

Business and biodiversity: The Next Step in Corporate Responsibility?

Rasmus M. Andersen*, Martin Lehmann & Per Christensen

Department of Development & Planning, Aalborg University, Denmark

*Corresponding Author: Rasmus M. Andersen, rama05@plan.aau.dk

Martin Lehmann, martinl@plan.aau.dk

Per Christensen, pc@plan.aau.dk

Abstract

Despite the overall importance of biodiversity, the quality measures of biodiversity show worrying figures. Numerous human impacts on nature impose serious hazard to its inherent diversity. This expansion of human activities leaves the battle against loss of biodiversity to be a great challenge - a challenge that needs to be shared between conservationists, green organisations, public authorities, as well as the private sector.

A new wave of green initiatives has emerged within the culture of business and marketing. The reasons for why businesses should engage in environmental actions are many, but the effort has until now considered biodiversity actions relatively little, compared to other areas such as e.g. climate related actions.

Nevertheless, the opportunity for businesses to meet their responsibilities and lift a share of the challenge is far from being just a romantic thought. Nor is the challenge of engaging businesses in responsible actions. The core challenge is to create awareness of the environmental phenomenon *biodiversity*, inform about the significance of business involvement, and encourage the business world to participate in this process of protecting biodiversity as the valuable asset, which the world and its inhabitants cannot afford to stay losing.

This paper focuses on how companies in Denmark in concrete ways can take responsibility for integrating initiatives that align protection of biodiversity with other, more traditional environmental management and corporate social responsibility (CSR) related activities.

The paper investigates the institutional setup for engaging in biodiversity actions from a business perspective, considers corporate values and priorities in proposing strategic changes in the favour of biodiversity concerns, and look at accessible and credible approaches to initiate effective strategic actions.

Introduction

Numerous human impacts on nature, e.g. the rising demand for consumptive resources such as food crops, minerals and timber, impose serious hazard to its inherent diversity. For a large part, the benefits that nature provides humanity and our societies are, however, not taking into account when valuing their services. They are so-called 'externalities' and our effects on them are - if not explicitly declared illegal - ignored and economically invisible (TEEB, 2010). This leaves the battle against loss of biodiversity to be a great challenge. A challenge that needs to be shared between both conservationists, green organisations, public authorities as well as the private sector that benefits and gains economic profit by exploiting, managing, distributing the planet's resources, through practices which are more or less friendly to the ecosystems of the planet.

This article presents thoughts and reflections on how the businesses sector could handle biodiversity in a more pro-active manner as part of their other sustainable development activities, be they related to environmental management or corporate social responsibility of the business.

Ecosystems Services and Biodiversity

Ecosystems generate resources which add value to our society through food, clothes, water, medicine, building materials, and at the same time sustain our lives by providing services like climate, water purification, etc. Ecosystems comprise a variety of life, which has evolved for millions of years. Living organisms take up each their own place in the advanced interacting communities of ecosystems. Consequently, the functions of ecosystems depend on the diverse biological life of ecosystems, species and genes as well. The capacity of an ecosystem to sustain the provision of its services relies on resilience, productivity and overall health; thus in many regards, biodiversity plays a crucial role on the natural environment, on which human well-being relies heavily (MEA, 2005).

Biodiversity is the variability among living organisms from all sources, including inter alia, terrestrial, marine and other aquatic ecosystems, and the ecological complexes of which they are part; this includes diversity within species, between species, and of ecosystems (CBD, 1992; Wilson, 1992). Ecologically understood, the role of biodiversity ensures i) the biological foundation for the flow of energy and material within the organisms of ecosystems, which determine the properties as ecosystem services, and ii) the resilience which is vast terms necessary for ecosystems to sustain these properties (Myers, 1995).

The indirect ecosystem services of biodiversity play a great role in the well-being of natural ecosystems, which Myers (1995) asserts have an extreme value compared to direct services explicitly. Accordingly, the Millennium Ecosystem Assessment (2005) and Arler (2009) state in this respect that biodiversity holds a significant share in making ecosystems self-sustain and be resilient to interferences, although Arler (2009) at the same time stresses that the uncertainty of the exact effects of biodiversity in different ecological systems makes the argumentation of

biodiversity protection, for the cause of the indirect ecosystem services, which alternatively would not emerge, very difficult.

In Table 1, examples of the relationships between biodiversity, ecosystems and ecosystem services are shown. In recent years our attitude to ecosystem services has changed from focusing on capacity to be recipients of pollution (1970-1980) to nutrient circulation (1980-1990) and later on the foundation of a healthier climate (1990-2000). Biodiversity has been on the agenda since the Rio-Conference in 1992, when the Convention on Biological Diversity was launched, and moved to the core of political attention in the beginning of the 2000s when the goals of stopping decline in biodiversity before 2010 were formulated.

