The challenge of environmental responsibility and sustainable development: Implications for SME and entrepreneurship academics

Michael Schaper

The move towards a "greener" or more environmentally-responsible framework of business operations has begun to be mirrored in the research and teaching work of many academics. However, it is suggested that the fields of entrepreneurship and SME studies have lagged somewhat behind other disciplines when it comes to including sustainable development concepts in their contemporary research agenda.

A review of the recent research shows that, compared to larger firms, most SMEs tend to be somewhat reactive to environmental issues, and limited to small-scale, ad-hoc changes in business activities. Clearly there is room for substantial improvement in the environmental performance of small firms.

It is suggested that there are four major areas in which a new agenda of sustainable development can be adopted within the fields of entrepreneurship and SME studies:

- Evaluating and measuring the environmental impact of small firms
- Understanding the role of green entrepreneurs ("ecopreneurs") and the factors which promote or hinder their development
- The inclusion of environmental and sustainable development issues within the educational curriculum
- Developing a better understanding of how business advisory services and government policy can help or hinder the creation of "greener" businesses.

Background

In recent years there has been a noticeable growth in the adoption of the notion of environmental responsibility within the global business community. Although it would be inaccurate to claim that the private sector has totally embraced the need to become "greener", it is fair to state that the topic is now much more prominent in business decision-making, strategic planning and performance management than ever before.

An environmentally responsible firm can be defined as one which seeks to limit or prevent damage to, or to consciously improve, the existing natural environment. Murphy et al. (1995, p.5) claims that the concept can be defined as "the practice of responding to environmental issues in a socially responsible manner," whilst Longenecker, Moore and Petty (1997, p.558) argue that it is "the effort to protect and preserve the environment".

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; minimising 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 ISO 14000 standard); and/or reductions in pollution by the organisation.

Environmental responsibility forms one part of the broader concept of sustainable development. Sustainability refers to the notion of ensuring that economic growth and environmental protection work together in a long-term "win-win" situation, rather than operating in competition with each other. One of the most common definitions of sustainability is that put forward by the United Nations World Commission on Envi-

ronment and Development (Brundtland Commission 1987). The Commission has described the idea of sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs". The central theme in such a definition is the interdependence between economic growth and environmental quality, and the need to ensure that both issues are protected. Typically, sustainable development requires the balancing of three different but interrelated variables: *economic and commercial imperatives* to produce and maintain an economic system that delivers wealth and efficiently meets consumer needs; *environmental considerations*, so as to ensure that the current state of the earth's biosphere is at least maintained and, wherever possible, enhanced; and *social justice factors,* or the protection of individual and community needs, on the assumption that the other two issues cannot be advanced if there is no motivation or incentive within the broader community to do so.

The evolution of these issues over the last forty years can be traced through a number of pronounced stages (Krupp 1992). The 1960s first saw the emergence of environmental concern as a major community issue, especially in the wealthy developed nations of Western Europe, North America and Australasia. Governments began to respond to these concerns in the 1970s with an array of policy initiatives. These included the introduction of tighter, more prescriptive laws to protect the environment and limit the actions of business, the creation of specialised administrative bodies to deal with environmental concerns, and the appointment of environment ministries and departments at the state and national level. Initially, the business sector responded by largely opposing such developments. However, in the 1980s and 1990s an increasing number of senior managers and entrepreneurs began to accept the need to adopt a sustainable framework for business practices. Whilst most simply began to accept the legitimacy of environmental issues as a stakeholder influence, others began to propound the philosophy of market-based environmentalism. This perspective argued that being "green" could in fact be a source of innovation, competitive advantage, and new business generation, and claimed that the most effective way of protecting the environment was to provide an economic incentive for doing so (Kinlaw 1993).

As a result of these activities, today there is a well-established and rapidly growing body of research into the "greening" of business. This includes regular conferences (such as the annual Greening of Business network conference), dedicated journals (such as *Greener Management International*, *Corporate Environmental Strategy*, *Eco-Management and Auditing*, and the *Journal of Cleaner Production*), academic associations (such as the Asia-Pacific Centre for Environmental Accountability), and industry groups (such as the World Business Council for Sustainable Development). Some of the academic business disciplines which have especially focused on this phenomenon include those of organisational change and development, tourism studies, economics and accounting.

To date, however, most of the work dealing with these issues has been focused on large corporations, not on the small- and medium-sized industry sector. Whilst there is a small but growing number of researchers working in the SME-environment field (a

good overview of which is provided by Hillary 2000 and Wolters 2000), the importance of small firms is usually overlooked.

