

# Environmental Leaders: Making a Difference. A Typology of Environmental Leaders and Recommendations for a Differentiated Policy Approach

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## ABSTRACT

In the literature, environmental leaders are often implicitly considered as a homogeneous group of companies. In addition, this proposition underlies much public policy-making that is aimed at supporting companies that 'go green'. A recent exploratory study conducted in the Netherlands however revealed that environmental leaders are often rather heterogeneous – even if they operate in the same sector. Differences are particularly related to incentives for and barriers to environmental leadership. In this paper we develop a typology of environmental leaders and provide recommendations for a differentiated and more effective public policy approach to supporting environmental leaders. Copyright © 2006 John Wiley & Sons, Ltd and ERP Environment.

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## Introduction

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THE LITERATURE CONTAINS MANY DETAILED ANALYSES OF COMPANIES THAT HAVE TAKEN THE LEAD in reducing the environmental impact of their activities, usually at levels beyond regulatory compliance. Such analyses have in particular been conducted under the umbrellas of environmental management, greening of industry, ecological/environmental responsibility, environmental stewardship, sustainable production, eco-management, clean technology, industrial ecology, corporate social responsibility and the like. Over the last decade a body of knowledge has been developed on, for instance, how environmental pressure from various types of economic activity is or can be reduced (e.g.

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Bansal and Howard, 1997; Ledgerwood, 1997; Verheul, 1999; Mac, 2002; Dieperink *et al.*, 2004), criteria for distinguishing 'environmental leaders' from their competitors (e.g. EWM, 1996), determinants of the adoption of 'clean technology' by environmental leaders (e.g. del Río González, 2005), competitive advantages of environmentally friendly production (e.g. Bonifant *et al.*, 1995; Dechant and Altman, 1994; Ngowi, 2001) and, more generally, on barriers and incentives that companies face when they 'go green' (e.g. Bansal and Roth, 2002; van Hemel and Cramer, 2002).

Although the above literature usually clearly distinguishes environmental leaders from 'environmental laggards', the group itself is implicitly considered to be rather homogeneous. Policy practice seems to be based on the same proposition, since often generic measures such as subsidies, technical assistance, regulation or sector-wide voluntary agreements are introduced to support companies that reduce the environmental impact they produce. In the Netherlands, for example, companies certified on ISO 14001 environmental standards could have a different approach when obtaining a permit, namely these companies are given more responsibility in choosing their own environmental goals. In this paper we start from the opposite proposition. Our motive is that we found no consensus in the literature about key barriers and incentives of environmental leaders. Not only do authors differ regarding the focus that they employ (exclusively economic or broader, e.g. including social factors), but also authors with the same focus sometimes report different types of barrier and incentive (see below). The literature however does not provide us with many clues regarding the sources of this variation: sector-specific characteristics, institutional context, country-specific characteristics or others.

In this paper we will demonstrate that, despite the heterogeneity among environmental leaders, it is possible to distinguish several subgroups of rather homogeneous environmental leaders.<sup>1</sup> We focus on companies that are *relative* leaders as compared to their competitors, instead of employing some norms of our own in order to select environmental leaders (see below). This paper complements a recent paper by Delmas and Toffel (2004), who suggest searching determinants of heterogeneity of environmental leadership in the institutional context of companies. Our analysis has taken a broader approach, and is based on a recent exploratory study in the Netherlands (see Tigchelaar, 2004). Each of the subgroups of environmental leaders that we distinguish has specific barriers to and incentives for environmental leadership. On the basis of our typology we offer some suggestions for a more focused policy aimed at supporting company initiatives to reduce the environmental impact of production activities, starting from the specific barriers and incentives that companies perceive.

This paper has the following structure. In the following section we will briefly discuss related studies that have examined barriers and incentives of environmental leaders. Based on this literature review we have developed an analytical model that is discussed in the following section as well. In the next section the methodological framework of our empirical study is described. The results of our empirical analysis of environmental leaders in the Netherlands are discussed in the fourth section. Then, in the fifth section, we investigate the policy implications of our analysis. We conclude this paper with the main conclusions and a discussion in the last section.

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## Related Studies and Conceptual Framework

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The exploration of incentives that companies have to green their operations and the barriers that they perceive when doing so (or planning to do so) has been the subject of several studies. Rivera and Delmas

<sup>1</sup> In this paper we focus on production activities, in line with most of the literature in this area. 'Greening' of transport and logistics has been analysed in other domains of science, usually in isolation from literature on 'green production'. This separation is typical of how companies organize their activities: usually transport and logistics on the one hand and production on the other are separate functions, although there is a trend towards further integration of these activities (see for a discussion Bowersox *et al.*, 1986, or Svensson, 2002).

(2004) provide an extensive overview of studies that relate to incentives and barriers to various forms of environmental leadership. Some of the literature that they discuss is based on empirical analysis, whereas another part consists of more normative reflections. The former type of literature varies significantly regarding the focus that is employed: broad, covering barriers and incentives from various types, or narrow, focusing on one or a few types of barrier or incentive and from a specific perspective.