Table 1 Relationship between biodiversity, eco-systems and eco-systems services (after TEEB, 2010)

| Biodiversity | Examples of ecosystem goods and services | Examples of economic values |
|--|--|--|
| Variety and extent/area of ecosystems | <ul style="list-style-type: none"> • Recreation • Water Regulation • Carbon Storage • Storm protection | Avoiding GHG emissions by conserving forests: USD 3,700 billion Mississippi Delta: USD 12-47 billion per year (Batker et al., 2010) |
| Diversity and abundance of species | <ul style="list-style-type: none"> • Food, fibre, fuel • Design inspiration • Pollination | Contribution of insect pollinators to agricultural output: ~USD 190 billion per year |
| Variability and population of genes | <ul style="list-style-type: none"> • Medicinal discovery • Disease resistance • Adaptive capacity | 25-50% of the USD 640 billion pharmaceutical market is derived from genetic resources |

It is well known that production of consumables is very effective when technology is applied, and the desired species (e.g. wheat) are isolated as monocultures. Therefore, the demand for food is not met through a production where high diversity exists, making it difficult to argue for protection of biodiversity for this explicit reason. However, it must be recognised that part of the reason why agricultural production produce much higher yields than it would have from nature, is the technology of refining genetic material of the domesticated species by extracting the desired properties from a diverse range of species (Arler, 2009).

Another example of how the direct consumptive ecosystem services depend on biodiversity is in medicine and medical research in general. Much of the medicine produced and used today comes from parts of or extracts from biological organisms. As properties of different organisms vary across species, the desired properties to obtain from biological extracts increase with a higher diversity in the biological species and genes. The loss of biodiversity will thus most likely deteriorate the changes of future discoveries of cures for e.g. cancer (Arler, 2009).

These examples illustrate what possible consequences biodiversity loss may have on consumable products alone. Biodiversity cannot be consumed as such, but it nevertheless holds great value

through its direct as well as indirect supportive properties. Just as with climate change (Gore, 2007), it is a social responsibility to protect biodiversity!

The business link to biodiversity

It should be recognised that when humans interfere with the ecosystem and perform interventions in order to obtain valuable ecosystem services of all kind, the biological diversity is a fundamental requirement for an ecosystem to maintain its functions and recover. Hence, well-functioning ecosystems depend on biodiversity and a continuous enjoyment of the services they provide us with requires the protection of biodiversity for the advantage of everyone (Myers, 1995; MEA, 2005; Suneetha, 2010; UNEP, 2007).

The responsibility for interacting with nature in a way which does not deprive the needs of future generations is in the hands of those who use and benefit from the services of the ecosystems. Special responsibility should be left to the companies that exploit the resources through practices which are more or less friendly to the ecosystems and biodiversity of the planet. Businesses thus have a great role to play (CBD, 2005; TEEB, 2010).

The first signs of a new wave of such 'green' initiatives have emerged within the business society (Athanas, 2005). The overarching reasons for why businesses should engage in environmental actions are obvious, but efforts have until now only targeted biodiversity relatively little, compared to other areas such as e.g. climate related actions.

The private sector is compelled to consider the environment through the compliance with different political acts. Many of these are addressed to avoid impacts like climate change, eutrophication, etc. However, biodiversity protection has not yet reached the level of institutionalisation as we find it regarding "pollution", "ozone depleting substances" or "carbon footprint".

Therefore, despite its vital role as a quality in ecosystems and provider of natural resources, in order to awake the interest of politicians, economists and businesses, biodiversity need to be referred to in concrete terms of its contribution to the economy and welfare of humans (Arler, 2009).

As the protection of biodiversity seems to be still more urgent, many stakeholders have started to draw attention to this new field and consequently a new wave of institutionalisation of such regulatory, normative and cognitive institutions (Scott, 2001) are facing businesses and challenge the way these matters have been managed previously.

The Convention of Biological Diversity (CBD) recently drew attention to the responsibility of the private sector, and The Economics of Ecosystems & Biodiversity (TEEB) proposes business to take leadership. Both stress the importance of private sector engagement for accomplishing the 2010 targets through a number of key points (CBD, 2005; TEEB, 2010):

- 1) The direct impact on biodiversity from the use of and distribution of natural resources originates to a great extent from actors in the private sector.
- 2) Stakeholders in the private sector have great influence on government decisions and public awareness and values. If the issue of biodiversity is adopted by businesses, the topic would enter the societal arena as a serious issue.
- 3) The influence on environmental policies would help in constituting effective policies. Hence active involvement by businesses in political dealing with the issue would help to improve consensus and set realistic expectations from more effective political frameworks.
- 4) The skills of the private sector would be extremely valuable as an integral part in the research, management, communication and development of the biodiversity issue.

The current trends of environmental degradation and decline in biodiversity have a devastating effect on ecosystem services. Running by business as usual does not only impose a risk in relation to societies but the decline in ecosystem services caused by decline in biodiversity also affects businesses (CBD, 2005). The values produced by ecosystems are estimated to be worth roughly US\$ 72 trillion a year, which compares to the world gross income. By 2010 two thirds are considered degraded from human activities (Nellemann & Corcoran, 2010). Further degradation will mean greater loss of natural capital, hence economic loss. Future demands for bio-energy and food are likely to present a worse situation in few years, if the management continues like the present.

F&C (2004) argues that resource extracting sector (the primary sector) is at highest risk. More and more of these businesses, with major impacts on biodiversity feel obliged to spend company resources on biodiversity in order to sustain resources and improve profits (CBD, 2005). However, the risks are not only based on the direct dependency, but also appear indirectly through the relationship with suppliers, customers, authorities and other stakeholders. The impacts on business can thus be potentially influential in less direct ways than profit; e.g. with respect also to market position and legitimacy and would eventually hamper key relations such as license to operate, disruption of external relations, reputation loss, and increased production costs (F&C, 2004). In other words, companies can face risks by not considering crucial biodiversity issues in their behaviour (TEEB, 2010).