This is due to a number of reasons. Perhaps the first is that the impact of larger firms on the environment tends to be more noticeable. As a result, it is easier to see, measure, understand and evaluate the impact of such large firms. In addition, larger firms tend to have more experience in dealing with multiple stakeholder pressures, and have become adept at handling the need for a "greener" business perspective. A second reason is the nature and structure of the SME sector. Most small firms are, by definition, relatively miniscule, as is their environmental impact. Their individual levels of waste and energy usage, for example, are extremely small. Moreover, many firms (especially in the wealthy developed economies) tend to be located within the services sector, and so have no obvious "dirty" industrial practices. Hence, they appear to have little, or no, environmental impact.

This assumption is not accurate. 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. 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, *do* need to be examined in more detail (Spence, Rutherfoord, Blackburn 1998). Although usually not given a great deal of attention, the role of small firms and the entrepreneurs who operate them is a key part of the sustainability debate.

Common issues in SME responses

In recent years, studies in a variety of countries, including Australia, Europe, the United Kingdom and the USA, have identified several trends that seem common to most SMEs (Hutchinson, Chaston 1994, Barnes 1994, Merritt 1998, Tanner et al. 1996, Gerrans, Hutchinson 1998, Tilley 1998, Petts et al. 1999, Hillary 1997). In general, most small business owner/managers believe that the environment is an important issue, and support protection of the environment *per se*. Response in favour of these propositions is overwhelmingly clear, and usually in the vicinity of 80–90%. However, awareness of formal environmental management systems, specific environmental laws and/or remediation processes is generally very poor and quite limited. SMEs are generally much less likely to embark on environmental improvement programmes than large firms, to have adopted a written environmental policy, to utilise a formal environmental management standard, or to have undertaken an environmental audit.

Author	*Year*	*Country*	*Respon-dents*	*Industry*	*Research Focus*
Ludevid Anglada	2000	Spain	20	Mixed	Knowledge, views and barriers regarding environmental pollution problems
Acutt and Geno	2000	Australia	137	Restuarants, cabinet makers, car repairs, hotels	Owner attitudes and compliance with state-based environmental regulations
Tilley	1998	UK	60	Engineering, services	Management attitudes and practices
Merritt	1998	UK	117	Mixed	Management views and practices
Petts et al.	1998	UK	389	Mixed	Management and employee attitudes towards compliance with environmental laws/policies
Townsend	1998	Australia	30	Manufacturing	Internal and external factors influencing adoption of more environmentally-responsible processes
Hillary	1997	UK	17	Textiles, mixed	ISO 14001, EMS
Gerrans and Hutchinson	1997	Australia	169	Mixed	Current EMS and other practices
Tanner et al.	1996	USA	105	Mixed	Waste reduction activities and barriers
Murphy et al.	1995	USA	133	Manufacturing, merchandising	Adoption of formal environmental policies
Hutchison and Chaston	1994	UK	600	Mixed	Current awareness and environmental practices

Table 1: Some recent studies into SMEs and the environment

Moreover, there is a significant discrepancy between personal viewpoints and business activity (Tilley 1998). The generally positive attitudes of entrepreneurs towards the environment do not appear to be reflected in their actual business practices. Merritt has called this paradox "…the so-called SME problem in environmental management" (1998, p. 91).

Finally, where environmental programs are undertaken, they tend to be largely reactive in nature, one-off, and focus on emission reduction ("end-of-pipe treatments") rather than on pro-active pollution prevention measures. Most small firms appear unwilling to embark on substantial changes in materials, production processes or operations management, and prefer to focus on ad-hoc solutions, such as a greater use of materials recycling (Hillary 2000).

Implications: A new research agenda?

Given the relatively poor environmental performance of SMEs, and the low visibility of sustainability issues in most SME and entrepreneurship research, it is clear that many more opportunities exist for future research and teaching within academia (Spence, Rutherfoord, Blackburn 1998). Some of these include:

The relationship between the environment and SMEs

A critical first issue is to evaluate the current impact of SMEs on the natural environment. What is the total cumulative impact of small firm waste output and resource usage? There have been some early attempts to quantify these impacts, but the most commonly touted figure – which claims that SMEs may collectively be responsible for as much as 70% of all global pollution (Hillary 2000) – have not been supported by any substantial quantifiable studies. What are the best means of measuring such impacts? What tools can be effectively used in such measurement? To date, most such studies in this field have been focused upon medium-sized firms in traditional manufacturing and other "dirty" industries, where environmental impacts are relatively easy to measure. A potentially valuable future line of inquiry would be to also examine the impact and role of micro businesses, given the relatively invisibility of such firms as mentioned before.