In this section we briefly discuss some empirical studies on incentives for and barriers to environmental leadership. It should be noted that the perspectives employed differ significantly. Authors such as Cramer (2002) focus on 'rational' incentives for companies in terms of opportunities of value creation or cost reductions. Other authors, such as Bansal and Roth (2002), include 'social' incentives as well, such as the responsibility that some managers feel for the environment. Table 1 provides an overview of incentives that we found in the literature (which are as much as possible stated in the original terms). Often-reported incentives are efficiency gains, e.g. resulting from reductions in waste or use of water, energy or other resources; compliance with (future) regulations and enhanced legitimacy in the eyes from employees, customers, shareholders and other stakeholders (in addition to coercion and/or (technical) assistance by these stakeholders). These incentives are in part interrelated: enhanced legitimacy from customers may result in increased sales. Several factors are only mentioned incidentally in the literature, such as economies of scope that can be realized when greening (part of) the company. From the literature examined we cannot establish the reason for this variation: company size, differences in sectors or countries examined, types of incentives studied etc.<sup>2</sup>

Table 1 provides an overview of barriers as well, i.e. factors that inhibit companies adopting more environmentally friendly practices or technology. Again, some factors seem to be more generic than others. (Perceived) high costs (or negative cost-to-benefit ratios), knowledge gaps, absence of adequate environmentally friendly alternatives and a lack of co-operation by stakeholders (shareholders, suppliers, customers, governments etc.) are often-mentioned barriers. Scepticism by environmentalist groups in contrast is mentioned in only one study. The types of barrier reported in the literature are more diverse than in the case of incentives, and relate to economic aspects (e.g. marketing risks or availability of 'green' resources), governmental regulations, knowledge and social aspects (lack of co-operation or even opposition on the part of stakeholders).

What do we learn from Table 1? One, there is no consensus in the literature on incentives for and barriers to environmental leadership. Two, a wide range of barriers and incentives exists, which calls for an open research perspective. Three, a large part of the incentives and barriers are at least in part outside the scope of individual companies – i.e. are exogenous (e.g. lack of co-operation by customers or suppliers or contradicting regulations), depending on factors such as access to relevant stakeholders and market power. Governmental support may be required to reduce barriers or reinforce incentives. Four, insight is required into the determinants of variation in incentives and barriers.

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## Research Design

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### Research Strategy

We employed a case study design in light of the exploratory nature of our study. Our goal was theory building on determinants of barriers and incentives of environmental leaders, rather than testing specific

<sup>2</sup> In this context it is interesting to note that, according to the literature, environmental leaders are usually companies that financially perform well (e.g. Bhat, 1998; Miller and Laurenti, 2001). However from the literature it does not become clear what the nature of the relationship between environmental leadership and financial performance is.

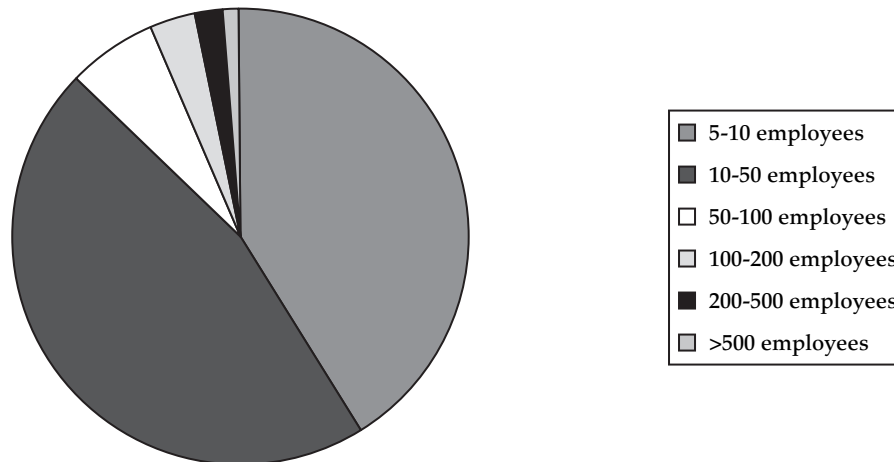
Source	Barriers	Incentives	Sector/industry
a. Foster (1994)	<ul style="list-style-type: none"> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- cost-efficiency</li> </ul>	<ul style="list-style-type: none"> <li>- computer industry</li> </ul>
b. Christie <i>et al.</i> (1995)	<ul style="list-style-type: none"> <li>- long payback period</li> <li>- lack of capital</li> <li>- cleaner production not proven</li> <li>- cheaper end-of-pipe technology available (as an alternative to the adoption of cleaner production technology)</li> </ul>	<ul style="list-style-type: none"> <li>- compliance with regulations</li> <li>- costs savings/efficiency</li> <li>- increased competitiveness</li> <li>- corporate responsibility</li> <li>- pressure from customers</li> <li>- anticipation of regulatory demands</li> </ul>	<ul style="list-style-type: none"> <li>- 30 chemical and engineering companies that invested in 'clean production' techniques</li> </ul>
c. Shrivastava (1995)	<ul style="list-style-type: none"> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- cost reduction (improved productivity of labour, capital and resources)</li> <li>- compliance with regulations</li> <li>- postpone some regulatory costs</li> </ul>	<ul style="list-style-type: none"> <li>- 3 M Corporation</li> </ul>
d. Quinn (1998)	<ul style="list-style-type: none"> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- cost savings/efficiency</li> <li>- legal compliance</li> <li>- PR and image</li> <li>- customer satisfaction</li> <li>- commercial advantages</li> <li>- continual improvement</li> <li>- marketing</li> <li>- shareholder satisfaction</li> <li>- formalization</li> </ul>	<ul style="list-style-type: none"> <li>- 39 companies from various sectors that had implemented an environmental management system in the UK and the USA</li> </ul>
e. Miller and Laurenti (2001)	<ul style="list-style-type: none"> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- cost-efficiency</li> <li>- attract new customers</li> <li>- enhanced share prices</li> </ul>	<ul style="list-style-type: none"> <li>- three case studies among a carpet plant, copier producer and a hotel</li> </ul>
f. Bansal and Roth (2002)	<ul style="list-style-type: none"> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- improved competitiveness</li> <li>- enhanced legitimacy (avoid bad publicity or dissatisfaction among employees, improve relations with banks and government)</li> <li>- environmental responsibility of employers/managers</li> </ul>	<ul style="list-style-type: none"> <li>- not specified</li> </ul>

