

# **Small and Medium-Sized Enterprises and the Environment**

**BUSINESS IMPERATIVES**

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To John Worontschak  
and our lovely sons,  
Max and Zak

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The main lessons that have been learned during this period are that the majority of the SMEs that are the focus of this attention have yet to fully appreciate the reasoning behind the initiatives. This would explain why recruitment for demonstration programmes is so problematic and why assistance bodies and representative organisations, such as the chambers of commerce, report such low proactive interest in environmental matters. This is partly due to the limited relevance of environmental protection legislation for small companies but is also due to the supply-led nature of funding for SME assistance. Much of the funds are awarded to bodies that understand how to obtain these funds. A demand-led system should ensure a much higher take-up rate from companies that have taken the trouble to explain their needs to fund managers.

A combination of consistency, co-ordination and vision will radically transform small-business environmental improvement programmes in the UK. A regional body that has joint responsibility for sustainable development and economic growth, including inward investment, would be able co-ordinate such a programme, providing that it adopted a progressive style of management. While this would require widespread co-operation among the diverse range of fund managers, all parties would ultimately gain from co-operation and the pooling of experience and knowledge. This would allow projects such as the NCBE's BEDP programme to cause ripples far beyond the businesses that directly benefit from the advice.

## Driving small and medium-sized enterprises towards environmental management

Policy implementation in networks

*Theo de Bruijn and Kris Lulofs*

While much of the attention in the past has been focused on large firms, nowadays there is a growing recognition of the need to transform small and medium-sized enterprises (SMEs). After all, SMEs are collectively responsible for a significant portion of the total environmental burden. An important question, therefore, is how to engage with SMEs and convert them to environmental management.

In this chapter, the basic policy approach that has been chosen for SMEs in the Netherlands is analysed and evaluated.<sup>1</sup> Adopting environmental values and environmental management systems are thought to be important steps in the transformation process. Instead of dealing with SMEs directly, the Dutch government tries to facilitate and manage the formation of networks. More emphasis is laid on the organisational structure of policy implementation than on the policy instruments themselves. Within policy networks intermediary organisations, such as trade associations, are partners in policy-making and policy implementation. These intermediary organisations are supposed to convince and help SMEs by adapting and implementing concepts of environmental management which in turn should raise responsiveness, capacity and capability among SMEs. The basic question we ask in this chapter is: 'Is the approach chosen valuable in achieving sustainability within industry?'

<sup>1</sup> Our definition of SMEs is related to our research population. Although other definitions are possible, here an SME has fewer than 200 workers.

We have studied the effectiveness of the Dutch approach between 1990 and 1996. In this chapter we highlight some of our findings. We start by giving a short introduction on the way in which environmental policy in the Netherlands is implemented. Special attention is given to the target-group policy. We then focus on the stimulation of environmental management in SMEs. This can be seen as a good example of the consensual, indirect steering model in which policy networks play an important role. We end the chapter by evaluating the Dutch policy approach in the light of its effectiveness for transforming SMEs.

### **Environmental policy in the Netherlands**

The Netherlands is a very densely populated country. It has a comparatively large amount of industry, intensive farming and a fast-growing infrastructure. For these reasons there is a considerable degree of environmental degradation. Furthermore, the Netherlands may be described as a highly consensus-based community with a planning tradition covering a wide range of social aspects. A Dutch characteristic is the long tradition of governmental consultation with various groups in society (VROM 1997). This is reflected in the way our economic system and national economic policy works. The so-called 'polder-model' relates to negotiations and agreements between government, industry and trade unions on the sensitive balance of productivity, returns, competitiveness, wages, tax systems and currency inflation. Current practice in the environmental field continues and reinforces this custom of co-operation and shared responsibility. Co-operation between government and industry, negotiations within industry sectors, reasonableness and covenants (instead of 'command-and-control') are key factors in the greening of industry in the Netherlands.

Dutch environmental policy is created through a process of close co-operation between government, the business community, non-governmental organisations (NGOs) and other stakeholders (Bressers and Plettenburg 1996). Of course, direct regulation also plays an important role in Dutch environmental policy. But, even here, consultation with all the relevant parties is important. Often, however, voluntary agreements are also concluded with the business community. Instead of simply imposing legislation, the Dutch government may negotiate agreements with environmentally important sectors of industry with the aim of implementing environmental objectives.

