an unfavorable company culture, often cited in SMEs, conspire to create a climate that deprives the EMS implementation process of support (Hillary 1997a). Inconsistent top management supports is frequently cited as a factor in the stop / start approach SMEs and small firms in particular, take to the implementation of an EMS (Hillary, 1997a). In addition, the changing economic fortunes faced by SMEs alter their priorities and pushes the environment to the bottom of the list, further depressing interest in ISO 14001 and EMAS (Hillary 1997a).

2.4 Environmental Management Related Standard Framework

As environmental managements have grown in importance, so has the variety of environmental management's approaches. There are a few existing standards that directly or indirectly, extend it in various ways to promote environmental management as follows:

- **ISO 14001** was released in 2004 by ISO which has representation from committees all over the world is a standard for EMS.
- **ISO 14000** was established in Geneva, Switzerland in 1946 to promote international trade by harmonizing standards.
- **ISO 9000** was published to promote consistent quality practices and facilitate international trade.
- **Sustainable Development**, the term was introduced in 1987 by the World Commission on Environment and Development.

- **British Standard (BS) 7750** published in 1992 by The British Standards Institute was the first national standard for EMS.
- **Eco-Management and Audit Scheme (EMAS)** was established by European Regulation 1836/93, adopted on 29 June 1993, is a voluntary initiative designed to improve companies' environmental performance.
- **Environmental Stewardship Codes;** any private sector programs that have been established to encourage environmental stewardship.

2.5 Environmental Management Related Concepts

Environmental management is the management of a company's activities that have an impact on the environment. Their objectives are to limit emissions of pollutants, conserve natural resources, minimize environmental hazards and create a safe workplace.

2.5.1 Environmental Management System (EMS)

The International Organization for Standardization (ISO) defines Environmental Management System (EMS) as "that part of the overall practices, procedures, processes and resources for developing, implementing, achieving, reviewing and maintaining the environmental policy." The (EMS) is a set of processes and practices that enable an organization to reduce its environmental impacts and increase its operating efficiency by ensures operator training and proper procedures are in place. EMS is a continual cycle of planning, implementing, reviewing and improving the actions and built on the "PDCA (Plan, Do, Check, Act)" model. This model leads to continual improvement that an organization undertakes to meet its business and environmental goals.

2.5.2 British Standard (BS) 7750

BS 7750 based on Quality Network website is a specification for an environmental management system. The system is used to describe the company's environmental management system, evaluate its performance and to define policy, practices, objectives and targets; and provides a catalyst for continuous improvement. The concept is similar to the use of ISO 9000 for quality systems, with the methods to be used open to definition by the company. The standard provides the framework for development and assessment of the resultant environmental management system. The standard was first published in June 1992, and was subsequently reviewed and revised to a new January 1994 issue.

2.5.3 International Organization for Standardization (ISO)

ISO has developed recommendations to make it easier for SMEs to benefit from implementing an EMS based on ISO 14001:2004. The ISO 14000 family addresses various aspects of environmental management. According to International Organization for Standardization, the very first two standards:

- ISO 14004:2004 provides guidelines on the elements of an environmental management system and its implementation, and discusses principal issues involved.
- ISO 14001:2004 specifies the requirements for such an environmental management system. Fulfilling these requirements demands objective evidence which can be audited to demonstrate that the environmental management system is operating effectively in conformity to the standard.

An EMS meeting the requirements of ISO 14001:2004 (Malaysian Standard, 2004) is a management tool enabling an organization of any size or type to:

- Identify and control the environmental impact of its activities, products or services, and to
- Improve its environmental performance continually, and to
- Implement a systematic approach to setting environmental objectives and targets, to achieving these and to demonstrating that they have been achieved.

According to International Organization for Standardization, ISO 14001:2004 does not lay down levels of environmental performance, the standard can to be implemented by a wide variety of organizations, whatever their current level of environmental maturity. However, a commitment to compliance with applicable environmental legislation and regulations is required, along with a commitment to continual improvement for which the EMS provides the framework.

2.5.4 Eco-Management and Audit Scheme (EMAS)

EMAS is the Eco-Management and Audit Scheme, is a voluntary initiative designed to improve organizations' environmental performance. It was initially established by European Regulation 1836/93, although this has been replaced by Council Regulation 761/01. According to European Commission, EMAS is aim to recognize and reward those organizations that go beyond minimum legal compliance and continuously improve their environmental performance. In addition, it is a requirement of the scheme that participating organizations regularly produce a public environmental statement that reports on their environmental performance. It is this voluntary publication of environmental information,

whose accuracy and reliability has been independently checked by an environmental verifier that gives EMAS and those organizations that participate enhanced credibility and recognition.

2.5.5 Sustainable Development

According to Sustainable Development Commission website, sustainable development is a development which meets the needs of the present without compromising the ability of future generations to meet their own needs. The concept of sustainable development has received most attention since the United Nations Conference on Environment and Development held in Rio de Janeiro in 1992 when the summit marked the first international attempt to draw up action plans and strategies for moving towards a more sustainable pattern of development.

2.5.6 Life Cycle Analysis (LCA)

According to United States Environmental Protection Agency (US EPA), Life Cycle Analysis (LCA) is a technique to assess the environmental aspects and potential impacts associated with a product, process, or service from cradle to grave by:

- Compiling an inventory of relevant energy and material inputs and environmental releases;
- Evaluating the potential environmental impacts associated with identified inputs and releases;
- Interpreting the results to help you make a more informed decision.

Ideally, a complete LCA would include three separate but interrelated components that are an inventory analysis, an impact analysis, and an improvement analysis.

2.6 Summary

From the literature review conducted, it can be summarized that Environmental Management concepts can be applied to any SMEs. The case studies at Avon by Rowe, J. and Hollingsworth, D. (1996) and 22 organizations in New Zealand by Stone (2000) found that good environmental practices make good business sense. Clearly there are more advantages in environmental management implementation. Therefore, by obtaining small business owner-managers' perspective on the environmental management needs in their small business, this study will help to enhance the understanding on factors related to the design and delivery of environmental managements for the SMEs.