The relationship between businesses and biodiversity is two-way as 'business-as-usual' contributes to biodiversity loss if proper management is not adopted and developed, but biodiversity loss contributes to putting business at risk. To some leading companies in more direct interaction with biodiversity, biodiversity is thus already an important issue to address (F&C, 2004). However, for many other businesses this challenge might not be visible yet, but arguments are piling up that such a pressure is on its way. So shortly business will find the management of biodiversity just as obvious a task as they find carbon footprinting of their business today.

Institutional context

The work on biodiversity in companies is challenging, as biodiversity is a rather new concept which introduces yet another meaning of the '*environment*'. Furthermore, biodiversity is institutionalised through another set of regulations. In general, the institutional set-up related to biodiversity is very different from what we find pertaining to '*environmental protection*'.

The regulation of biodiversity has a long history, at least when we look at the concept of biodiversity together with its ancestry in concepts like nature conservation or nature protection. These concepts date back to the beginning of the 20th century where many countries, including Denmark, formulated the first laws on nature conservation (1916 in Denmark) and where many countries started establishing National Parks. These regulations were later on supplemented by a set of rules aiming at protecting '*natural habitats*'. The introduction of rules started in the 1930's. In 1992 the national regulations in Europe were supplemented by stricter versions, namely the EU directives on Habitats and Bird Protection. During this process, nature conservation and protection changed into the broader concept of protection of biodiversity as referenced previously in this paper. Meanwhile, pollution grew enormously in the affluent decades after World War 2 and new types of threats towards nature were imminent, having their root in increasing emissions from industrial pollution. Based on the new insight from the science of ecology, environmental protection saw the light, and new sets of regulations were introduced after the first UN conference on environmental protection. In Denmark the first law on environmental protection were launched in 1974. Like in many other countries these regulations founded a new branch of regulations; the '*protection*' laws (Law on Nature protection and Law on environmental protection), institutionalised at separate agencies (the Danish Forest and Nature Agency and the Danish Environmental Protection Agency) staffed with people with different professional backgrounds –from the fields of biology/forestry and engineering, respectively

In other words, the institutional set-up between the two spheres of '*protection*' is quite different. Consequently, it is very challenging to integrate biodiversity/nature protection into the spheres of environmental protection. The two spheres have been living a life of their own but are now prone to being integrated. In most countries environmental protection has attracted much more focus than nature protection, since the Stockholm Conference in 1972. It started out with an institutional set-up based on '*environmental permits*'. These regulated air-pollution, noise, waste and wastewater. Due to its reactive character, the 1980's saw an emphasis on abating pollution using end-of-pipe solutions. From preventing environmental impacts this went on to prevention and cleaner production, and later on also emphasising on environmentally friendly solutions in the entire product chain. In the 1990's this led to the establishment of environmental management systems (EMS) as a more proactive tool. From then on, emphasis in corporate environmental management in these proactive companies has been on making continuous improvements, encouraged by a multitude of stakeholders. As part of this tendency we have also seen that still more pressing new spheres of '*protection*' has been integrated into EMS, starting with

occupational health and safety (OHS) and energy, to now also addressing carbon footprint and corporate social responsibility (CSR). And the newcomer in this family would then be biodiversity, as a response to stakeholder interests!

The pressing question is then: How can biodiversity be catered for in a system initially being formulated within the paradigm of '*environmental protection*'? Can biodiversity/nature on the one side and environment on the other be integrated into one common system when the institutional set-up is different as pointed to above?

Protection of Nature and Biodiversity

In Denmark nature protection was targeting the threats to nature from urbanisation and the also increasing use of the landscape for production purposes like increased areas for agricultural production through the reclamation of heath land for agriculture or afforestation (plantations). Pollution from industries also played a role at this point in time; especially the emissions of sewage to water courses were widely debated. The way nature conservation was addressed was by using then the legal instrument "nature conservation". The law on nature conservation was decided upon in parliament in 1917. The law established the framework for conserving nature and this instrument is still part of today's the law on nature protection - even though other more powerful instruments have been introduced since then.

Nature conservation always implies a certain compensation to the owner, and the restrictions put on the owners are legally binding, formulated as an easement registered in the Land Registry. In a conserved area we normally see some restriction on farming practices, but the land is (normally) still owned by the holder of the deed. Nature conservation thus establishes a specific encroachment in the private property of the landowner(s) and compensation is given to the owner. Nature conservation has been used to protect remaining parts of Danish nature like heath-land or pieces of natural areas hosting endangered species. Nature conservation has been criticised for being reactive as measures are taken when the habitats or species in question *have* growing rare or are on the brink of extinction. (Agger, 1980). Only rare landscapes, habitats and species are conserved, and ordinary nature, which in many respects is the most important as regards ecological wellbeing, is neglected. This reactive strategy is not based on ecological holistic considerations, but focuses only on special bits and pieces of our natural heritage.

In Denmark what we call "nature" is mainly semi-natural habitats like commons, meadows, bogs and heath land that are kept as open grasslands by the grazing of cows and sheep. This creates a valuable habitat for many species. However, it should not be regarded as "wild nature", but as a product of older forms of agriculture, as these habitats are shaped by human intervention. During the last 50 years, these ordinary agricultural habitats have witnessed dramatic changes. In the 1950s and 1960s, many meadows and commons were drained and tilled and grain was grown on them (Hansen, 2003). Furthermore, recent decades have also seen many changes of agricultural production that affects these semi-natural habitats. Many farmers no longer have cows but focus

on pig production, and without the cows, the meadows are growing into scrubland. These different threats to the ordinary Danish nature lead to the formulation of a new institutional set-up for nature protection based on the instrument called “nature protection”.

