# “Policies for Sustainable Development: The Case of Governmental Agency”


| | |
|---|---|
| **AUTHORS** | John P. Ulhöi |



| | |
|---|---|
| **ARTICLE INFO** | John P. Ulhöi (2004). Policies for Sustainable Development: The Case of Governmental Agency. *Problems and Perspectives in Management*, *2*(2) |
| **RELEASED ON** | Thursday, 02 September 2004 |
| **JOURNAL** | "Problems and Perspectives in Management" |
| **FOUNDER** | LLC “Consulting Publishing Company “Business Perspectives” |

NUMBER OF REFERENCES **0**

NUMBER OF FIGURES **0**

NUMBER OF TABLES **0**



© The author(s) 2026. This publication is an open access article.

# Policies for Sustainable Development: The Case of Governmental Agency

John P. Ulhöi[1]

## Abstract

Until recently, most national policies, including enterprise policies addressing environmental issues, have focused on the possible negative effects of environmental policy on firm competitiveness. Thus the belief within the business community has been fuelled that environmental aspects of business behaviour can only be considered as a negative burden detrimental to competitiveness. In opposition to this, a new, green national enterprise strategy has been developed in Denmark. This strategy seems to challenge the traditional approach by focusing instead on the positive side of the environmental agenda, which assumingly rests on the belief that environmental issues need to be addressed as strategic assets for the firms. Put differently, instead of seeing the business community as obstructive enemies that have to be 'forced' to become greener, firms are seen to be cooperative partners who can and have already to some extent begun to take on a more pro-active stance towards environmental issues. This paper presents the results of empirical studies on industrial greening carried out by the author on behalf of the EU and various sponsors. The paper addresses how the present Danish government has adopted a proactive role in continuing efforts towards a more sustainable development. The paper is based on the author's own experiences from participation in an advisory board assisting the government in the preparation of a new and green business strategy. It attempts to clarify the vision and framework of these efforts and seeks to identify issues for further consideration.

**Key words:** environmental policies, sustainable development, governmental agency.

## 1. Introduction

The global environment is under increasing pressure. Soil erosion, desertification, acid rain, and the extinction of species and the greenhouse effect have all contributed to the present deterioration of environmental systems. Economic activity influences the environment in many ways – through the consumption of energy and natural resources, often non-renewable, and the generation of pollution, toxic wastes, etc. In order to avoid the deleterious effects of this, a wide assortment of measures has been adopted by various actors in both the public/political domain (e.g. environmental regulations and agreements) and in industry (e.g. industry's voluntary agreements to improve its environmental performance). To some extent, the growing importance of environmentalism in the developed economies has been the driving force of these developments.

Environmentalism has a long history, dating back to the latter part of the 19th century when Victorian aesthetes, idealists and philanthropists, in the wake of the reckless activities of industrial modernisation, began to ask questions about the long-term impact of such a transformation. The evolution of environmentalism has been categorised into various phases. Perhaps the first one was the Neo-Malthusian phase that included the first international meetings concerning environmental problems (McCormick, 1989). Others have categorised this phase as the 'protection-movement' (Milbrath, 1989). A more profound epistemological change in orientation sets in during the transition to what has also been called 'The New Environmentalism' which according to Pepper (1985) characterises today's enviromentalism. The latter, however, is far from being homogeneous. Instead, there are immanent internal tensions between so-called 'radicals' and 'moderates' which, among other things, have given way to labels such as 'deep greens' and 'light/grey-greens', respectively (Milbrath, 1989).

[1]Professor, PhD, Faculty of Business Administration, The Aarhus School of Business, Fuglesangs Allé 4, DK-8210 Aarhus V, Denmark. Telephone: +45 8948 6688. Fax: +45 8615 7629. E-mail: jpu@asb.dk.

It has been argued that environmentalism challenges almost all essential features of the development of Western economies and their underlying motifs, desires and performance of their institutions (O'Riordan, 1976) and that it can be understood as an attitude of mind and a certain code of behaviour as an ideology, a social movement as well as a political activity.

