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# Environmental policy

Marco H.J.M. van Maasacker and Maarten J. Arentsen<sup>1</sup>

## 1. Introduction

Although Europe may be 'invisible' according to many critics, one can smell it everywhere. Pollution seems to have reached the ideal of a 'Europe without frontiers'. Besides integration, improving the environment seems to be one of Europe's most challenging problems.

The European natural environment has been exploited for many purposes since the mid-eighteenth century, the beginning of the Industrial Revolution, if not long before. Natural resources have been exhausted; many species have disappeared; eco-systems, often existing for millions of years, have been destroyed. At the moment Europe is one of the most crowded human habitats of the world. In the course of years, especially in the last century, agricultural and industrial activities created serious problems for the environment.

As a part of Europe, the Netherlands is one of the most densely populated countries in the world and all its activities, including pollution, are located on a small piece of land. Its soil and air must be conserved, and now purified, in order to breathe and live.

For centuries the Dutch fought the water. The struggle is not over yet. However, problems have evolved and new problems have to be challenged. Partly surrounded by the sea and situated in the delta of some of Europe's great rivers, the Netherlands considers maintaining and improving water quality a traditional and typically Dutch environmental topic. But air and soil pollution set serious problems too.

Many problems cannot be handled by a single country. Chernobyl highlighted the need for international co-operation and co-ordination. Acidification is another serious threat to the European environment. Many Dutch citizens have to drink water from a Franco-German sewer called the Rhine. Pollution often crosses national borders, creating a need for international co-operation to maintain and improve environmental standards. The dense population and resulting concentration of production and consumption makes the Dutch a net exporter of all kinds of

pollution. In 1985, only 15 to 20 per cent of the total Dutch acid emissions was deposited on Dutch ground (Institute for National Health and Environment, 1988: 111).

Environmental problems entered the European agenda only recently. Europe started 'without' environment. The member-states agreed on attention to the environment, but the founding treaties do not list environmental goals. World-wide reports on global pollution and news of several environmental disasters, which were discussed in Paris in 1972, rendered the environment a European issue for the first time. The first doubts on whether economic growth should be the ultimate objective were raised.

In 1973, a first EC action programme was born in which environmental topics, objectives and policies were discussed. Other programmes followed in 1977, 1983 and 1987. In the 1980s, environment was on the European agenda. Over several years, Europe has set many standards and agreed on many environmental topics. EC directives initiated national environmental policies.

In this chapter we discuss the major positive and negative effects of the European environmental policy on the Netherlands. As mentioned above, pollution is everywhere and so is environmental policy. Pollution results from many activities, such as producing and using cars, keeping cattle, producing energy, using refrigerators, washing clothes, flying planes, curing illness and so on. Pollution has an impact on the air, on the water and on the ground. It is impossible to treat environmental policy extensively, but we attempt to draw a rough picture.

In the next section we highlight the basic goals and means of the EC environmental policies. In Section 3 we describe the core of Dutch environmental problems and the Dutch policies to overcome them. Section 4 is based on an extensive comparison of EC and Dutch environmental policies (Van Maasacker, 1989) and assesses the effects of EC environmental policies on the Dutch environment and the side-effects on other policy domains.

## 2. Goals and means of EC environmental policies

As mentioned above, environmental objectives were set at the European level in 1972. In Paris, EC member-states agreed upon several environmental goals, among others:

1. Pollution should be restrained at the source.
2. Pollution abatement should be integrated in European economic and social development.
3. EC environmental policy should be based on a 'the polluter pays' principle.
4. Scientific research in environmental problems should be extended and improved.

5. Border-exceeding pollution should be prevented.
6. International discussion of the pollution topic should be stimulated.
7. European citizens should be informed about pollution problems and their interest in the environment stimulated.
8. Co-operation on environmental topics should be stimulated among member-states.
9. Last but not least, improving the EC environmental standards should stimulate co-operation between member-states and harmonize national policies but not restrict national developments.

On the basis of these intentions, several EC action programmes were put into operation. Up till now, European environmental policy is still based on these objectives. In 1986, environmental policy became formally established as a Community policy in the Single European Act. The Act contains three main environmental objectives:

1. Maintaining and improving environmental standards.
2. Maintaining and improving human health.
3. Caring for a cautious use of natural resources.

Besides, it was declared that any renewal of the Single European Act should further the protection of the environment. The national environmental policies should be harmonized.

The instruments of EC environmental policies are the same as the national instruments and include directives, incentives, agreements and information. Directives are preferred and mostly list detailed norms and standards, e.g. emission norms, exposure standards, environmental quality standards, process or operation standards, product standards, etc. (Haigh, 1984). In this way, norms and standards have a binding force on member-states and must be implemented in national legislation but, within their limits, member-states may adjust national legislation in their own way.