*Continued*

Source	Barriers	Incentives	Sector/industry
g. Blonk (2002)	<ul style="list-style-type: none"> <li>- sustainability is not a selling point</li> <li>- marketing risks</li> <li>- cost-to-benefit ratio</li> <li>- inadequate availability of environmentally friendly resources/suppliers</li> <li>- lack of co-operation by other actors in the supply chain (or lack of power to force them to co-operate)</li> <li>- inadequate support by government (choice of instruments)</li> <li>- scepticism or contra-productive actions of environmentalist groups</li> <li>- confusion about and inconsistency of regulations</li> <li>- lack of knowledge of market opportunities, environmental impact at supply chain level, best practices, profitability, future public policy and environmental impact of proposed measures</li> <li>- dependence of environmental reform on preferences and commitment of individuals</li> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- reduce negative image</li> <li>- shareholders who demand corporate responsibility</li> </ul>	<ul style="list-style-type: none"> <li>- 15 Dutch environmental leaders from different sectors, mainly from food and construction sectors</li> </ul>
h. Cramer (2002)	<ul style="list-style-type: none"> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- economic value creation (higher efficiency, new markets)</li> <li>- value creation by means of improved reputation (more trust by customers, employers, banks, government etc.)</li> <li>- value creation through synergy between company functions (economies of scope, internal coherence)</li> </ul>	<ul style="list-style-type: none"> <li>- 19 Dutch companies with corporate social responsibility programmes from a wide range of sectors (food, education, paper, banks, chemicals, software etc.)</li> </ul>
i. van Hemel and Cramer (2002)	<p>Most influential barriers:</p> <ul style="list-style-type: none"> <li>- not perceived as responsibility</li> <li>- no clear environmental benefit</li> <li>- no alternative solution available</li> </ul>	<p>Most influential <i>external</i> stimuli:</p> <ul style="list-style-type: none"> <li>- customer demands</li> <li>- government regulation</li> <li>- industrial sector initiatives</li> </ul> <p>Most influential <i>internal</i> stimuli:</p> <ul style="list-style-type: none"> <li>- innovational opportunities</li> <li>- increase of product quality</li> <li>- new market opportunities</li> </ul>	<ul style="list-style-type: none"> <li>- 77 SMEs (&lt;200 empl.) in the Netherlands from a broad range of industries (considering) engaging in ecodesign (1997)</li> </ul>

<p>j. Hilson and Nayee (2002)</p>	<ul style="list-style-type: none"> <li>- shortage of financial, technological and informational resources</li> </ul>	<ul style="list-style-type: none"> <li>- input/support from government (knowledge)</li> <li>- input/support from other stakeholders (educational facilities, international organizations)</li> <li>- improved relations with stakeholders</li> <li>- possibility to identify 'hidden costs'</li> <li>- compliance with regulations</li> <li>- reduced operating costs/improved efficiency</li> <li>- proactive response to regulations</li> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- adoption of environmental management systems in the mining industry in Canada and Australia</li> </ul>
<p>k. PWC (2003)</p>	<ul style="list-style-type: none"> <li>- lack of objective criteria for sustainability.</li> <li>- difficult to develop a business case for sustainable companies</li> <li>- limited access to knowledge of sustainability</li> <li>- difficult to organize co-operation between companies</li> <li>- legislation is not adjusted to sustainable companies</li> <li>- free-riders discourage frontrunners</li> <li>- shareholders who require a minimum return on investment</li> <li>- not treated</li> </ul>	<ul style="list-style-type: none"> <li>- 45 companies from a wide variety of sectors in the Netherlands</li> </ul>	
<p>l. Delmas and Toffel (2004)</p>	<ul style="list-style-type: none"> <li>- high transaction costs</li> <li>- free-riding behaviour of competitors</li> </ul>	<ul style="list-style-type: none"> <li>- coercive and normative pressure by stakeholders (governments, regulators, customers, competitors, suppliers, community and environmental interest groups, and industry associations)</li> <li>- favourable leadership values and managerial attitudes</li> <li>- regulations</li> <li>- technical assistance of governments</li> <li>- market concentration</li> <li>- good contacts with neighbours</li> <li>- pressure from stakeholders</li> <li>- beliefs, values, attitudes of top managers</li> <li>- compliance with regulations</li> <li>- improved efficiency</li> <li>- enhanced reputation</li> <li>- price premiums</li> <li>- technical assistance</li> <li>- regulatory flexibility/pre-emption of regulations</li> </ul>	<ul style="list-style-type: none"> <li>- broad survey of the literature, covering many sectors/countries</li> </ul>
<p>m. Rivera and Delmas (2004)</p>	<ul style="list-style-type: none"> <li>- high transaction costs</li> <li>- free-riding behaviour of competitors</li> </ul>	<ul style="list-style-type: none"> <li>- broad survey of the literature, covering many sectors/countries</li> </ul>	

**Table 1.** Barriers and incentives reported in the literature



Source: based on data from CBS (Statistics Netherlands), available from [www.cbs.nl/en-GB/menu/cijfers/statline/toegang/default.htm](http://www.cbs.nl/en-GB/menu/cijfers/statline/toegang/default.htm)

**Figure 1.** Dutch companies by employment size (2004)

hypotheses. For this type of exploratory research, case studies are generally considered an adequate strategy (see, e.g., Eisenhardt, 1995).

## Sample

The study examined small and medium-sized companies (SMEs) as well as larger companies located in the Netherlands. SMEs were in particular considered interesting in light of the fact that in particular large, international companies 'go green'; environmental leadership is scarcer among SMEs (Vermeulen, 2002). Yet, in most countries SMEs make up the bulk of companies (see Figure 1 for an illustration regarding the Netherlands). From a policy perspective it is therefore interesting to examine whether or not SMEs face specific barriers to or incentives for environmental leadership.