Nature protection as an instrument is formulated in §3 in the Law on Nature Protection, which is a “compensation-free regulation”. The formulation is very clear and simply “prohibited to alter the state of” an area classified according to the §3. It is possible, however, for a landowner to be granted exemption from this regulation (§ 65(3)). The argument behind this compensation-free regulation is that it is fair to restrict the right to use certain resources or habitats if the property is not withdrawn from the owner. This can be done without giving compensation if these restrictions are general in nature, and that the encroachment on the private property, in general, is not too burdensome for the owner. On nature protected habitats all changes are prohibited, like ploughing heath lands, using fertilizer or pesticides, growing crops or lowering the water level. Practices used before the enactment of the law continue to be legal, by definition. This new kind of regulations (§3) was first introduced into nature protection in 1978 and in 1992 it was expanded so that it today covers watercourses, raised bogs and moors salt meadows and heath lands and meadows.

EU passed two important directives on habitat and bird protection in 1978 and 1992 in many respects covering the same idea of “protecting nature” but as has been realised during the last 10 years with a wider scope and stricter rules (Agger et al., 2005). The Habitat Directive was passed in 1992 concomitantly with the UN world summit in Rio de Janeiro and it was part of the EU contribution to the international Convention on Biodiversity. 254 sites are now designated and together with the bird protection sites they form the backbone of the EU Natura 2000 network (Agger et al., 2005).

Denmark has been resistant to implement the Natura 2000 rules too radically. First of all because Natura 2000 have more stringent goals than the national rules in §3, but also because EU emphasises active management where even activities that has hitherto been seen as legal must be regulated in order to reach the goal on “favourable conditions”.

The responsibility for the world to engage in conserving biodiversity was recognised at the 1992 UN conference in Rio de Janeiro. In 2002 on a Conference of the Parties, the member states committed to concrete goals to be achieved by 2010: *“To achieve by 2010 a significant reduction of the current rate of biodiversity loss at the global, regional and national level as a contribution to poverty alleviation and to the benefit of all life on Earth”* (CBD, 2009). The year before, in 2001, the EU member states set as a target to *stop* the loss of biodiversity by 2010. By being committed to the UN and EU agreements, the EU developed a biodiversity action plan (BAP) in 2006 (EC, 2010).

For the EU, the vision of protecting biodiversity and stopping its decline before 2010 is implemented in the establishment of the Natura 2000 network. But like everybody else it has long

been realised that this is not possible so a new strategy prolonging the goal to 2020 has now been accepted (EU commission 2009).

Besides the overall measures from the EU directives and the national regulations a lot of measures related to biodiversity have also been launched by different actors within this field. The engagement of businesses in environmental and sustainable practices is no longer encouraged only by legal acts. In recent decades we have witnessed a shift in regulatory measures from juridical instruments to more broad use of instruments, especially economical but also voluntary covenants, certified management systems and other more reflexive or self-regulatory measures. Many of these are based on voluntary programs that seek to protect biodiversity and nature by engaging companies – like industries or farms – in schedules that are either targeting the biodiversity impacts related to the product or, more narrowly on the production facility. Just like it goes for environmental protection – or more correctly environmental management systems – we see that focus can be on the production facility (like in the traditional environmental permit) or it can be more focused on the whole life cycle often taking the product as its point of departure.

For nature protection we find several stakeholder-based voluntary agreements targeting the whole lifecycle of a product. Two examples of this is the Forest Stewardship Councils rules of conduct setting the frames for the production and sale of forest products, based on a labelling of products living up to the standards. The same goes for Marine Stewardship Council that has established voluntary codes of conduct (or criteria) for the catch and sale of fish products. Both these voluntary agreements targets more or less directly biodiversity and they do it in a life cycle perspective.

For biodiversity we also find some voluntary schemes that relates to existing regulatory systems like the UN Biodiversity Convention. In the Countdown 2010 voluntary agreement, municipalities and companies alike can make “commitments” to establish some activities that make them eligible as partners in these agreements.

The CountDown 2010 was established as a European network for participating on reaching the goals. The initiative is hosted by the European regional office of IUCN (International Union for Conservation of Nature) in 2004 and addressed towards governments, local authorities, civil society, the private sector or any other organization with a commitment to contribute towards reaching the goals of CBD. So far, almost one third of the Danish municipalities and the Danish Ministry of the Environment have committed to participate (CountDown, 2010).

Besides the mentioned regulations and covenants companies can also be governed or inspired by local measures as they are put forward in local plans or municipal policies or even in the policies of local NGO's like Danish Society for Nature Conservation. Such goals and objectives can be integrated into the policies formulated by the company in its CSR or EMS policies.

The demands on the companies working with biodiversity can be varied, and come from many sources, be it regulations, dialogue with stakeholders or inspiration from the very many fields that cover parts of the biodiversity discourses of society today. How companies can handle these demands and ideas in relation to their management schemes, we will look at in another part of this paper through reflections on how to make a manual that in more details describes which problems to address and how to do it.