A second issue is understanding the attitudes and views of SME owners/managers towards the environment. Why is there such a discrepancy between the generally green attitudes of business owners, and the poor levels displayed by there firms? This "SME gap" or so-called "SME problem" in environmental management (Merritt 1998) needs more examination and, if possible, explanation.

Finally, there is also a need to be able to categorise and understand the processes by which small firms become "greener". Is it possible to develop and empirically test models which show different categories or typologies of green responses amongst businesses? What are the drivers that cause firms to move from one level of "greenness" to another, and what barriers exist to such a progression? Such research will provide a better understanding of the different factors which affect SME environmental responses.

Fostering sustainable entrepreneurship

What role do entrepreneurial individuals have to play in the adoption of more sustainable business practices? Environmentally-responsible business processes often provide a range of new opportunities for entrepreneurs. It can allow some firms to gain a competitive advantage in the field of product and service innovation, in the development of new industries, in marketing the firm to customers, in winning the strategic support of government and stakeholder groups, and in gaining an advantage over existing "dirty" technologies. Like any area of potentially high reward, there are also many risks involved in such projects. Some important areas worthy of more examination in this field are:

- *The nature of ecopreneurship.* What is meant by the concept of an ecopreneur or "green entrepreneur" (Isaak 1998)? Do such entrepreneurs differ in any significant way from more conventional entrepreneurs? How can these differences be measured (i.e. on the basis of demographic features, industry concentration, or by other means)? How successful are green entrepreneurs compared to conventional ones? Is there a "typical" profile of a green entrepreneur? What are the difficulties in researching this concept? Is it also possible to define a concept of a greener "corporate

entrepreneur" or environmental intrapreneur who acts as an advocate of sustainable change within existing large firms? What is the best way to measure "success" in an eco-friendly entrepreneurial venture (money or environmental outcomes)?

- *Policies to foster ecopreneurship.* What factors serve as either a barrier or trigger to ecopreneurial activities? What are the forces that motivate eco-friendly entrepreneurs? What are the practical steps to foster eco-entrepreneurship in new and existing firms? What steps can be taken to promote a greener perspective in entrepreneurial business operators?
- *The link between innovation and sustainability.* Writers such as Porter and van der Linde (1995) have previously argued that the adoption of greener business practices is usually a major stimulus for innovation within a firm, giving rise to improvements in processes, production, materials usage and marketing. What is the relationship between innovation and sustainability, and what factors promote it?

Education programs

The role of universities, technical and further education colleges, professional institutes and other trainers may also be a critical future determinant in improving the environmental performance of small firms. The inclusion of environmental information within such courses can help develop a greater sense of environmental awareness amongst students, and so encourage them to apply this knowledge to improving processes within their own firm (Van Berkel 2000).

Within the training and technical education sector, the imprimatur of an external institution can also improve the legitimacy of sustainable development as an issue for SME owners. Moreover, such information is largely seen as without cost for the SME owner, since it is already included in the curriculum, rather than being made additional to it. In the tertiary sector, a number of recent studies have shown that business school students are indeed interested in environmental issues, and keen to find out more (World Resources Institute 1999, 2001; Schaper 2002). A number of universities have already begun to include sustainability issues in their courses, but these still tend to be in the minority, and only a few specifically look at the role of SMEs, entrepreneurship and sustainability[1]. Likewise, some texts in small business management already make mention of green issues (see, for example, Kuratko, Hodgetts 2001, Hatten 1997, Schaper, Volery 2001), but such coverage tends to be brief.

A substantial opportunity therefore exists for academics to develop new curricula in this area, to measure student concerns about the environment, and to assess what (if any) impact such courses ultimately have on the environmental performance of students once they graduate.

1 One is the Darden course on sustainable innovation and entrepreneurship; another is the inclusion of environmental business management in the Curtin Business School entrepreneurship degree major.

As well as examining the processes that occur directly within small firms, or which are undertaken by enterprising individuals, it is also important to examine the macro-climate in which such activities take place.