### **The 1970s and 1980s**

The basis for environmental policy in the Netherlands was laid in the early 1970s. In 1972 the Ministry of the Environment (VROM) was established. With some urgency environmental laws were formulated. The policy during this time had two important characteristics:

- **Sectoral approach.** Environmental problems were seen as mainly 'hygiene' problems within separate 'compartments'. Each environmental compartment

(water, air, soil, waste, etc.) was seen as a different and isolated problem area. Different laws and policies were formulated for each compartment.

- **Use of permits.** The central instrument in Dutch environmental policy was the ban on performing any environmentally harmful activities without a permit. Permits were therefore the most used policy instrument. Lower authorities (mainly municipalities) were responsible for issuing permits.

The complex, fast-changing rules were not sufficiently clear or specific enough for SMEs. Furthermore, the monitoring of the rules by the public authorities, and their enforcement efforts in cases of non-compliance, were not very effective.

During the 1980s an additional strategy was used that was grounded on incentives. Soon it became clear, however, that, within the framework of free competition and free trade within the EU, the ability to raise or lower costs is limited. And, of course, industry has been willing and quite successful in opposing additional financial burdens. Moreover, evaluation research on the effectiveness of economic instruments proved that this strategy often resulted in the installation of end-of-pipe technology.

Both regulation and incentives were implemented in a hierarchical manner with little attention to the capacity or capability of SMEs or the regulators. These strategies were, therefore, not successful in driving SMEs towards improved environmental management.

Another strategy was called for, aimed more specifically at eliciting private initiatives and thus shared responsibility. This approach is not only designed to achieve more broadly based support for government policy, but also recognises that the know-how necessary to reduce environmental pollution can be largely found among the polluters themselves. Below we discuss some characteristics of this new strategy.

### **Towards an integrated policy approach**

The cornerstone of current Dutch environmental policy is the National Environmental Policy Plan (NEPP) which was first published in 1989 and subsequently at four-year intervals. The plans aim for radical changes in order to make environmental problems manageable within the next 25 years. This means, for instance, that emissions of the most heavily polluting substances must fall by 80%–90%. This cannot be achieved by conventional policy instruments alone.

The sectoral approach was left behind and replaced in the NEPP by a thematic one (see Table 1). For each theme, the objectives for the next 25 years are set and relevant 'target groups' are identified that contribute to the problems described within the themes. Industry, agriculture, transport and consumers are some of the key target groups. Wherever possible, negotiated agreements are concluded with these groups which specify their contribution to dealing with the problem. The voluntary approach is, however, part of a policy mix in which there is also room for other strategies, such as direct regulation.

To transform SMEs, two main paths are followed: target-group policy; and stimulation policy on environmental management. Below we describe some basic

**Policy themes****Targets (simplified)**

► Climate change	Reduction of CO <sub>2</sub> emissions by 20%-30%
► Acidification	Reduction of SO <sub>2</sub> emissions by 80%-90%
► Eutrophication	Reduction by 90%
► Diffusion of toxic and hazardous waste	Reduction of emissions by 50%-90%
► Waste disposal	Reduction of amount of waste dumped by 60%
► Disturbance	Reduction of the number of people significantly affected by noise or odour by 70%-90%
► Groundwater depletion	Reduction of affected areas by 25%
► Dissipation	Increased material intensity

Table 1: DUTCH POLICY THEMES AND TARGETS

characteristics of the target-group policy. The subsequent section is devoted to the stimulation of environmental management.

#### □ Target-group policy: consultation and negotiations

A fundamental principle underlying the NEPP is that responsibility for reaching the environmental targets lies primarily with the target group itself (Suurland 1994). The setting of targets at the state level remains the exclusive responsibility of the government (as shown in the NEPP). After the targets have been set, the target groups have a strong say in all further stages of the policy process. Under the target group policy several sectors of industry participate in a consultation process with the authorities. During this process all of the relevant goals from the NEPP are translated into sector-specific goals. These reflect the contribution of the sector to the solution of the problems. After this, a 'declaration of intent' is formulated. This is a covenant between the parties involved and it contains agreements on specific targets for the relevant sector.