In order to select sectors of industry that would be examined we used a recent study on the environmental impact of economic activities (Nijdam and Wilting, 2003). We decided to focus on sectors that contributed the most to environmental degradation, since from a policy perspective environmental leadership in these sectors is the most interesting. The study of Nijdam and Wilting (2003) assessed environmental pressure from seven consumption domains, i.e. leisure, hygiene, labour, clothing, housing, furnishing and food. Environmental pressure was measured in land use, greenhouse effect (CO<sub>2</sub> emissions), acidification, nitrification, smog, wood extraction, fish extraction, road traffic noise and pesticides (the 'ecological footprint' indicators). Table 2 shows the contribution of the seven consumption domains to these types of environmental degradation.<sup>3</sup>

Table 2 shows that food and leisure make up the largest contribution to environmental degradation, which is mainly explained by the large share of these consumption domains in total household expenditures. We decided to focus on the top five domains that contribute to environmental degradation in

<sup>3</sup>The study by Nijdam and Wilting (2003) focused on both direct environmental pressure (e.g. emissions from car use) and indirect environmental pressure (i.e. environmental effects preceding and following after actual use by consumers, including for instance environmental effects from transport and distribution of products and from waste processing).

Consumption domain	Aspects of environmental degradation										
	Land use	Greenhouse effect	Acidification	Nutrification	Smog	Wood extraction	Fish extraction	Water extraction	Road traffic noise	Pesticides	Total
1 Food	1	1	1	1	2	2	1	1	3	1	14
2 Leisure	2	2	2	2	1	1	2	2	1	3	18
3 House use	3	5	4	3	4	3	4	4	4	2	36
4 Clothing	3	5	3	5	5	5	3	3	4	4	40
5 House	5	3	5	6	5	4	5	5	6	5	49
6 Labour	6	7	5	7	3	6	6	7	2	5	51
7 Hygiene	6	7	3	7	7	6	6	5	6	5	58

**Table 2.** Ranking based on contributions of consumption domains to aspects of environmental degradation (the Netherlands) 1 = largest contribution, 7 = smallest contribution. Environmental data 1995, household expenditures 2000. Source: Nijdam and Wilting, 2003.

Top five consumption domains with highest env. pressure	Products with highest env. pressure within top five consumption domains	Sectors involved
Food	Meat	Meat sector
Leisure	Recreational transport, holidays	Travel sector
House use	Furniture and garden	Furniture sector and garden sector
Clothing	Clothes	Clothing sector
Construction	Construction and maintenance	Construction sector

**Table 3.** Selected sectors of industry for the case studies  
Source: Nijdam and Wilting 2003.

the Netherlands and to select product groups within the top five domains with the largest environmental pressure. This resulted in a selection of six sectors of industry (see Table 3).

Within the sectors that were selected we looked for environmental leaders. For this purpose we employed no strict criteria for 'green production', since we were primarily interested in companies that are *perceived* as green, as compared with their competitors. We employed the reputation method for identifying environmental leaders.<sup>4</sup> This means that actors with a good overview of the sectors examined (e.g. interest groups or environmentalist organizations) were asked to indicate companies that have the reputation of being environmental leaders and subsequently to indicate in what ways these companies were considered as leaders. We employed multiple sources in order to triangulate the results of the reputation method (including professional magazines, press releases about environmental awards that have been granted to companies and information provided by selected companies, such as annual reports and information on websites). These sources pointed to the same companies as the results of the reputation method (for more details, see Tigchelaar, 2004). In total 25 companies were selected for further

<sup>4</sup>The reputation method originates from administrative and organizational sciences, as a method to measure power (Tannenbaum, 1968; Tannenbaum and Cooke, 1979; Derksen, 1985). We used a simplified form, only asking peer groups about perceived leaders, in this study for identification purposes.



Sector	No. of environmental leaders acc. to reputational method	Response	Total No. of companies in sector
Clothing	5	2	1 558
Construction	4	4	15 000
Furniture	4	1	2 553
Garden	4	4	3 467
Travel	4	2	200
Meat	4	4	7 428

**Table 4.** Environmental leaders: response rates and sector size<sup>1</sup>

<sup>1</sup>Sector size concerns those parts of the value chain (from raw materials through retailing) that are located in the Netherlands.

examination. Eight refused to co-operate with an interview, of which two indicated that they were over-pressed for information about their environmental leadership. Table 4 provides an overview of response rates as well as the total number of companies in the sectors examined. Table 5 provides some information about the companies examined.

The sectors selected as well as the companies that were examined in detail are not representative of all environmental leaders. Given the exploratory nature of the study this is no problem; we aimed to develop a typology of environmental leaders that can be tested in further research. It implies however that our results are indicative rather than generalizable.

### Data Collection

Data were collected by means of interviews, using a semi-structured questionnaire. First, respondents were asked to mention the main incentives for and barriers to environmental leadership. Second, respondents were asked how governments and other stakeholders could reduce barriers that they mentioned or reinforce incentives that they reported (if considered necessary). Then, respondents were confronted with a list of instruments for governmental support of environmental leadership that we drew from the literature. This enabled them to complement their earlier responses. Finally, respondents were asked to prioritize the list of policy instruments. This questionnaire set-up was preferred to less structured questionnaires in which companies are asked to tell about their experiences with their environmental leadership and the events that resulted in their decision to green their business. Although from such 'narratives' incentives and barriers and other relevant information can be deduced, this approach requires more interpretation and was therefore not preferred by us.