Biodiversity, Stakeholders and Corporate Responsibility

Considering environment as part of the practices of businesses is a rather modern idea. Environmental protection has since the 1970's been part of national legislation in most countries. Since then, business compliance has developed from focussing on abating pollution by end-of-pipe solutions to preventing environmental impacts through prevention and cleaner production which emphasises environmentally friendly solutions in the entire production chain.

The engagement of businesses in environmental and sustainable practices is no longer encouraged only by legal acts. In recent decades we have witnessed a shift in regulatory measures from juridical instruments to more broad use of instruments, especially economical but also voluntary covenants, certified management systems and other more reflexive (Beck, 1992; Grin, 2006) or self-regulatory measures (Lehmann et al., 2005). The up-and-coming instruments today are carbon footprint (e.g. PAS2050 or ISO14065) and CSR (e.g. through Global Compact, or by way of the new ISO 26000).

It is our postulate that biodiversity-management will be the next step and complement CSR and carbon footprint as a trinity of strategies and policies that make businesses sustainable. The driving force behind such a fad is very often the anticipated competitive advantage either through risk prevention or market diversification (Madsen & Ulhøi, 2001; Kramer & Kania, 2006; Kørnøv et al., 2007; Blowfield & Murray, 2008). The classical thought of CSR is that although short-term costs from performing actions are inevitable, it will bring home economic surplus in the long-run perspective (Burke and Logsdon, 1996; Harrison et al., 2009).

The growing expectations of companies to engage in responsible activities and the difficulties of the larger part of the private sector (most notably SMEs) to handle the new types of demands put upon them, has drawn attention to the importance of developing systematic relationships between and across sectors and among a wide range of stakeholders.

Furthermore, collaboration in networks is increasingly being used in order to address the formation and development of problem solving, knowledge building and learning in and between organisations and individuals. Networks are more flexible forms of organisation and are seemingly more appropriate when handling complex problems and activities that are difficult to define and which must include a broad set of stakeholders.

By engaging in partnership with local authorities and municipalities, other companies and NGOs, private sector stakeholders gain access to important external resources and are better fit to cope with external demands such as legislation and value-chain pressures. Similarly, businesses can bring forward significant capacities (financial, infrastructure, human resources, etc.) necessary in order to for example halt biodiversity loss. Not surprisingly, at the 2002 Earth Summit (WSSD) in Johannesburg, it was concluded that public-private partnerships should be one of the pivotal mechanisms of greening.

From a biodiversity perspective, governance and thereby inherently collaboration between a multitude of actors from especially the public and the private sectors is a necessity. The importance of engaging the business community in the implementation of the CBD is increasingly recognised. It covers for example

“(...) the engagement of Parties with the business community when developing and implementing national biodiversity strategies and action plans; the participation of business in Convention processes; the compilation, dissemination and strengthening of the ‘business case’ for biodiversity; and the compilation and development of good biodiversity practice.” (CBD, 2010)

And further:

“(...) Work to mainstream the concept of biodiversity in society through, where appropriate, developing partnership with the private sector and extending exchanges of information about successful experiences and practice; Encourage corporate social responsibility, with a view to making the private sector a full partner in biodiversity conservation, and promote enabling environments for private investment in sustainable management of biodiversity.” (CBD, 2010)

Looking specifically to the Danish context, reflecting on 15-plus years of experiences with network forms of public-private partnerships, and their roles in relation to environmental governance, and their potentials for dealing with issues of business & biodiversity is in this context then a useful exercise as in these experiences might lie some of the possibilities to actually halt the loss of biodiversity.

Case example: Green Network in Denmark

During the early part of the nineties, a number of Danish municipalities and counties developed mutually committing partnerships with the private sector. The partnerships often had an environmental focus and were established on the premise that environmental protection and private sector development could in fact walk hand-in-hand.

At the same time and aided by these partnerships, the regulatory centre of attention was gradually changing both in form and in focus. From an arms-length and command & control approach to regulation (government) to an inclusive, self-regulatory approach (governance). And

from problem-solving, media-shifting (dilution, end-of-pipe, etc.) and production-oriented to problem-mitigating and product-oriented.

The resulting networked governance provided space for strategic dialogue between and within the participating organisations, i.e. both public and private, resulting in early implementation of strategic environmental management.

Results to date

The first network that was initiated with this focus was the Green Network in the then County of Vejle (today located in the regions of Southern and Central Denmark).

Starting out in 1992 with five municipalities, the county and about 50 local companies, the network is a story of an away-defeat and home-win (Lehmann et al., 2005). The formal establishment of the network took place in June 1994, where the six public authorities and 29 companies committed themselves to work progressively with environmental protection and business development. Primarily, the focus was on continual improvements in lieu of traditional environmental management with a coupling to occupational health & safety.

Today, the network has grown to a total of almost 300 members and the work is diversified and in addition to environmental management also specifically entails occupational health & safety and social responsibility. Members are from a broad range of sectors and include local industry, public organisations, agriculture, and services.

Besides the developments in focus, activities and outreach, the Green Network has been role-model for additional networks in Denmark and helped establish their umbrella organisation: Key2Green (originally Environmental Forum Denmark). The original manual for Environmental Management has been revised and through Key2Green available to the networks' members (about 800-1000 organisations).