In homogeneous sectors of industry the sector goals are then directly translated into an implementation plan. The idea is that companies resemble each other so much that the measures needed can be generalised at sector level. An example of a homogeneous sector in the Netherlands is the printing industry. In heterogeneous sectors, however, the targets need translation and specification at company level. Companies in these sectors are required to draw up their own environmental plan.

The trade association is an important player both during and after the negotiations, often acting as the sector's representative. The promotion of the terms of the agreements among companies within the sector is also the responsibility of the trade association.

Basically, the new strategy adopts a multi-level approach. Besides the macro level (national government) and the micro level (SMEs), the meso level (intermediary organisations) is involved in order to obtain access to players at the micro level.<sup>2</sup> The fact that the system is multi-level is not that new. What is special is the way in which the levels communicate, adjust to each other, produce agreements and implement those agreements. The players at the meso level are responsible and have to direct their influence, resources and power towards those at micro level.

The success of this strategy depends heavily on the capability of the sector to organise itself. If the sector fails to live up to the agreements by implementing the measures needed, there is always the threat of direct regulation. For companies this means loss of flexibility. This puts pressure on intermediary organisations (the trade associations) to influence, assist and, if necessary, force individual firms towards the negotiated adjustments and outcomes.

#### The target-group policy in practice

The target-group policy, with its emphasis on consultation and negotiated agreements, specifies what companies need to do. Thirteen sectors of industry were selected based on their 'share' of the total environmental burden. By the end of 1997 only nine of the sectors had concluded a negotiated agreement. The individual translation into an environmental plan was also delayed. Some 63% of the companies in the chemical sector, for instance, had concluded this plan on time (Oveteleggroep Chemische Industrie 1995). Taken together, the individual environmental plans do not always lead to the desired reduction for the sector as a whole. In conclusion, the consultation, negotiation and implementation took more time than expected and, in some cases, led to a watering-down of environmental targets. During the process that led to the various agreements and the activities of the companies that followed the agreement, there were some complaints about a lack of transparency (e.g. Biekart 1994). The agreements, however, all have the option of imposing sanctions on 'free-riders'. If a company fails to live up to the agreement, the enforcing authorities are obliged to apply supplementary conditions regarding the company's permit. Local authorities have to take the declaration of intent (one of the outcomes of the target-group policy) into account when issuing a new permit. In this way free-riding can be forced back. Companies that have neglected the chance to translate the demands as laid down in the declaration in their own way (by taking into account company-specific circumstances) will eventually be forced to do so by means of the permit system. Laggarders can also expect more stringent inspections. Regulation has been announced that opens up the possibility of imposing some special requirements concerning mandatory analysis of the environmental performance of a company by third parties.

#### □ Stimulation of environmental management

The central concept underlying environmental management is to stimulate the companies' own responsibility and actions. This should improve the responsiveness,

capacity and capability of SMEs. Where the target-group policy specifies what needs to be done, companies are expected to learn how to implement these requirements via environmental management.

In 1989, the Ministry of the Environment in the Netherlands issued the Memorandum on Environmental Management (Tweede Kamer 1989). The objective of this was to make Dutch companies introduce an environmental management system by 1995.

To achieve this aim, the Memorandum presented a programme of activities based mainly on the acquisition—through research, stimulation and demonstration projects—of specific knowledge which would then be disseminated among the business community through guidance and education. Intermediary organisations were asked to play a special role in this. They were responsible for keeping in touch with the individual companies. By supplying information, attempts were made to stimulate the introduction of environmental management into the companies. The underlying idea was that, by offering support, the uncertainty and, therefore, the cost to the individual company could be reduced to such an extent that they will actually proceed to introduce the system.

Instead of dealing with SMEs directly, the government tries to facilitate and manage the formation of networks and to enable those networks to promote and contribute to the implementation of the negotiated goals and rules. These networks, in which trade associations play an important role, are believed to be more capable of reaching and helping SMEs. A multi-level approach is therefore seen here too.