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### Incentives Of and Barriers To Environmental Leadership in the Netherlands

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We can now address the incentives and barriers mentioned by our respondents. The incentives and barriers mentioned show a broad variation. For the sake of clarity we classified barriers and incentives into a few groups. We realize that our classification is merely a first effort. Although we avoided as far as possible overlap between categories, our simplification results in hiding relations between different types of barrier and incentives similar to what we observed above. In the literature we could not find a classification that was more useful in this respect. For our purpose, which is mainly to show the diversity of incentives and barriers, the classification suffices.

Company	No. of employees	Characterization	Backgrounds of environmental leadership
Bouwcarrousel	10	demolisher and supplier of second-hand building materials	founded to stimulate reuse of building materials; the only company involved in these activities at the moment
Bo-Weevil	6	importer of ecological rough cotton, fabrics, clothing and thread	first company to launch an ecological T-shirt; market leader in the Netherlands for ecological cotton; founded to make ecological cotton available
De Groene Weg slagerijen	60	store chain of ecological butchers	originated from the first ecological butcher in the Netherlands; nowadays the largest ecological butcher
De Hoeve BV	2	co-operation between certified pig-breeders	first co-operation to launch certified pork
Dumeco	4000–4500	producer of meat and meat products	largest meat processor in the Netherlands and participant in a project for sustainability
Grüntjes Laanboomkwekerij	2	tree nursery	one of the first two tree nurseries to be ecolabel certified by Stichting Milieukeur
Hartong Bouwbedrijf	15	building contractor specialized in ecological building	one of the few companies specialized in ecological building
Hoogveen Bollenkweker	1	ecological bulb grower	one of the few completely ecological bulb growers
Intratuin	4000	store chain of garden centers	started a project, in co-operation with an NGO, to improve their environmental impact
Koninklijke Auping	300	producer of beds and bedroom furniture	frontrunner in ecological design
Kuyicihi	15	producer of ecological fashion	founded by a NGO to launch ecological and socially responsible fashion
Monique Jurrius boomkwekerij	7	tree nursery	one of the first two tree nurseries to be ecolabel certified by Stichting Milieukeur
Oad-reizen	450	coach company, travel agency and tour operator	participant in the project 'Sustainable tourism'
TUI-Nederland	2200	largest travel agency in the Netherlands	participant in the project 'Sustainable tourism', appointed as most sustainable travel agency by a consumer organization
Unidek	650	producer of house fronts, roofs and floors of polystyrene	participant in a project of environmental leaders; developed environmentally friendly building systems
Van den Hengel veehouderij	1	cattle-breeder, pig-breeder	won a sustainability award for a new compost based fertilizer method
Van der Breggen architecten	15	architect, specialized in sustainable building	specialized in sustainable building, wood constructions and flexible building; involved in the first sustainable house in the Netherlands

**Table 5.** Details of companies examined

Incentive	How often mentioned? (n = 17)	Mentioned in other empirical studies? (Table 1)	If yes, corresponding reference? (Table 1)
<i>Financial incentives</i>			
Financial support by governments	8	No	
Savings on energy and resources	6	Yes	a, b, c, d, e, h, j, m
Synergy from co-operation with NGOs	6	Yes	j (*)
Scrutinizing production processes for environmental improvement results in other (efficiency) gains (side-effect)	4	Yes	j
Savings because of co-operation	2	Yes	j (*), l (*), m (*)
Economies of scope (synergy with other processes)	2	Yes	h
Synergy from co-operation with other companies (joint purchase, sharing knowledge etc.)	2	Yes	h
Higher profit margin for green companies	0	Yes	m (*)
<i>Improving company image</i>			
Higher brand consumer awareness	11	Yes	d (*)
Good contacts with NGOs	9	No	
Internal and external image improvement	5	Yes	d, f, g, h (*), m
Support from neighbouring households	0	Yes	l
<i>Legitimacy</i>			
Environment is reason for existence	6	No	
Prevent risk on reduced legitimacy in the future	4	Yes	f
Anticipate future legislation	3	Yes	b
Prevent negative publicity	1	Yes	f
<i>Support from other actors</i>			
Support from media (attention, free publicity)	6	No	
Support from consultants (knowledge provision)	3	No	
Incentives of customers (social housing organizations)	2	Yes	h (*), j (*), i (*)
Support from regional government (not subsidies, but positive attention, co-operation, knowledge and the like)	2	Yes	j, l, m
<i>Market opportunity</i>			
Opportunity for niche market (different customers)	6	Yes	e (*), h (*), i (*)
(Near) monopoly in ecological market	5	No	
To distinguish from competitors in existing markets	4	Yes	e (*), h (*), i (*)
<i>Other incentives</i>			
Improved working climate (internal and in relations with customers)	6	Yes	f (*)

**Table 6.** Incentives mentioned by respondents and comparison with the literature (\*) indirectly mentioned in the literature.

### Incentives for Environmental Leadership

Table 6 summarizes the incentives that the 17 respondents mentioned. These incentives are compared with the results from similar empirical studies mentioned in the literature (summarized in Table 1) as well. Our suggestion that environmental leaders form a rather heterogeneous group is confirmed by our results; not only does the list of incentives that we found differ in part from the literature, but also companies were not unanimous about incentives. Remarkably, two out of the three incentives that were most frequently mentioned by our respondents were not found in the literature (i.e. financial support by

governments and good contacts with NGOs). Conversely, some of the incentives mentioned in Table 1, such as pressure from shareholders, were not found in our cases.

Incentives were broadly defined by our respondents. Some incentives are reasons to 'go green' whereas others justify the decision to 'stay green'. There appeared to be multiple perspectives on an incentive such as 'improved legitimacy'. To some respondents environmental leadership is a proactive way of improving legitimacy, whereas to others it is a way to reduce the risk of (or damage caused by) deteriorated legitimacy.