The activities in Green Network and its 'sisters' have created results on several fronts. First of all, more and more organisations have started working pro-actively and on a continual and strategic basis with environmental improvements (through integration of an environmental management system). Second, this work has often been used as a stepping stone to enlarge and institutionalise (by the development of new manuals explicitly aimed at these aspects) strategic efforts encompassing OHS and other activities pertaining to the wider social responsibility of companies.

The resulting palette of manuals aimed directly at facilitating easier uptake of these concepts in small and medium-sized enterprises and not just in larger corporations (something that other established approaches, e.g. ISO14001, AA1000, etc., have often been criticised for not being able to), has resulted in an uptake that is earlier and larger than what can be statistically expected (Formann & Jørgensen, 2004). This indicates that the work done in the network, the resources committed and the activities carried out push in the right direction.

The question now is if the networks can be used as vehicles to also engage stakeholders in a committed, systematic and continual drive to combat the loss of biodiversity? Building on previous successes, can the networks develop concepts and manuals that are appropriate for also smaller companies and businesses to provide for joint, local action for biodiversity? And, with the diversity of their membership, what are the perspectives for the networks to provide for a concerted, larger scale effort taking into account local as well as global challenges?

Green Network (GN) as a pioneering initiative where currently almost 300 members (businesses and organisations in the southern part of Jutland, Denmark) develop shared knowledge and tools for performing and reporting on responsible actions actually has a history that provides for a fairly positive outlook in regards to action on biodiversity. Their ability to continually develop new tools for existing and new members on aspects such as environmental management (with a view to both production and product/service), occupational health & safety, life cycle assessment, carbon footprinting, etc. Bears witness to an organisation able to take up new challenges brought onto companies from a diverse set of stakeholders. To begin with, mostly from public organisation, but increasingly also relating to stakeholders in the organisations' value chains.

Of equal importance is that these tools have come about as a result of quite extensive collaboration with a host of different stakeholders - private and public, local, regional, national and even international – and thereby signifies relevance outside the network only.

However, the tools might be a two-edged sword and provide also for a path-dependency where action and reporting seem focused on numbers rather than impacts.

The main contents of environmental reports, even from what might be termed “sustainable” companies (those companies that report on at least two of the three strategic efforts) include audits on consumption, waste and emissions. Reflections on impacts are limited to ones that can be sensed by humans, i.e. noise, dust, and soil contamination. However, no impacts on the natural environment in a broader sense are considered and neither are any ambitions for future initiatives on impact reductions addressed.

With reference to the introduction of the institutional context in this paper, which explains the development of environmental focus in companies throughout the decades, the actual emphasis in the reports of the GN members has not advanced significantly to go beyond what is required from external parties, e.g. by considering impacts on a larger than the local scale, which CSR and carbon footprint addresses. Instead, the effort seems to remain on pollution prevention, and the overall incentive for conducting environmental reports to be in compliance with the GN guidelines, which corresponds with the requirements of other guidelines and regulations. Although the social reporting guideline encourages members to consider *Global Challenges*, and GN in their own sustainability report in this section states “Green Network contribute through our work on sustainability to making members focus on global challenges in all regards”, no companies demonstrate any commitment to the biodiversity issue. However, indicators of CSR thinking are

found, e.g. when *FSC* and *avoidance of rainforest wood* are mentioned by production companies in this section.

Where the instrument for performing environmental actions promoted by GN is to keep account, report and improve numbers, the current environmental impacts from resource use and emissions, locally (SO₂ and NO_x) and globally (GHG) can be decreased effectively through pollution prevention. The incentive behind performing better in these respects can be the compliance, but also cost reductions are an obvious driving force. When increased value to society is the main goal behind actions, avoided impact on society is the mission. This introduces the need for new methods, which can interpret impacts on biodiversity from inventories on company activities.

The way ahead

The future seems not that bleak and history and current trends might tell us why.

The case in the early- and mid-nineties when GN was established was that the local authorities in the region were in many cases frontrunners and continue to be so compared with many other municipalities in Denmark. Vejle County, for example, was looking towards a strategic environmental dialogue (Christensen, 2003) rather than relying only on traditional command & control. Later, Kolding and Middelfart municipalities must both be considered at the fore when focus shifted to climate change; Kolding for their work to become one of the six first appointed Climate Cities in Denmark in 2008; Middelfart because of their innovative approach to ESCO, willingness to invest in energy savings, and early concrete goals and actions in this regard.

Turning to the regional level and possible support (knowledge-wise, financially as well as politically), the current Sustainable Development Strategy in the Region of Southern Denmark (RSD, 2008), explicitly mentions both Countdown 2010 and concrete actions on biodiversity as well as the networks as vehicles for implementation. One of the results is that 16 of the 22 municipalities in the region have signed the Countdown 2010 declaration (five of the six GN municipalities have signed), and quite a few have also developed concrete projects, see Figure 1 below. The 16 municipalities were the first municipalities in Denmark to sign the Declaration, and as can be seen, the region of Southern Denmark is by far the most visible region in this aspect, with the GN municipal engagement also noticeable.