#### *Different functions within a policy network*

Intermediary organisations within a policy network can perform three functions. We talk about a **will-influencing function** when a network organisation tries to influence the motives of the dominant coalition within companies with regard to environmental management. Network organisations have to convince this dominant coalition of the relevance of environmental management and improvements in their environmental performance. We talk of a **supporting function** when a network organisation tries to help companies implement environmental management systems and introduce measures to improve their environmental performance. This involves supplying resources such as model approaches, guidelines and manuals, and offering courses and training. We talk of a **repressive function** if the network organisation intends to steer the unwilling members of the target group in the desired direction through gentle or hard pressure. Performing a repressive function means acting out a position of power. This is summarised in Figure 1.

The basic assumption of consensual steering in a network approach is that as the intended network relations are exercised to a greater extent, companies will show a more positive attitude and carry out more of the activities asked for.

#### *Network organisations surrounding SMEs*

Implementation of the policy programme on environmental management was aimed at the formation of a policy network as a first step. The network surrounding companies with regard to environmental management consisted of the trade

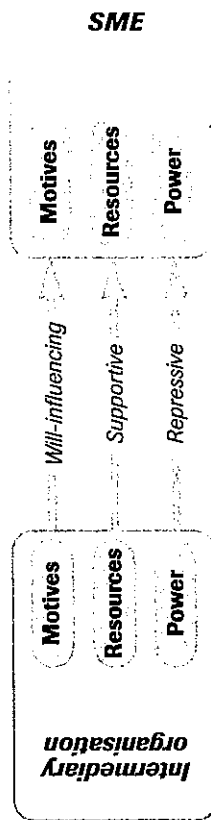


Figure 1: THE THREE NETWORK FUNCTIONS BETWEEN SMEs AND INTERMEDIARY ORGANISATIONS

association, industrial environmental agencies, central government, the municipalities, employee organisations and consulting firms. The main role was for trade associations. They had to convince their members (and possibly the remaining companies within their sector) to help them actively: for instance, by providing handbooks and courses, and to use their position of authority and power to force members to take environmental management seriously. Municipalities were expected to support these activities for the companies within their borders.<sup>3</sup>

A second important category was formed by the industrial environmental agencies. These were set up specifically for the introduction of environmental management systems in SMEs. They had a regional perspective and were mainly intended to motivate and support companies. Trade unions were expected to inform their members, thus creating support on the shop floor. Consulting agencies could be valuable in assisting companies with the implementation process of environmental management. Finally, central government only saw a motivating task for itself. And, of course, it co-financed some of the activities of the other network organisations. Table 2 summarises the network organisations and their expected functions.

Actor	Will-influencing	Supportive	Repressive
Trade association	X	X	X
Municipality	X	X	X
Industrial environmental agency	X	X	
Trade unions		X	
Consulting agencies			X
Central government			X

Table 2: NETWORK ORGANISATIONS AND EXPECTED FUNCTIONS

<sup>3</sup> See Chapter 16 on the role of local authorities.

*Environmental management in companies*

To evaluate the success of the stimulation policy we looked at the following industries: chemical, printing, synthetics processing and concrete products. Random samples were taken from these four sectors. Out of the 343 firms we contacted, 141 (41%) co-operated in our research. Our main research question was whether the new policy approach was successful.

First, we looked at the degree of penetration of the different activities that were carried out through the network. Table 3 summarises the main findings. These outcomes show that the respondents were certainly aware of the network's activities.

Network indicators	Percentage of companies
► Familiar with terminology	92%
► In possession of the supporting material	62%
► Attended informative meetings	54%
► Implementation supported by the network	43%

Table 3: THE DEGREE OF PENETRATION

A second aspect we looked at was the level of progress of the companies. Table 4 shows the distribution of the companies on this variable.<sup>4</sup> The level of progress found is reasonable compared with the descriptive data found by the official evaluation studies performed (commissioned by the Ministry of the Environment) in 1991, 1992 and 1996 (Calkoen and ten Have 1991; Van Someren *et al.* 1993; Heida *et al.* 1996).

Level of progress	Percentage of companies
► Inactive	6%
► Orienting	39%
► Initiating	51%
► Advanced	4%

Table 4: THE PROGRESS OF ENVIRONMENTAL MANAGEMENT IN COMPANIES

4 The variable 'progress' comprises two aspects. First, we determined to what extent the companies had implemented an environmental management system. Driven by the research design, we

*Policy effectiveness*

At first glance, it could be said that the stimulation policy has been quite successful, given the fact that these results were achieved in only a few years. The main question, however, is whether the stimulation policy, implemented in a network configuration, is accountable for this. We studied the effectiveness of this configuration in the Netherlands between 1990 and 1996. We used an inter-organisational explanatory model to conceptualise and make empirical explanatory research possible. In order to be able to measure the level of transformation of SMEs between 1990 and 1996 we used the attitude of the management towards environmental management and the level of progress in building environmental management systems and improving environmental performance as variables. The research model is shown in Figure 2.