Five respondents mentioned advantages associated with a dominant position in the niche market for 'green products' as an incentive to environmental leadership. This incentive – environmental leadership as a tool to gain dominance in a particular market niche – was not found in the literature. Instead, Delmas and Toffel (2004) report an opposite relation between market concentration and environmental leadership, namely that market concentration within an industry is a favourable factor affecting environmental leadership.

A higher profit margin for 'green products' is an incentive that is incidentally mentioned in the literature but that was not experienced by most of our respondents (14 out of 17).

### Barriers to Environmental Leadership

In Table 7 the barriers mentioned by our respondents are summarized. It shows that respondents were not unanimous about barriers, either. For instance, various barriers related to governmental policy were mentioned, but five respondents indicated they faced no such barrier at all. Not all barriers that were found in the literature were mentioned by our respondents. None of them for instance perceived resistance from shareholders. Our results bear most resemblance with those of Blonk (2002), who presented a relatively extensive list of barriers.

### Determinants of Incentives and Barriers

Concluding, most of the barriers and incentives mentioned in the literature were confirmed by our respondents. This indicates that the Netherlands does not form an anomaly in this context, in other words, that national characteristics such as regulations do not result in unique and country-specific motives for and barriers to environmental leadership. However, only three incentives and two barriers were experienced by more than half of the respondents. The three incentives mentioned were financial support from governments, higher brand awareness and contacts with NGOs. Often mentioned barriers were small demand for sustainable products and high costs. We assume that these five factors are more or less typical of environmental leadership. The other incentives and barriers however may be related to sector, company or other characteristics. In order to identify determinants of this variation, we first analysed which incentives and barriers were sector specific (see Table 8). By sector specific we mean incentives and barriers only or mainly appear in these sectors.

Sector differences however explain only part of the variation found. We subsequently analysed in more detail the characteristics of the 17 companies that were interviewed regarding a broad range of aspects related to the company itself as well as its environment.<sup>5</sup> Aspects that were examined include for instance company size, perceptions of 'green production', the importance that is attached to it, production processes, the type of environment in which environmental leaders are active (competitors, customers)

<sup>5</sup>This approach – looking at company characteristics as well as at its environment – is in line with theoretical work on factors influencing environmental leadership by Flannery and May (1994). The difference is that we did not start from the theory, like Flannery and May, but started from the empirical data, in a way that resembles the grounded theory approach (see e.g. Strauss and Corbin, 1990).

Barrier	How often mentioned? (n = 17)	Mentioned in the literature?	If yes, corresponding reference? (Table 1)
<i>Barriers in supply chain</i>			
Availability of resources for green production	8	Yes	g, j
Lack of power in supply chain to force others to co-operate	6	Yes	g, k (*)
Low co-operation within supply chain	5	Yes	k
Lack of good ecological production methods	3	Yes	b
Ecological product of inferior quality	3	No	
Only one subcontractor (i.e. market power imbalance)	1	No	
<i>Barriers caused by governmental policy</i>			
Rigid rules obstruct innovation	7	Yes	g (*), k (*)
Passive government	5	Yes	g (*)
Too many rules	3	Yes	g (*)
Inadequate enforcement of environmental regulations, favours trespassers and disadvantages environmental leaders	3	No	
Inadequate subsidies (too low or too much focused on knowledge instead of production)	2	Yes	g (*)
Support by government ineffective due to lack of knowledge of green production/environmental leadership	2	Yes	k (*)
<i>Economic barriers</i>			
Modest demand for sustainable products	11	Yes	g, k (*)
Increased costs	9	Yes	g (*), k (*), m
Customer not willing to pay for sustainability	8	Yes	g (*), k (*)
Limited growth opportunities due to modest demand	4	No	
Free-riders profit strains	0	Yes	k (*), m (*)
<i>Barriers by a lack of knowledge<sup>1</sup></i>			
Lack of knowledge by employees	6	Yes	g (*), j (*), k (*)
Employees not eco-minded	5	Yes	g, j (*), k (*)
Knowledge available is not specific enough for company in question	4	Yes	g (*), j (*), k (*)
General overview of opportunities to reduce environmental impact is lacking	4	Yes	g, j (*), k (*)
Lack of knowledge by customers	2	No	
<i>Barriers by stakeholders</i>			
Sceptical approach to environmental leadership by NGOs	1	Yes	g
<i>Other barriers</i>			
Negative image of sustainable products	5	Yes	g (*)
Too many eco-labels	3	No	
Reticent sector	2	No	

**Table 7.** Barriers mentioned by respondents and comparison with the literature (\*) indirectly mentioned in the literature.

<sup>1</sup>Five respondents did not perceive any knowledge barriers.

Sector	Incentives	Barriers
Meat ( <i>n</i> = 4)	– preventing risk of reduced legitimacy in the future	– lack of power in supply chain to force others to cooperate – rigid rules obstruct innovation
Construction ( <i>n</i> = 4)	– incentives from institutional customers (social housing organizations)	– lack of power in supply chain to force others to cooperate – passive government – availability of resources – rigid rules obstruct innovation – support by government ineffective due to lack of knowledge of green production/environmental leadership – routines in sector
Clothing ( <i>n</i> = 2)	–	– modest demand for sustainable products – negative image eco-products – reticent sector
Garden ( <i>n</i> = 4)	– support from consultants – support from media	– availability of resources – availability of technology – too many eco-labels
Travelling ( <i>n</i> = 2)	–	– general overview of opportunities to reduce environmental impact is lacking – negative image eco-products – passive government