A key area is the role of government regulation and agencies in facilitating the creation of environmentally responsible firms. What types of regulation will best help small firms adopt more sustainable business practices, and how can these best be implemented? As Porter and van der Linde (1995) have argued, appropriately-framed legislation is often a significant spur to improved environmental performance and innovation. Indeed, many small firms report that this is the single most critical factor in their decision to adopt an environmental improvement program, and that they would usually not do so if such legal requirements were absent (Charlesworth 1998, Petts et al. 1999). However, it is worth noting that much of the environmental legislation passed by governments in recent years has generally been aimed at large corporations. Where such laws have exempted SMEs (usually in order to spare them additional costs), it has sometimes actually reduced the pressure on them to undertake improved environmental performance and adopt "best practice" environmental techniques (Cairncross 1992). Where such laws have applied to SMEs, it has often encouraged them to focus simply on emission (waste output) reduction, rather than pollution prevention, because this is the most likely source of any penalties, and is easier to quantify (Hillary 1997, Tanner et al. 1996).

A secondary issue is the role of small business advisers in promoting "greening". Both Tilley (1998) and Palmer (2000) have suggested that the most important consideration in improving the environmental performance of SMEs is environmental information. Such "eco-literacy" needs to be practical, easy to access, and in a form which can be applied quickly within the small firm. This, in turn, requires SME consultants and advisers who understand environmental issues and how to adopt "green" business practices within a new or small firm. However, to date many of these support agencies have ignored the environment, or only treated it as a peripheral issue. The opportunity currently exists for government and non-government agencies alike to boost environmental performance through the provision of practical, easy-to-understand knowledge for small businesses (Shearlock, Hooper and Millington 2000).

Researchers can assist in this process by evaluating what types of environmental improvement activities are most easily introduced into a small firm; through the development of appropriate training and professional development programs for SME advisers; and by assessing the impact of "green" business advice on actual business performance. Such programs are already being undertaken by some institutions, such as at Durham University (1997).

Conclusion

Whilst the adoption of "greener," more environmentally sustainable business practices can sometimes pose great challenges for individual entrepreneurs and small firms, it

also provides opportunities for the researchers and educators working in these research fields. As this paper has outlined, the emerging new paradigm of sustainable development offers many new questions which the academic community must address – both in order for themselves to remain relevant, and in order to help the businesses and, ultimately, the planet which we all have to share.

References

Acutt, B., Geno, B.: *Greening Small and Medium-Sized Enterprises in Queensland: Challenges for Management*. Paper presented to the Australia New Zealand Academy of Management annual conference, December 4–6, Sydney 2000.

Barnes, P.: A New Approach to Protecting the Environment: The European Union's Environmental Management and Audit Regulation, in: *Environmental Management and Health.* Vol. 5, 1994, No. 3. pp. 8–12.

Bergin, S., Breen, J.: Educating Entrepreneurs: Looking At Universities, in: *Australian CPA*. August 1999, pp. 44–461.

Brundtland, G. H.: *Our Common Future*. United Nations World Commission on Environment and Development (Brundtland Commission). Oxford 1987.

Cairncross, F.: *Costing the Earth: The Challenge for Governments, the Opportunities for Business.* Boston: Harvard Business School Press, 1992.

Charlesworth, K.: Business Needs Clear Policy on Green Issues, in: *Professional Manager*. July 1998, pp. 16–17.

Durham University Business School: *The Business Adviser and the Environment.* Durham University Business School, Durham 1997.

Gerrans, P.A., Hutchinson, W.E.: *EMS and SMEs: Current and Likely Impact of Environmental Management Systems (EMS) on Small to Medium Enterprises (SMEs).* Paper presented to the 43rd ICSB World Conference on Entrepreneurship, 8–10 June, Nanyang Technological University, Singapore 1998.

Hatten, T. S.: *Small Business: Entrepreneurship and Beyond.* Upper Saddle River: Prentice-Hall, 1997.

Hillary, R.: Environmental Management Standards: What Do SMEs Think?, in: Sheldon, C. (Ed.): *ISO 14001 and Beyond: Environmental Management Systems in the Real World.* London: Greenleaf 1997, pp. 333–358.

Hillary, R. (Eds.): *Small and Medium-Sized Enterprises and the Environment.* Sheffield: Greenleaf 2000.

Hutchinson, A., Chaston, I.: Environmental Management in Devon and Cornwall's Small and Medium Sized Enterprise Sector, in: *Business Strategy and the Environment.* Vol. 3 No. 1. 1994, pp. 15–22.

Isaak, R.: *Green Logic: Ecopreneurship, Theory and Ethics.* London: Greenleaf 1998.