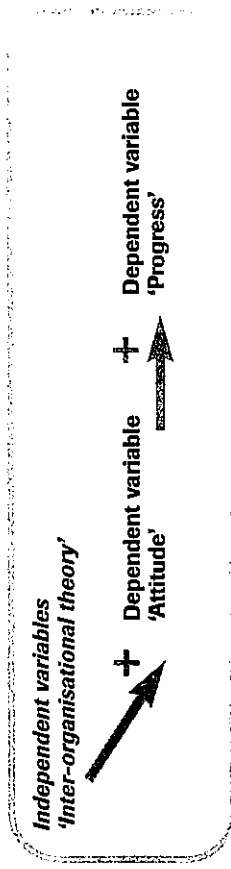


Figure 2: RESEARCH MODEL

The implementation of environmental management requires changes within the organisation, or in other words changes in the patterns of behaviour of members of the organisation. These changes are, to a certain extent, determined by attitudes towards environmental management within the company. The dependent variable 'attitude' regarding changes in the rules of behaviour can be placed on a continuum ranging from acceptance to rejection of change. The dependent variable 'progress' measures stable patterns in the behaviour of members of the organisation.<sup>5</sup>

Research expectations were formulated about the positive relations between the attitude of the dominant coalition and stable patterns in the behaviour of members of the organisation. These research expectations were proved to be true (Kendall  $\tau$ -c = 0.42, T-value 5.84).

used as indicators for an environmental management system the requirements posed by the Dutch Ministry of the Environment. These requirements are, however, very similar to those of ISO 14001. The existence of a management system is seen as an indicator for progress on an organisational level. Second, we determined the amount of measures taken on environmentally relevant issues within a company. After all, *sustainable* environmental management is more than just an organisational matter. We combined these two aspects into an index for the level of progress on environmental management within the company. The 'inactive' companies have developed few or none of the elements of an environmental management system and have taken hardly any concrete measures to minimise their environmental impacts. The 'advanced' companies are the opposite of this: they have developed all, or nearly all, the elements and have also taken a lot of measures.

5 See footnote 4.



The next question, of course, is whether these results can be explained out of the efforts of the intermediary organisations (i.e. the organisational setting in a policy network). Our inter-organisational theory proposed that it was the organisational framework (at the meso level of intermediary organisations) that can explain the results. The basic assumption was that as the intended network relations are exercised to a greater extent, companies will show a more positive attitude (see Fig. 2).

To test this assumption, we first measured the frequency of contacts between network organisations and the company. Furthermore, we looked at the relations between the different network functions and attitude. Each relation proved to be positive and significant (Table 5). The chance that all four relations point in the same direction (as in our case) by accident is extremely small. This means that, as network organisations are more active, companies show a more positive attitude towards environmental management and are more advanced with their implementation of it.

Indicator	Relation
► Frequency of contacts	Kendall $\tau$ -c = 0.18; T-value 1.98; significance: $\alpha$ approximately 0.02
► Will-influencing function	Kendall $\tau$ -c = 0.27; T-value 3.08; significance: $\alpha$ approximately 0.00
► Supportive function	Kendall $\tau$ -c = 0.24; T-value 2.29; significance: $\alpha$ approximately 0.01
► Repressive function	Kendall $\tau$ -c = 0.16; T-value 1.71; significance: $\alpha$ approximately 0.04

Table 5: NETWORK RELATIONS

The second step consisted of an analysis of the explanatory power of the inter-organisational theory in total (and thus the activities arising from the network), via regression analysis. When we take a look at the explanatory power of the independent variables, we can explain some 22% of the variance of the dependent variables. Best explanations are found in the activities of the trade associations and, surprisingly, those of central government. As described earlier, the government did not deal with SMEs directly. Its role was to facilitate and manage the formation of networks and to assist them in their attempts to encourage more environmental management within SMEs. The empirical outcome, that central government is an influential actor in this configuration also, is therefore surprising. It might be explained by normative effects of the policy position taken. Nevertheless, trade associations are the most important actors in the network.