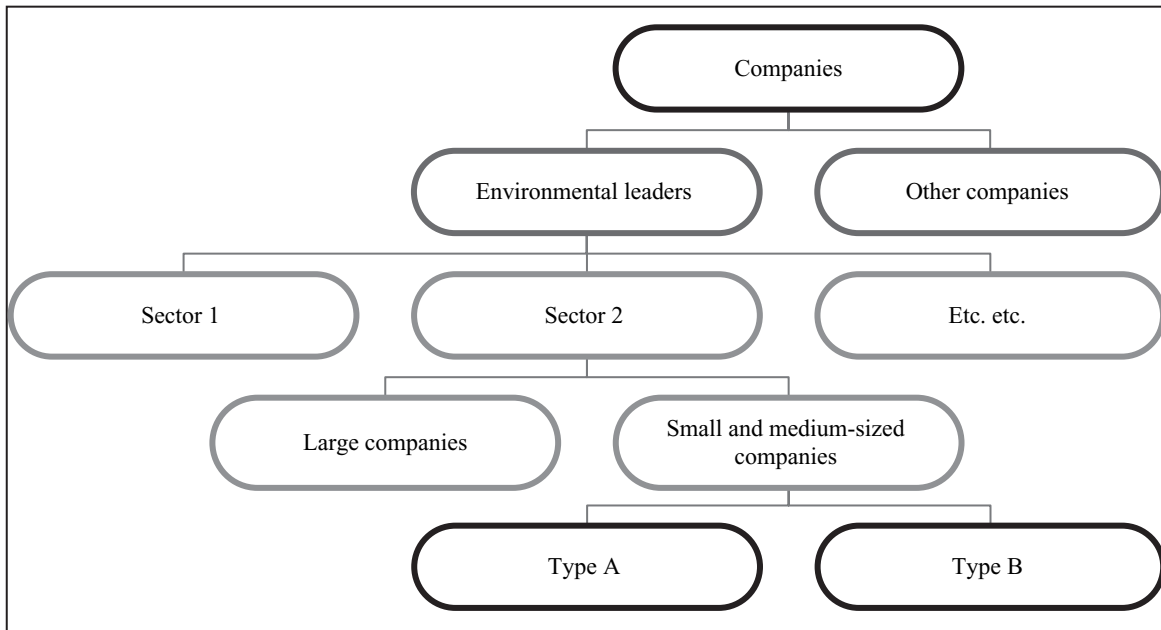
**Table 8.** Incentives and barriers experienced per sector

etc. This resulted in an iterative process, in which variables that seemed to be of interest were related to the data: did companies that had a similar score on a variable show commonalities regarding incentives for and barriers to environmental leadership that were not explained by the sector in which they operate? The structure of the analysis is depicted by Figure 2. Eventually this approach finally resulted in a typology of companies that is described by Table 9. The fact that we identified three rather than another number of typical environmental leaders results from our iterative and inductive analysis approach, not from a desire to keep our typology restricted to three typical environmental leaders.

The incentives and barriers that were not related to sector differences can be connected to differences in our typology of environmental leaders. Concluding, we identified types of barriers and incentives at three levels of aggregation: those that are more or less general to all environmental leaders examined; those that are sector specific and incentives and barriers that vary with the type of environmental leader (based on characteristics of the company and its context). The typology that we developed at the level of aggregation of individual companies is new and is therefore our contribution to the literature. Considering the fact that our sample of sectors is not representative, the typology is mainly indicative and needs to be tested in more sectors.

## Towards a More Focused Public Policy Approach to Environmental Leaders

Our analysis shows that environmental leaders form a heterogeneous group of companies. What does this imply for governmental policy aimed at greening production? In the introduction to this article we suggested that governments might facilitate environmental leadership by reducing barriers and enhancing incentives. Given the heterogeneity of environmental leaders, which is reflected in the variety in incentives and barriers they perceive, generic measures do not seem to be very effective. Generic subsidies for environmental leaders for instance run the risk of subsidizing environmentally friendly



**Figure 2.** Structure of the analysis of determinants of environmental leadership

behaviour that was already intended, something that was for instance found in the Netherlands (Vermeulen, 1992). Instead, we propose that governmental support and assistance is focused more on specific barriers and incentives that companies face. In the Netherlands, the government<sup>6</sup> has opened an office that provides support to environmental leaders according to their specific needs and problems. Since 2003 the office has assisted 52 companies, mainly with issues where regulations were contradictory and with financial issues (SenterNovem, 2005). In our view such a policy approach is a useful first step towards a more differentiated policy support of environmental leaders. However, this approach does not prevent problems such as subsidizing already planned investments.

For a more systematic support of environmental leaders the three-tier classification of incentives and barriers discussed above (generic, sector specific and specific to environmental leader-type) offers a useful framework. In addition our classification allows for a prioritization of governmental support. As we indicated earlier, SMEs are an interesting target group due to their volume. Our classification allows for a focused support of these types of company.

But how should environmental leadership be promoted? In our study we asked environmental leaders for the types of support that they would recommend for raising the attractiveness of environmental leadership. Some of these recommendations are related to perceived barriers and incentives, whereas others are mentioned as complementary measures (apparently of less importance). Table 10 summarizes our recommendations for a more focused policy (except for recommendations that are sector specific), which is mainly based on our respondents' suggestions. In some cases where the sample was not representative we made small corrections. This for instance was the case with the latter suggestion of more

<sup>6</sup>The Department of Housing, Spatial Planning and the Environment, in cooperation with the Departments of Agriculture, Nature and Food Quality, Economic Affairs, Transport, Public Works and Water Management and Foreign Affairs.