Kinlaw, D. C.: *Competitive and Green*. San Diego: Pfeiffer and Co, 1993.

Kuratko, D. F., Hodgetts, R. M.: *Entrepreneurship: A Contemporary Approach*. (5th edn.) Fort Worth: Harcourt, 2001.

Krupp, F.: Business and the Third Wave: Saving the Environment, in: *Vital Speeches.* Vol. 58 No. 21. August 15, 1992, pp. 656–659.

Longenecker, J. G., Moore, C. W., Petty, J. W.: *Small Business Management: An Entrepreneurial Emphasis.* Cincinnati: South-Western College Publishing, 1997.

Ludevid Anglada, M.: Small and Medium-Sized Enterprises' Perceptions of the Environment: A Study from Spain, in: Hillary, R. (Ed.): *Small and Medium-Sized Enterprises and the Environment.* Sheffield: Greenleaf 2000, pp. 61–74.

Merritt, J. Q.: EM Into SME Won't Go? Attitudes, Awareness and Practices in the London Borough of Croydon, in: *Business Strategy and the Environment.* Vol. 7 No. 2. May 1998, pp. 90–100.

Murphy, P. R., Poist, R. F., Braunschweig, C. D.: Role and Relevance of Logistics to Corporate Environmentalism - An Empirical Assessment, in: *International Journal of Physical Distribution and Logistics Management.* Vol. 25 No. 2. 1995, pp. 5–19.

Palmer, J.: Helping SMEs Improve Environmental Management, in: Hillary, R. (Ed.): *Small and Medium-Sized Enterprises and the Environment.* Sheffield: Greenleaf 2000, pp. 325–342.

Petts, J., Herd, A., O'hEocha, M.: Environmental Responsiveness, Individuals and Organisational Learning: SME Experience, in: *Journal of Environmental Planning and Management.* Vol. 41, No. 6. November 1998, pp. 711–731.

Petts, J., Herd, A., Gerrard, S., Home, C.: The Climate and Culture of Environmental Compliance Within SMEs, in: *Business Strategy and the Environment.* Vol. 1 No. 8. 1999, pp. 14–30.

Porter, M. E., van der Linde, C.: Green and Competitive: Ending the Stalemate, in: *Harvard Business Review.* Vol. 73 No. 5. September–October 1995, pp. 120–134.

Schaper, M.: Environmental Concerns Amongst Tertiary Business School Students, in: *Australian Journal of Environmental Education* (in press), 2002.

Schaper, M., Volery, T.: *Entrepreneurship and Small Business: An Asia Pacific Guide* (2nd edition). Perth: Vineyard Press, 2001.

Shearlock, C., Hooper, P., Millington, S.: Environmental Improvement in Small and Medium-Sized Enterprises: A Role for the Business-Support Network, in: *Greener Management International.* No. 30. 2000, pp. 50–60.

Spence, L. J., Rutherfoord, R., Blackburn R.: Small Firms and Environmental Issues in the UK and the Netherlands: A Literature Review and Research Agenda, in: *SBRC Monograph.* No. 5–98, Kingston University, United Kingdom 1998.

Tanner, M. M., Twait, C. L., Rives, J. M., Bollman, M. L.: Barriers To Waste Reduction Efforts: Small Business Response, in: *Journal of Environmental Systems.* Vol. 24 No. 3. 1996, pp. 299–310.

Tilley, F. J.: *The Gap Between the Environmental Attitudes and the Environmental Behaviour of Small Firms: With an Investigation of Mechanical Engineering and Business Services in Leeds.* Doctor of Philosophy (Ph.D.) thesis: Leeds Metropolitan University, UK 1998.

Townsend, M.: *Making Things Greener: Motivations and Influences in the Greening of Manufacturing.* Aldershot: Ashgate Publishing, 1998.

Van Berkel, R.: Integrating the Environmental and Sustainable Development Agendas into Minerals Education, in: *Journal of Cleaner Production.* Vol. 8 No. 5. 2000, pp. 413–423.

Wolters, T. (Ed.): Small and Medium-Sized Enterprises and Environment-Oriented Networks and Alliances. Special edition of *Greener Management International.* No. 30, 2000.

World Resources Institute: *Beyond Grey Pinstripes.* [online] http://www.beyondgreypinstripes.org/report2001.html accessed 08 December 2001.

World Resources Institute: *Grey Pinstripes with Green Ties: MBA Programs Where the Environment Matters.* [online] http://www.wri.org/meb/grnties/mba-home.htm accessed 08 December 2001.