According to the latter, what environmentalism is about is the conviction that a better mode of existence is possible, and that a sense of collective happiness can infuse individual self-interest so that belief in the communal good will overcome a fear of personal sacrifice. Cotgrove (1982) has suggested maintenance of a distinction between traditional and radical environmentalism. The development of the latter, however, points to the necessity of implementing more fundamental social changes as it can be seen to be in strong opposition to the unrestricted activities of capitalism. Radical environmentalism argues for seeing environmental depletion in the light of political ideologies. The radical part of the environmental movement has persistently challenged established material goals as well as economic ones, and it has suggested assignment of a higher priority to the realisation of non-material values, to social relations and community and to interparticipative decision processes.

However, it was not until the second part of the 20th century that the basis of modern-day environmentalism was laid – or, more specifically, during the early 1960s and 1970s. The book "Silent Spring" (Carson, 1962), which paid attention to the implications of the increasing use of pesticides, and the publication "The Tragedy of the Commons" (Hardin, 1968), which exposed the human preference for maximisation of self-interest, were among the first publications to tap into the emerging environmental awareness. Two events from the early 1970s in particular – the Club of Rome's report "Limits to Growth" in 1972, and the UN Conference on the Human Environment in Stockholm in 1972 - deserve special mention, since they have become important milestones in the development of international environmental policy (regulation).

In the 1980s, the role of market forces in the development process and the role of poverty and overpopulation in the degradation of the natural resources were highlighted through the introduction of the concept of sustainable development in publications such as "Development Without Destruction" (Tolba, 1982), "The Global Possible" (Repetto, 1985), and, last but not least, the report of the World Commission on Environment and Development "Our Common Future" (1987).

Business policies are expected to facilitate and to support business competitiveness. Until recently, most national policies in OECD countries, including those addressing environmental issues, have focused on the possible negative effects of environmental policy on business competitiveness. This has reinforced the belief of the business community that focusing solely on the environmental aspects of business behaviour can only damage competitiveness. Taking a new tack, the Green National Enterprise Strategy (GNES) of Denmark challenges the traditional approach by focusing instead on the positive side of the environmental agenda, presumably in the belief that environmental issues need to be viewed as a strategic asset for a firm. Put another way, rather than seeing the business community as an adversary that has to be 'forced' to become greener, firms are seen as co-operative partners who can take (and to some extent already have taken) a more proactive view of environmental issues. The challenge for policy makers, in other words, is to exploit the new agenda of emerging environmental proactivity in business and the general rise of environmental and ethical awareness and transparency in the knowledge-based society.

As a part of these efforts, The Danish Ministry of Trade and Industry has been working on a green enterprise strategy in co-operation with the Danish Ministry of Environment and Energy. The GNES was launched in 2001 being the result of a working group consisting of people from business, interest organisations and business researchers (including the author).

Unlike previous business policies, which focused on the possible negative effects of environmental policy on business competitiveness, this new green enterprise strategy was based on the vision that the green issue can be turned into a competitive advantage. In general, business policy intendes to promote business competitiveness. The rather defensive approach of the 1970s gave way to the reactive strategies of the 1980s, which in turn led to the rise of proactive strategies in the 1990s and to the present days.

The strength of Danish green enterprise lies in the decades of environmental policy-making preceding it and which has started to move the business community closer to areas with a stronger business perspective. However, this is not to say that Denmark, or any other country, can act without environmental regulation at all. Environmentally hazardous activities will need to be governed and controlled for many years to come. The challenge throughout the development of this strategy has been to see whether it is possible or not to incorporate environmental issues into the market. How far, then, have we already come in this direction? What is the scope of and challenge to an alignment of corporate environmental conduct and competitiveness? And how can policy-making promote environmental proactivity in business?

Contemporary environmentalism differs from other social behaviour in that it contains strong normative and cognitive elements and is complicated by many differences in interest. Green competition is still in its infancy, and adequate institutional and organisational structures are lacking both within enterprises and in the market. In consequence, replacing standard technologies and business practices with environment-friendly ones is extremely expensive.

The development of a green business strategy revealed the need for more knowledge about the relationship between a firm's environmental behaviour and its competitiveness. The low priority given to environmental business research in both Denmark and internationally means that we have only very limited knowledge of drivers and barriers to the greening of business. This makes it very difficult to formulate policies. This paper includes a brief review of the current environmental situation in Danish industry. Section 2 briefly outlines the environmental situation among Danish manufacturers. Section 3 examines the key elements of the Danish green business strategy. Section 4 discusses some key problems and limitations of contemporary environmental instruments for use in environmental regulation. Finally, section 5 presents the main conclusions of the study, which suggest that the present Danish 'top-down' approach to safeguarding the environment is unlikely to deliver the responses needed to maintain full economic, environmental and social security.