Although our analysis leads us to the conclusion that more than 20% of the variance in attitudes can be explained out of the activities of the policy network (which we

consider to be quite successful),<sup>6</sup> it is obvious that other company-specific factors can specify the exact influence of network relations. Nevertheless our general conclusion is that the approach used was rather successful (de Bruijn and Luloofs 1996).

## Conclusions

In this chapter we have taken a look at the way Dutch environmental policy aiming at SMEs is implemented nowadays. To engage with SMEs, an indirect, consensual steering model is used in which policy networks play an important role. Within this policy network intermediary organisations (for instance trade associations) are partners in policy shaping and refining, and in policy implementation. A first argument in favour of such a steering arrangement is that organisations that are more closely involved with the eventual target group, are better able to shape and implement the central government's policy in an effective and practically applicable way. In addition, intermediary organisations would be able to get the message across to the policy's target group more convincingly. Finally, the target group would tend to justify its own behaviour towards some intermediary organisations. For instance, in the Netherlands, the trade associations are believed to be the suitable intermediary organisations to shape and implement policies on pollution prevention and environmental management for SMEs.

Although it is still a little early for a final judgement of the new policy approach, some conclusions can be drawn. For the time being the score is positive. A lot of specific knowledge that is of use to companies has been developed, both as a result of the target-group policy and the activities of the policy network. The formation of this network was also a success. Our research has shown that a real network has developed over the years. The policy mix also offers options for governments to co-operate with proactive companies while at the same time employing a strict regime towards laggards. A further positive development is that the attitude of companies towards environmental affairs has improved. There are also signs that the relationship between the legal authorities and the companies seems to have improved (e.g. Stuurgroep Grafische Industrie en Verpakkingsdrukkerijen 1997).

Therefore, we conclude that a consensual steering approach, based on co-operation between government and industry, sectoral negotiations, reasonableness, and covenants (instead of command-and-control), can really reach SMEs and influence their behaviour positively as far as environmental management and environmental performance is concerned. Nevertheless, the explained variance is not high enough to lead us to believe that consensual steering with the use of networks can cope with the increasingly intractable nature of environmental problems that need to be tackled. We should realise ourselves that the easy reduction percentages are already realised or will be realised in the near future (i.e. the 'low-hanging fruit').

6 In other situations we judged the theory could explain up to 56% of the variance in the dependent variables.

A second conclusion is in line with that of Angel and Huber (1996). They conclude that private organisations are influenced by external forces as far as entering new items on the agenda is concerned. Characteristics of the organisation itself tend to be more influential than external pressures. This conclusion means that, within a configuration chosen by the Dutch government, effectiveness could increase considerably when the characteristics of the organisation itself are taken into account when trying to increase pressure. Help offered from outside should therefore be tailor-made to the sector of industry and deal with organisational characteristics.

As a third and last conclusion, we can say that the explanatory power of inter-organisational activities is stronger when a long-term relationship exists between the intermediary organisation in the network and the SME and where the SME sees the intermediary organisation as reliable and credible. New contacts or organisations do not work. As mentioned earlier, best explanations were found in the efforts of trade associations that were studied. New contacts or organisations such as the new industrial environmental agencies do not work effectively. In our research towards inter-organisational relations there is no such thing as 'love at first sight'.

The new policy approach is, therefore, certainly not 100% successful. The main question, however, is whether there is an alternative. The stimulation policy of environmental management is aiming at target groups in a sense that they learn how to implement environmental management. The question on what to achieve in terms of environmental performance is dealt with in the target-group policy. The results of the target-group policy are the minimal requirements. The local authorities are able and obliged to use the results of the target-group policy as a basis for issuing the permit. Environmental management is the tool that enables the target groups to reach the minimal requirements set by the target-group policy or to reach even higher goals. The greatest benefit in this approach lies in the regained flexibility. The current policy mix gives some room to proactive companies and supports them actively. At the same time, the permit system can tackle laggards and secure developments in other companies. Therefore, we feel that the consensual steering approach is a promising new supplement to engage with SMEs, but it needs to be used in combination with various other instruments.