	Large companies (>100 employees) (n = 6)	SMEs – type A (n = 6)	SMEs – type B (n = 5)
Company characteristics	sustainable in response to customers' demand sustainability is a secondary goal people, planet, profit orientated <sup>2</sup> sustainability by organizational change	sustainable out of conviction sustainability is the main goal planet orientated sustainability from product development. mostly ecological	sustainability as a commercial opportunity sustainability is a secondary goal profit orientated sustainability from product development. not completely ecological
Characteristics of companies' environment	mainstream market large market-share	niche market small market-share in total market. large market-share in niche	mainstream market small market-share
Companies in the sample	Koninklijke Auping, Dumeco, Intratuin, TUI-Nederland, OAD, Unidek	De Groene weg, Bouwcarrousel, Hartong bouwbedrijf, Bollenkweker Hoogeveen, Bo-weevil, Kuyichi	De Hoeve BV, boomkwekerij Grüntjes, Boomkwekerij Monique Jurrius, Van den Hengel, Van der Breggen Architecten
Incentives	savings on energy and resources internal and external image improvement good contacts with NGOs economies of scope (synergy with other processes)	environment is reason for existence good contact with NGOs improving working climate (internal and in relations with customers) (near) monopoly in ecological market	opportunity for niche-market (different customers) to distinguish from competitors in existing markets
Barriers	lack of knowledge by employees customer not willing to pay for sustainability shortage of knowledge by customer	increased costs limited growth opportunities due to modest demand	customer not willing to pay for sustainability modest demand for sustainable products no incentives from good contacts with NGOs

**Table 9.** Typology of environmental leaders<sup>1</sup>

<sup>1</sup> We recognize that our definition of large companies and SMEs is in line with that of Statistics Netherlands (CBS), but not the definition for the European Union, which is based on a maximum of 250 employees (see CEC, 2003).

<sup>2</sup> Derived from the regularly used triplet people, planet and profit, which is used in programmes for social corporate responsibility.

sustainable purchases by governments; this was not a real issue for type A companies, but the sample notably contained companies producing consumer goods. Table 10 indicates the relative importance of each of the recommended measures to the three types of environmental leader, but *not* the relative importance of a measure in comparison to the other measures.

It is interesting to link the recommendations to the various characteristics of the three distinguished types of leader. The differences between the larger company group and the two SME types A and B may be the most important here. Some of the suggested measures for supporting environmental leaders are



Measure to support environmental leadership	Relevant for		
	large companies	SME – type A	SME – type B
The government should reduce the variety of eco-labels and support multi-level schemes	+	++	+++
The government and NGOs should improve acquaintance with leading companies and their products by publishing lists of environmental leaders (positive campaigns)	++	+++	++
The government should create forms of compensation for extra costs incurred by leaders (such as eco-labelling costs)	+++	++	+++
Customers should be more intensely informed about sustainability by NGOs or government	++	++	+
The government should subsidize innovation experiments instead of research and feasibility studies	+	++	+
Governments should more systematically buy sustainable goods themselves	++	+	+

**Table 10.** Recommended measures for supporting environmental leadership, indicated by respondents

far more relevant for SME leader types (e.g. the recommendations regarding eco-label systems). Others are more important for large environmental leaders. As shown in Table 8, large leading companies being market leaders are often strongly exposed to external pressures, keeping them on the ‘leader track’ and with ample financial and expertise resources. They can by and large stay on the ‘leader track’ by their own effort. However they still focus primarily on economic support by governments, which may be due to the pragmatical rather than idealistic motive for greening their production that distinguishes them from ‘type A’ SME leaders. The relative importance of financial/economic support for ‘type B’ SME leaders can be explained in the same way.

In addition to these measures, the companies in our study also suggested various sector specific measures, but they have a common denominator: both governments and NGOs may take a strong lead in raising market demand, for example by demanding higher levels of sustainable building, or by informing customers about eco-friendly alternatives, such as sustainable travelling. On the other hand, in contrast to the positive campaigns, some suggest the opposite: forms of blaming and shaming of stragglers as a form of negative campaigning.

## Discussion and Conclusions

In this article we have explored the frontrunners in the development towards sustainable production and consumption. Separately addressing frontrunners, mainstream companies and stragglers has been given some attention in environmental policy in recent years, but the group of frontrunners itself has hardly been studied apart. Yet, many acknowledge that environmental leaders may play an essential role in creating progress on the environmental agenda. In the practice of the market place these leaders prove that high performance with clean production processes and clean products is in fact feasible, profitable and demanded by consumers. These companies may play an essential role in convincing mainstream companies to adopt their practices. Some scholars suggest that mainstream companies do not automatically follow these examples, due to a deep gap (Egmond *et al.*, 2005) caused by the different characteristics of these groups.

In this study, however, we have shown that the leader group is not to be seen as one homogeneous group. We can at least distinguish between three very different groups, varying in their scope, market position, values and practices: large companies that green their business primarily in response to customers' demands; SMEs that consider environmental leadership as a commercial opportunity and SMEs that are green from an ideological motive (see Table 9 for more details). Paying special attention to the specific needs of the three types of environmental leader is essential for the promotion of sustainable practices in the market. At least this group could be helped by implementing suggested measures (Table 10) in order to remove some of their specific environmental leader disadvantages.

However, their possible role as appealing to other companies could also very well be increased. The three types may all appeal to different segments of companies in the mainstream group. This calls for further research also focussing on variance within the mainstream group: do 'laggards' face the same types of barrier? Most barriers and incentives are not related to first and second mover disadvantages. Thus, identifying and reducing barriers and making incentives more attractive for these groups also may increase the group of leaders.

In this article we have reported a first exploratory study in this field. We believe that more research into the segmentation of target groups of environmental policies for sustainable production and consumption is needed. Special attention should be given to methods for identifying leaders, to more sectors than studied here and also to special needs for companies at different positions in the value chain. Part of this analysis could be a ranking of policy measures aimed at supporting environmental leaders according to their perceived importance. On the other hand, also based upon our discussions with members of governments and NGOs, the issue of segment-specific policy instruments and strategies is still very poorly elaborated and in need of new creative approaches.

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