## 2. The Greening of Danish Industry

The number of ISO 14001-certified companies has often been suggested as a more quantitative measure of the greening situation in Denmark prior to the green business strategy. This is however not as straightforward as it seems, because of the existence of several certifying bodies. To complicate matters further, any firm in one country can become certified by a certifying body in another country, i.e. outside the country where the firm is based.

To remedy this, several international organisations have published a so-called "ISO 14001 speedometer" on the Internet (e.g. INEM, 2000; Cutter, 1999 and ISO online, 2000). By comparing the various speedometers and the national EPA, it has been possible to arrive at an estimate of the number of ISO 14001-certified companies in Denmark. The various estimates from the different key sources are shown in Table 2.1.

Table 2.1

ISO 14001-certified companies in Denmark

| Source | No. |
|---|---|
| National EPA (Aug. 2000) | approx. 450 |
| Cutter's (Aug. 1999) | 350 |
| ISO Online (Dec. 1999) | 430 |
| INEM (March 2000) | 350 |

These figures are based on the assumption that all EMAS-certified companies are also certified according to ISO 14001, and that about 400 ISO 14001-certified companies exist in Denmark.

As can be seen from Table 2.1, there are between 250 and 550 companies with a certified environmental management system in Denmark. However, the number of environmentally certi-

fied companies does not fully reflect the number of firms with an environmental management system. Not all companies choose to get their environmental management system certified, either because of the bureaucracy of the certification process, the cost, or for other reasons.

While the number of the latter cannot be seen from formal statistics, a qualified estimate can be made from some recent empirical studies. Table 2.2 shows estimates based on four recent empirical studies in Denmark.

Table 2.2

Percentage of companies with an environmentally non-certified management system

| | Year and study | Percentage |
|---|---|---|
| 1 | CASA & Eriksen (1999) | 20%/40% |
| 2 | CASA et al. (2000) | 52% |
| 3 | Christensen et al. (1997) | 27% |
| 4 | Neergaard et al. (1998) | 29% |

These figures are based on the assumption that non-EMAS-certified company has been certified according to ISO 14001, and that there are about 400 ISO 14001-certified companies in Denmark.

As can be seen from the table above, somewhere 20-50% of Danish companies have an environmental management system in place.

Another way to gauge the 'greenness' of a country's business community is to estimate the relative number of firms that have implemented an environmental policy, explicit environmental objectives and environmental action plans.

Table 2.3

Percentage of companies that have implemented an environmental policy, explicit environmental objectives and environmental action plans

| Study | Percentage | | |
|---|---|---|---|
| | Env. policy | Action plan | Env. objective |
| Neergaard et al. (1998) | | | 29 |
| Madsen & Ulhøi (2000) | 30.1 | 22 | 34.9 |
| Christensen et al. (1997) | 50 | | |
| Christensen, P., Nielsen, E. H. & Remmen, A. (1999) | 65 | 44* | 44* |
| CASA & Eriksen (1999) | 52= | 40 | 52= |

* Based on questions where respondents state whether or not they have environmental objectives and actions plans.

= Based on a column in the green accounts where firms state whether or not they have environmental objectives and actions plans.

The overall empirical evidence suggests that about 25-45% of firms have implemented an environmental policy or have environmental objectives and plans. However, more firms seem to have implemented more environmental policies and objectives (about 10% more) than environmental action plans suggesting that they have some difficulties in going from intention to action. However, this figure agrees with the relative distribution of firms with an implemented, non-certified, environmental management system.

As previously mentioned, the problem of quantifying the actual 'greening' level of a country's business community is difficult because of the reasons given above. A useful cross-country indicator would be to compare national estimates of the number of companies registered under EMAS (European Management and Auditing Scheme) and ISO 14001 (International Stan-

dardisation Organisation). Tables 2.3 and 2.4 list the number of firms registered according to EMAS and ISO 14001 respectively. Because of the lack of statistics, however, it is not possible to calculate the number of certified companies from the total number of companies in the country in question, which would have given a more 'just' basis for cross-country comparisons since, ceteris paribus, small countries will have fewer registered firms than big ones.