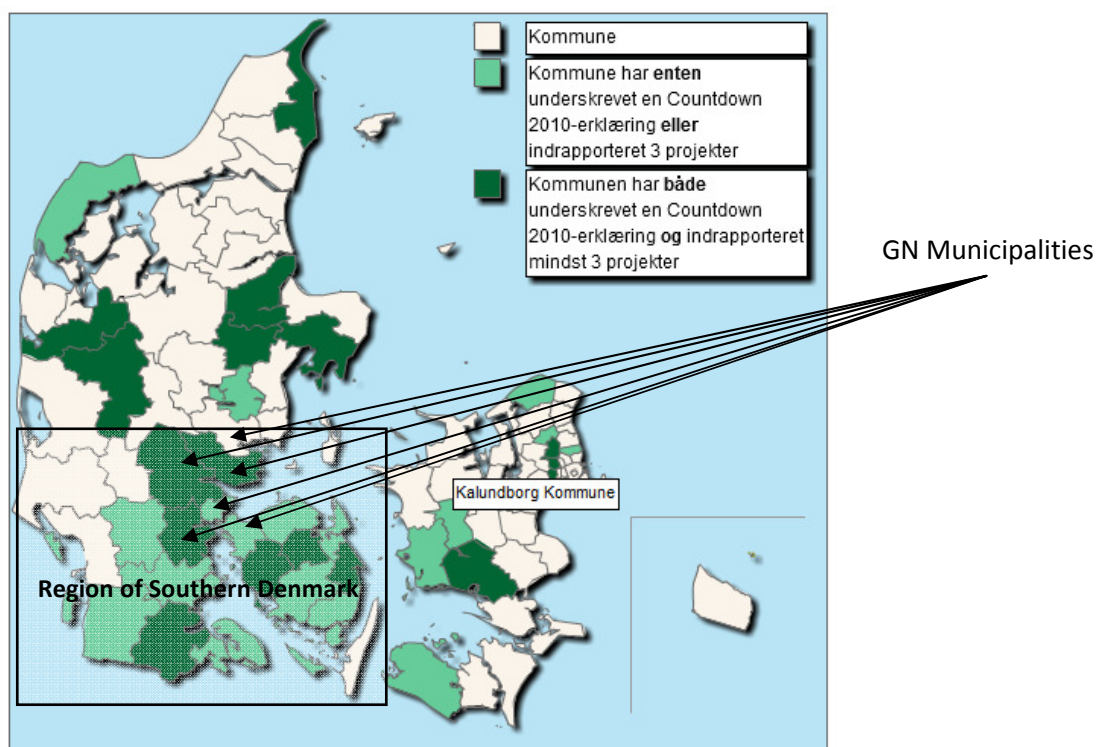


Figure 1 Commitment of the Danish municipalities to Countdown2010 by July 2010 (BLST, 2010)

Furthermore, from central authorities, most notably the Agency for Spatial and Environmental Planning, it has been acknowledged that one of the most promising options for engaging business with biodiversity might lie in the Green Network region and by way of a joint effort (Jensen, 2010).

What we therefore see are a number of similar circumstances to when the Green Network was formed and engaged as a frontrunner with environmental and later generic CSR issues. To actually put biodiversity on the business agenda as part of their corporate responsibility seems therefore possible, but no doubt will require another concerted effort from the public sector in question. This might include to engage with new stakeholders than is traditionally the case – the municipal park and nature department rather than the environmental department; planners and biologists rather than engineers, etc. This has been possible before, though, so why not in the future.

Conclusion and discussion

With high ambitions, organizational setup and expertise available, GN should follow the evolving trends of corporate responsibility and environmental efforts, and continue to be a front runner with regard to this. Biodiversity is the next step, and the institutions can be assumed to emerge in near future, as regulative as well as normative instruments from authorities and stakeholders. Although the majority is unaware of its importance, the biodiversity issue is an evolving discourse, which GN should take advantage of on behalf of its members, and that way remain as pioneering actors. A clear strength of GN with regard to biodiversity is the connection of official authorities, which are obliged to work on biodiversity, and the companies which have the economic

advantages and which should seize the advantages from adopting biodiversity into CSR policy in a proactive manner. The expertise in biodiversity and ecosystem health, which will be necessary to employ in the actual work, can be found in the municipalities, in the region, in the state agencies, and in the universities with whom the Network already collaborates.

The way in which GN could engage their members in biodiversity actions could be by employing and modifying the current tools. As many controversies exist on biodiversity, it should be acknowledged that the issue can be approached in different ways. In accordance with the present focus of the environmental reports, which are in reality limited to inside the fence of the companies; the biodiversity efforts could take outset in the same place. The GN guidelines for agricultural reporting provide many points which are directly transferable to the considerations of companies in the process of environmental reporting.

Like the focus of efforts should generally be expanded to a broader scale and recognise stakeholders not only located in and around the company itself, so should biodiversity have a role when GN develops tools for LCA, along with carbon footprint. Also the concepts of offsetting of biodiversity impacts, and as well volunteer engagement in the biodiversity aspect of CSR should be introduced to the GN members.

References

Agger et al., 2005

Agger, P. 1980.

Arler, Finn. 2009. *Biodiversitet, videnskab, kultur, etik – Del 2*, Aalborg Universitetsforlag 2009.

Batker, D.; de la Torre, I.; Costanza, R.; Swedeen, P.; Day, J.; Boumans, R. & Bagstad, K. 2010. *Gaining Ground - Wetlands, Hurricanes and the Economy: The Value of Restoring the Mississippi River Delta*. Earth Economics: Tacoma WA.

Beck, Ulrich. 1992. *Risk Society: Towards a New Modernity*. London: Sage.