Table 2.4

Number of EMAS-certified companies in the EU and number of certified firms per capita (July 2000)

| Country | Number of firms | | Number of firms per million inhabitants* | |
|---|---|---|---|---|
| | Number | Ranking | Number | Ranking |
| Austria | 227 | 2 | 28.2 | 1 |
| Denmark | 138 | 4 | 26.3 | 2 |
| Germany | 2083 | 1 | 25.4 | 3 |
| Sweden | 162 | 3 | 18.3 | 4 |
| Norway | 58 | 7 | 12.6 | 5 |
| Finland | 30 | 10 | 5.7 | 6 |
| Luxembourg | 1 | 14 | 2,4 | 7 |
| Ireland | 6 | 13 | 1.7 | 8 |
| Spain | 61 | 6 | 1.6 | 9 |
| Holland | 25 | 11 | 1.6 | 10 |
| GB | 76 | 5 | 1.3 | 11 |
| Belgium | 9 | 12 | 0.9 | 12 |
| France | 35 | 8 | 0.6 | 13 |
| Italy | 32 | 9 | 0.5 | 14 |
| Greece | 1 | 14 | 0.1 | 15 |
| Portugal | 1 | 14 | 0.1 | 16 |

Source: EMAS Helpdesk (2000).
* The average for the number of firms per million inhabitants is 8.0.

As can be seen from Table 2.4, when measured by the absolute number of EMAS-certified companies, Denmark is fourth from the top (138 EMAS-certified firms), after Germany, Austria and Sweden. However, based on the number of EMAS companies per million inhabitants, Denmark moves up to being second best, and is thus far above the average for all member countries (8.0).

As Table 2.5 shows, Denmark comes in ninth, with Japan, Germany and GB in the top three positions. If, however, this ranking is correlated with the relative differences in size across the countries, Denmark moves up to being number three, only surpassed by Sweden and Switzerland.

Assuming that it does not require proportionally as much for a rich country's (with a high GDP) business community to become environmentally certified compared to that of a poor country, a ranking based on the country's GDP will probably give a more just picture. As can be seen from the table, this is even more favourable to Denmark and suggests that Denmark has taken a leading role in the greening of business. In continuation of this development, a national green strategy has been developed. This is outlined below.

Table 2.5

Number of ISO 14001-certified companies in various countries (March 2000)

| Country | Number of firms | | Inhabitants per certificate, '000 | | GNP per certificate |
|---|---|---|---|---|---|
| | Number | Ranking | Number | Ranking | Ranking |
| Sweden | 956 | 4 | 9.3 | 1 | 1 |
| Denmark | 350 | 9 | 15.4 | 3 | 2 |
| Hungary | 106 | 14 | 95.8 | 19 | 3 |
| Taiwan | 652 | 5 | 33.9 | 6 | 4 |
| Switzerland | 505 | 7 | 14.5 | 2 | 5 |
| Finland | 330 | 10 | 15.8 | 4 | 6 |
| Singapore | 87 | 16 | 40.2 | 10 | 7 |
| Holland | 582 | 6 | 27.1 | 5 | 8 |
| Ireland | 96 | 15 | 37.6 | 9 | 9 |
| Korea | 463 | 8 | 93.1 | 18 | 10 |
| Austria | 223 | 11 | 36.3 | 7 | 11 |
| Australia | 350 | 9 | 53.7 | 13 | 12 |
| Germany | 1900 | 2 | 43.2 | 12 | 13 |
| GB | 1014 | 3 | 58.3 | 14 | 14 |
| Japan | 3015 | 1 | 41.9 | 11 | 15 |
| Belgium | 130 | 12 | 78.4 | 15 | 16 |
| New Zealand | 35 | 17 | 105.7 | 20 | 17 |
| Norway | 119 | 13 | 37.1 | 8 | 18 |
| Spain | 463 | 8 | 84.7 | 17 | 19 |
| Slovenia | 23 | 18 | 82.6 | 16 | 20 |

Source: INEM (2000).

## 3. A Green Governmental Enterprise Strategy

As emphasised by the OECD, business policy in Western economies has long been dominated by the use of direct regulation. Environmental institutions, regulations, and methods of enforcement have grown with great rapidity during the past two decades. In many cases, institutions and regulations have simply been added to the existing framework, both reflecting and reinforcing an 'add-on' approach to management (OECD, 1985).

Due to the dominance of command-and-control-based environmental regulation, there has been no major testing of tools making use of the market system. Only since the late 1980s market-based incentives schemes have been taken seriously by politicians and tested on a larger scale, though direct environmental regulation still dominates (OECD, 1989), particularly in the USA, Great Britain, Scandinavia and Italy. In the rest of Europe, many other nations have combined and/or supplemented the regulative approach with economic incentives schemes. The general consensus seems to be that environmental protection has been regulated by (i) permits and standards (direct regulation of behaviour) and (ii) environmental taxation (indirect regulation of behaviour), the latter typically being seen as an economic approach.

The OECD (1989) has identified the following economic tools: (i) charges; (ii) subsidies, e.g. in the form of favourable loans or tax deductions; (iii) deposits, e.g. for bottles; (iv) the creation of new markets; (v) the polluter-pays-principle. Earlier OECD studies (1980, 1981, 1985), however, indicate that there are a number of barriers to the introduction of economic tools, e.g. the fear of unintended effects of distribution, and administrative problems.

Economic environmental instruments can be called 'economic' insofar as they affect estimates of costs and benefits of alternative actions and influence environmental decision making and behaviour in such a way that desirable alternatives are chosen. Economic instruments, unlike direct regulations, leave actors free to respond to a stimulus in a way benefitting them the most (OECD, 1989). Some basic characteristics of economic instruments include being based on economic incentives supposing to motivate the economic agent to innovate in order to prevent unnecessary environmental costs, and giving the individual manufacturer a choice when faced environmental problems.

The GNES begins with the assumption that moving from the present level of environmental concern and activity, it is necessary to pay further attention to frameworks which can support corporate incentives to make the desired decision. The main types of measures are given below.

Table 3.1

GNES measures

| | |
|---|---|
| Regulation such as commands, restrictions, etc. | Defines the legal limits for minimum requirements regarding corporate behaviour |
| Economic control instruments, e.g. green taxes, green subsidies, loans, etc. | Defines the economic limits of production and consumption |
| Corporate frameworks, such as access to knowledge, competencies, capital and well-functioning markets | Defines the general environmental boundaries for business activities |

In order to support and motivate continued self-regulation, environmental regulation is employed in direct interaction with market-based incentives. Market-based measures, such as life-cycle assessment, environmental labelling, environmental management and environmental taxes, are expected to actively support corporate innovations and self-regulation via improved partnership between environmental regulators and the business community.

The governmental strategy is aimed at the following three target areas:

- the improvement of demand for environment-friendly products and the development of green competition;
- ensuring firms' access to the knowledge and competencies necessary to integrate environmental concern in corporate strategies and activities more efficiently;
- improving the basis for the development of green technologies, products and services.

Each area is expected to transform the environmental challenge into a competitive parameter for the business community.

Table 3.2 describes the three areas in more detail.

Areas 1 and 2 are primarily aimed at improving the conditions for a broad integration of environmental concern in corporate strategies and activities across industrial sectors and branches.

It is of crucial importance to create a deeper understanding and recognition in society of the environmental consequences of the individual consumer's buying patterns. This can, for example, be achieved by:

- demonstrating and explaining the history of the product and its manufacturer (e.g. via TV, information campaigns, exhibitions, etc.);
- new IT-based means of environmental communication, which can further explain products' environmental aspects in the shops;
- designing environmental education to focus more closely on the environmental characteristics of products.

Table 3.2

Green strategy: main areas of action

| Target area | Explanation | Possible activities |
|---|---|---|
| 1.Well-functioning green markets | The inclusion of the green factor as a buying preference | Improving demand for environment-friendly products and the development of green competition<br>Improving positive interactions along the value chain<br>Promoting green products and competencies |
| 2. Green OD | The integration of environmental concern in corporate strategies and decisions | Integrating the environmental factor as a market-oriented element<br>Developing managers' and employees' competencies<br>Demonstrations |
| 3. Green innovation | The development of green technologies, products and services | Green technological visions<br>Clusters of green competencies<br>Diffusion of knowledge<br>Improved access to environmental management-related data and information<br>Access to venture capital<br>Coherent regulation supporting green innovation |

Improving environmental competencies among sales persons and customers can be achieved by:

- increased post-vocational training and improved access to new knowledge;
- exchange of methods and experiences of the well-functioning transfer of environmental knowledge from the firm to its partners and customers;
- integrating the environmental dimension in the future training of sales personnel and buyers.