Blowfield, Michael & Murray, Alan. 2008. *Corporate Responsibility – a critical introduction*. Oxford University Press. New York.

Burke, L. and Logsdon, J. M. 1996. *How Corporate Social Responsibility Pays Off*. Long Range Planning, **29** (4): 495-502

By- & Landskabsstyrelsen (BLST). 2010. Kommunekort – frem mod 2010. <http://www.blst.dk/NATUREN/Biodiversitet/Kommunernes+opgaver/kommunekort.htm> (last accessed 30 July 2010).

Christensen, M. 2003. Strategisk miljødialog og roller i det frivillige miljøarbejde. Børsens Ledelseshåndbøger, Offentlig Ledelse, 4, August 2003.

Convention on Biological Diversity (CBD). 2005. Business and The 2010 Biodiversity Challenge: *Exploring Private Sector Engagement In The Convention On Biological Diversity*. prepared for the Business and the 2010 Biodiversity Challenge meeting in London, 20-21 January 2005, available at <http://www.cbd.int/doc/meetings/biodiv/b2010-01/official/b2010-01-02-en.pdf>

Convention on Biological Diversity (CBD) (2009). www.cbd.int

Convention on Biological Diversity (CBD) 2010. Business & Biodiversity [<http://www.cbd.int/business/>] Last accessed 30 July 2010.

Countdown2010. 2010. Happy IYB to Danish Municipalities: <http://www.countdown2010.net/article/happy-iyb-to-danish-municipalities>

Eva Juul Jensen. 2010. Senior International Advisor, Agency for Spatial and Environmental Planning, Ministry of the Environment; personal communication.

F&C Asset Management Plc (F&C). 2004. *Is biodiversity a material risk for companies?* <http://www.businessandbiodiversity.org/pdf/FC%20Biodiversity%20Report%20FINAL.pdf>

Formann, M. & Jørgensen, M. 2004. Evaluering af grønne lokale og regionale netværk med deltagelse af myndigheder og virksomheder. Copenhagen: Miljøstyrelsen.

Gore, Al. 2007. Presentation at Aalborg University, 15 January 2007.

Grin, J. 2006. 'Reflexive Modernisation as a governance issue, or: designing and shaping re-structuration'. In Voss, Jan-Peter; Bauknecht, Dierk & Kemp, Rene (eds.) *Reflexive Governance for Sustainable Development*. Cheltenham: Edward Elgar: 57-81.

Hansen, Keld. 2003. *Der er et yndigt land – en fattig natur i et rigt samfund: status over Danmarks natur*. Copenhagen: Gads Forlag.

Harrison, J.S.; Bosse, D.A. & Phillips, R.A. 2009. 'Managing for stakeholders, stakeholder utility functions, and competitive advantage' *Strategic Management Journal*, **31** (1): 58 – 74

Kramer, M & Kania, J. 2006. 'Changing the game: leading corporations switch from defense to offense in solving global problems'. *Stanford Social Innovation Review*, Spring: 20-27.

Kørnøv, Lone, Thrane, Mikkel, Remmen, Arne & Lund, Henrik. 2007. *Tools for sustainable development*. Aalborg: Aalborg Universitetsforlag.

- Lehmann, M., P. Christensen & J.M. Larsen (2005), 'Self-regulation and new institutions: the case of Green Network in Denmark' in Sanjay Sharma & Alberto Aragon-Correa (eds) *Environmental Strategy and Competitive Advantage*. Northampton, MA: Edward Elgar: 286-308.
- Madsen, H. & Ulhøi, J. P. 2001. 'Integrating Environmental and Stakeholder Management', *Business Strategy and the Environment*, **10** (2), 77–88.
- Millennium Ecosystem Assessment (MEA). 2005. *Ecosystems and Human Well-being: Ecosystems and Human Well-being: Current State and Trends, Volume 1*. Island Press.
- Myers, N. 1996. *Environmental services of biodiversity*, Proc. Natl. Acad. Sci. USA Vol. 93, pp. 2764-2769, April 1996
- Nellemann, C. and Corcoran, E. (eds). 2010. *Dead Planet, Living Planet – Biodiversity and Ecosystem Restoration for Sustainable Development*. A Rapid Response Assessment. United Nations Environment Programme, GRID-Arendal.
- Region of Southern Denmark (RSD). 2008. *Strategy for Sustainable Development*. Vejle: The Region of Southern Denmark.
- Scott, Richard W. 2001. *Institutions & Organizations*. Thousand Oaks: Sage.
- Suneetha, M. S. 2010. *Sustainability issues for biodiversity business*, Sustainability Science **5** (1):79–87
- The Economics of Ecosystems and Biodiversity (TEEB). 2010. *TEEB - The Economics of Ecosystems and Biodiversity Report for Business - Executive Summary 2010*. Malta: Progress Press.
- The European Commission (EC). 2010, *Options for an EU vision and target for biodiversity beyond 2010*, Brussels, 19.1.2010 COM(2010) 4 final
- Turner, R. K., Cooper, P., Paavola, J., Farber, P, Jessamy, V & Georgiou, S. 2003. *Valuing nature-lessons learned and future research directions*. Ecological Economics **46**, 493-510.
- United Nations Environment Programme (UNEP). 2007. *Global Environmental Outlook (GEO) 4*.
- Wilson, E.O. 1992. *The Diversity of Life*. New York: Harvard University Press