A higher visibility on the market place is achieved by:

- the promotion of environmental labels (the Scandinavian Swan, the EU Flower) that are recognisable to all consumers;
- the development and use of environmental labels for professional customers;
- the further development of environmental reporting.

As recently documented, the importance of stakeholders is increasingly being recognised by the business community (Madsen & Ulhöi, 2001b). New ways of developing and maintaining a constructive dialogue at all points on the value chain offer some interesting potentials. The green business strategy seeks to do this by:

- the development of methods and networks supporting environmental dialogues throughout the value chain;
- accumulating experience, national as well as international, on how such dialogues take place.

For this to happen, Danish environment-friendly products and technologies need to be given a higher market profile. Apart from being affordable and having a high quality for new environment-friendly products to be sold, they also need to be known by the consumers. This can be achieved by:

- improved access for industry to green market consulting (green market analyses);
- improved demonstration of environmental competencies via databases, networks and the Internet.

The importance of green investors is also recognised in the green strategy. To further mobilise important financial stakeholders and thus boost the development of green business investments, the following initiatives are proposed:

- improved environmental strategy in the financial and insurance sectors;

- web-based profiling of green investment opportunities.

The role of incentive schemes has long been recognised as a mean of motivating individual employees within the organisation. However, incentives are also worth considering in the case of self-regulation in industry. According to the green strategy, this can be achieved by:

- reduced corporate environmental taxes;
- differentiated environmental control, easier reporting of environmental data;
- optimisation of green purchases in the public sector;
- incorporation of the environment as an important parameter in public contracts.

However, attention is also directed towards firms themselves and how they are managed and organised. The green strategy suggests that competencies can be improved by:

- the collection and exchange of best environmental management practices and production practices, employee involvement and communication;
- more public/private co-sponsored research and development of environmental management-related issues;
- branch-oriented efforts to demonstrate value creation from environmental management;
- access to knowledge and post-vocational environmental training;
- the diffusion of corporate experiences from successful environmental learning and competence development among employees.

## 4. Discussion

The direct environmental regulation approach typically consists of standards for levels of emissions which have to be monitored and controlled on a continuous basis. Such instruments will require the existence of professional and capable environmental authorities; they are static in nature, being based on past and present information about technology and environmental knowledge in general, and often based on incomplete and/or highly uncertain data and models; they are inflexible with regard to certain unique production situations; they are economically inefficient, being extremely costly to have in place and to maintain; they give the manufacturer few incentives to innovate; they tend to distort competition; they typically have an advantage in cases where pollution is not accepted, e.g. in cases of very hazardous materials; they tend to work well in cases of many and similar polluters; and they require knowledge about the environmentally optimal level of quality in every case where they are put in place.

There seems to be an inescapable schism between the direct and indirect regulation of economic behaviour. While a charge enables emissions to be reduced cost-effectively, it is not possible to really know whether the actual reduction wished for has been achieved. A direct regulative approach, on the other hand, while theoretically being designed to achieve the desired level of reduction, cannot act in such a way without a high degree of cost inefficiency (Mäler, 1984).

What seems to be missing in contemporary environmental regulation was already pointed out by Orr (1976) several decades ago: "What is missing is the view that environmental policy is fundamentally the need to establish a framework that provides *continuous* and *detailed* technological adaptation to the impacts on the environment of growth, change in product mix, and change in process technology" in environmental areas where the potential hazards and consequences are less serious. This will encourage continuous innovation in industry. Regulation and control, on the other hand, will be necessary in cases of high environmental risks and potentially seriously consequences.

## 5. Conclusion

To sum it up, direct and indirect regulative approaches to environmental problems will require full knowledge about: (i) optimal ecosystems, e.g. knowing exactly how ecosystems work and develop over time; (ii) optimal limits of pollution, e.g. knowing the exact limits of an ecosystem's carrying capacity; (iii) the dynamics of the multiplication of toxic effects on ecosystems; (iv)

optimal institutional settings, with no financial restrictions. None of these crucial assumptions can be said to be fulfilled.

Recent investigations in both Denmark (Ulhöi et al., 1996; Sinding et al., 1997) and the EU (Ulhöi, 1997) reveal the presence of a strong trend among the more advanced companies with regard to environmental performance. These findings suggest that environmental regulation per se is decreasing in importance as a key explanatory factor of internal environmental improvements. Instead, pressure from peers, competitors, customers (industrial) and other stakeholders, together with fundamental changes in corporate values and ethics are increasing in importance (Madsen and Ulhöi, 2001a).

It has been argued that the potential seriousness of environmental degradation requires that policy makers begin to consider how the diffusion of cleaner technologies can be further speeded up. GNES can be considered as an important step in the right direction. However, rethinking business strategy and actions along the lines of sustainable development does require a change in corporate cultures, and it therefore presents new opportunities to reassess other aspects of business.

Other issues connected with environmental demands that also need to be addressed include worker participation, democracy in the workplace, the treatment of women and minority groups, animal testing, public accountability and full disclosure, and the impact on developing nations and indigenous populations. Such issues should not be seen separately, but as a part of a new grand paradigm for doing business ethically and holistically. Part of the existing business power that endorses 'the-fox-keeping-the-geese' approach to environmental protection is the same power which continues to deny or restrict rights to workers and to less developed nations. Such issues will necessarily challenge the very foundations of the system which we too often see as immovable, and will therefore be opposed by vested interests.

It is not so much that environmental self-regulation, as pursued by the Danish GNES initiative, is wrong per se. The key question is whether environmental management systems can actually deliver sustainability. Relying entirely on such approaches will not guarantee that the environment will survive with its present diversity and characteristics in the long term. This has two implications. Firstly, such an approach does not take us very far towards achieving sustainable development. Secondly, and more worryingly, because some of the leading actors of environmental self-regulation are very influential, there is a risk that they will overstate the possibilities of such approaches, and thus act as a brake on the more radical changes and innovations required.

The problem is not that the GNES initiative is the result of a top-down process. In fact, this initiative is currently going through a period of public dialogue and discussion. The outcome of this stakeholder involvement process is expected to feed back into the political process before the strategy is fully implemented. The problem is that the GNES fails to provide a real consideration of the principles of sustainable development. However, this does not mean that current environmental management practice is bad, or that innovations such as GNES are a waste of time. They do provide principles that all firms should implement. The real issue is that they do not go far enough. The key concept of sustainable development requires a new approach to business, and we have seen little evidence of a radical paradigm shift neither in the EU eco-management and audit scheme nor in the ISO14001 standards.

The stern reality is that human beings consume too much, in environmentally unfriendly ways, thus creating a demand for products which companies are willing to supply. Consumption has been detached from the common resource base and has predominantly been discussed in relation to economic systems, i.e. from its fundamental role and impact on ecological systems. This exponential growth of consumption and production is rapidly eating up the planet on which we live, while at the same time depriving humans of their capacity for experiencing fundamental and simple happiness from engaging in meaningful social relationships. The roots of any solutions to achieving sustainable development therefore lie more in tackling human consciousness than in adjusting management systems. To prevent the downside of 'the-fox-keeping-the-geese' approach will not only require well-educated and updated regulators, but also a substantial upgrading of the entire workforce in industry (Madsen & Ulhöi, 2001b).

## Acknowledgement

The contents of this article do not in any way reflect the opinions of either the author's employer or sponsor. The usual disclaimers apply. The author would like to thank the Task Force, set up by the Minister of Trade and Industry to assist the present government in revising the national business strategy, for their contributions, as well as graduate student Sannie Fisker and Ass. Prof. Henning Madsen for their assistance in the course of the preparation of the data for this study.

## References

1. Carson, R. Silent Spring. Boston, MA: Houghton Mifflin, 1962.
2. CASA & Eriksen, H. Rapport om evaluering af de grønne regnskaber // Report from The Danish Environmental Protection Agency, 1999.
3. CASA, Ulhøi, J. & Madsen, H. Ny grøn beskæftigelse i Danmark – Midtvejsevaluering af Den Grønne Jobpulje // Report from the Danish Environmental Protection Agency, 2000.
4. Christensen, P.; Nielsen, E. H. & Remmen, A. Miljøstyring og Miljørevision i danske virksomheder // Report from the Danish Environmental Protection Agency, 1997.
5. Christensen, P.; Nielsen, E. H. & Remmen, A. Erfaringer med miljøledelse i danske virksomheder // Report from the Danish Environmental Protection Agency, 1999.
6. Cotgrove, S. Catastrophe or Cornucopia: The Environment, Politics and the Future. Chichester: John Wiley & Sons, 1982.
7. Cutter, Business and the Environment, http://cutter.com/envibusi/ Sept. 2000.
8. The Danish Agency for Industry and Trade. Benchmarking af dansk erhvervsliv [Benchmarking of the Danish business sector] // Report from the Danish Agency for Industry and Trade, 2000.
9. EMAS Helpdesk, http://europa.eu.int/comm/environment/emas/, Sept. 2000.
10. Hardin, G. The Tragedy of the Commons // Science, 1968. 162, pp. 1243 - 48.
11. International Network for Environmental Management (INEM), http://www.inem.org, Sept. 2000.
12. ISO Online, The ISO Survey of ISO 9000 and ISO 14000 certificates – Ninth cycle, http://www.iso.ch, sept. 2000.
13. Madsen, H. & Ulhøi, J. P. Trends in corporate environmental management 1995-1999 // DEMS WP 7. 2000. Dept. of Information Sciences, The Aarhus School of Business.
14. Madsen, H. & Ulhøi, J. P. Integrating environmental and stakeholder management. Business Strategy and the Environment, 2001a. pp. 77 - 88.
15. Madsen, H. & Ulhøi, J. P. Greening of human resources: environmental awareness and training interests within the workforce // Industrial Management & Data Systems, 2001b. Vol. 101(2), pp. 57 - 64.
16. McCormick, J. S. The Global Environmental Movement. Bloomington: Indiana University Press, 1989.
17. Milbrath, L.W. Envisioning a Sustainable Society. Albany: State University of New York Press, 1989.
18. Mäler, K. G. Nya ekonomiska styrmedel i miljöpolitiken // Ekonomisk debatt, 1984. 7, pp. 442 - 450.
19. Neergaard, P.; Klamer, B. & Poulsen, M. Kvalitet og miljø i danske virksomheder // Working paper, 1998. Dept. of Production. Copenhagen: The Copenhagen School of Business.
20. OECD. Environment and Economics. Results of the International Conference on Environment and Economics // Report, 1985. 18th-21st June, 1984, Paris.
21. OECD. Economic Instruments for Environmental Protection // Report, 1989. Paris: OECD Publications Service.
22. OECD. Pollution Charges in Practice // Report, 1980. Paris: OECD Publications Service.

23. OECD. Economic Instruments in Solid Waste Management // Report, 1981. Paris: OECD Publications Service.
24. O'Riordan, T. Environmentalism. London: Pion Limited, 1976.
25. Orr, L. Incentive for Innovation as Basis for Effluent Charge Strategy // The American Economic Review, 1997. 66, pp. 441 - 447.
26. Pepper, D. Determinism, Idealism and the Politics of Environmentalism – a Viewpoint // International Journal of Environmental Studies, 1985. 26, pp. 11 – 19.
27. Repetto, R, (ed.). The Global Possible. Resources, Development, and the New Century. New Haven: Yale University Press, 1985.
28. Sinding, K.; Madsen, H. & Ulhøi, J. P. Sustainability and Corporate Environmental Focus. An Analysis of Danish Small-Medium Sized Companies (co-authors H. Madsen & K. Sinding) // Managerial & Decision Economics, 1997. Vol. 18, pp. 443 - 453.
29. Tolba, M. K. Development Without Destruction: Evolving Environmental Perceptions. Dublin: Tycooly Publishing Ltd., 1982.
30. Ulhøi, J.P.; Madsen, H. & Hildebrandt, S. Green New World! A Corporate Environmental Business Perspective // Scandinavian Journal of Management, 1996. 12(3), pp. 243 - 54.
31. Ulhøi, J. P. Industry and the Environment: A Case Study of Cleaner Technologies in Selected European Countries // Journal of Engineering and Technology Management, 1997. Vol. 14, No. 3 & 4, pp. 259 - 273.
32. World Commission on Environment and Development. 1987. Our Common Future. Oxford: Oxford University Press.