The EC has issued many directives to restrict air pollution, including emission norms and standards for a variety of activities. Norms and standards are issued for traffic, nuclear and non-nuclear energy plants, noise and many other hazards (e.g. lead).

Other directives govern the improvement of water. Norms have been set for polluting activities such as industrial processes and household activities. An example is the restriction of the use of washing preparations containing phosphates. Recently, the Dutch producers of detergents agreed deliberately on supplying preparations without phosphates. Some directives contain quality standards for different purposes of water, e.g. drinking water, fresh-water fish, swimming and so on.

A third set of directives aims at the improvement of the soil. Most of these deal with emission norms and standards for the use and handling of chemicals and the resulting waste disposal (e.g. polychloridebiphenyls, oil).

### 3. Dutch environmental goals and means

At the end of the 1980s, environmental objectives were integrated in Dutch governmental policies. The environment is recognized as one of the main problems of society and it is on the political agenda. Progress has been made in the implementation and enforcement of environmental regulations. Scientific research on environmental issues is being carried out. However, new and more serious problems are still undoing recent results. In the Netherlands, the fighting of pollution has started, but the battle is in many respects yet at its beginning.

By 1970 the Netherlands began to structure its environmental programme. The Department of Public Health was extended with a special agency for environmental policy. From that time on, environmental policy was being developed step by step. In the beginning, environmental problems were analysed as individual problems of specific activities with specific consequences for air, soil and water.

As time went on, environmental problems were increasingly perceived as different aspects of whole eco-systems. The policy objectives, including both maintaining and improving the environmental conditions of air, soil and water, were treated in a more integrated perspective.

In the 1980s environmental problems were perceived as interrelated problems of a single eco-system and the interconnectedness of problems was stressed. The Directorate-General for the Environment became part of the Ministry of Physical Planning, rather than of National Health. At present, pollution problems and policy objectives are classified according to interconnected themes, such as acidification of the environment and the manuring of the soil.

Dutch policy is basically a two-track policy. Like EC policies, Dutch policies are aiming at combatting pollution at its sources. However, Dutch policy also contests pollution in its effects. Both tracks are treated complementarily. In this respect, too, Dutch environmental policies have developed towards integration (see Winsemius, 1986: 17 for a former minister's description of this development).

By 1975 every aspect of the environment was regulated (Bressers, 1987: 363). From the mid-1970s on, the basic objectives have been operationalized in five-year programmes. Every year, priorities and programmes are evaluated and adjusted. In the latest of these programmes (Ministry of Housing, Physical Planning and the Environment, Tweede Kamer, no. 20803, 1-2, The Hague, 1988: 17-56), priority was given to:

1. Reducing the acidification of the environment.
2. Reducing the unnatural enriching of the environment.
3. Reducing the dispersion of toxic wastes.
4. Reducing the disturbance of the environment.
5. Controlling the removal of wastes.

On many themes, the environmental policy attempts to influence the behaviour of polluters. For instance, many activities of the Dutch farmers are restricted. Farmers are no longer allowed to spread animal manure in unlimited quantities over their land. Farmers are given financial inducements to reduce their herds of cattle or to change farming methods (see Chapter 5 about the limits set to Dutch farming by European agricultural policies for economic reasons).

Traffic is also an important target of environmental policy. In the Netherlands, car use density is the highest in the world. The Dutch are confronted with serious infrastructural (motorway) problems. The hazardous emissions of the many cars set serious problems to the environment. The Dutch Government stimulates consumers to buy clean cars by means of tax grants, but hopes also to stimulate public means of transport.

Environmental objectives and principles have been elaborated in an extensive variety of policy instruments. Basically, these instruments aim at changing polluting behaviour (Bressers & Klok, 1987; Van der Doelen, 1989). Regulations are the favourite in the Netherlands, as they are in the Community's environmental policies. To a lesser extent, financial instruments have been implemented as well, e.g. the maintenance of water standards is regulated by means of effluent charges. These charges seem to be more effective in reducing emissions than the permits that have been issued for the same purpose (Bressers, 1983). Other emissions have been subject to charges too. Stimulating the purchase of clean cars is another financial tool to reduce pollution.

The use of financial instruments to regulate polluting behaviour is limited, however. Beside judicial and to a lesser extent financial instruments, communication and information instruments are also used in environmental policy.

More recently other instruments have been suggested, and some of them already implemented, partly because of the ineffectiveness of older policy instruments and partly to confirm the joint responsibility of all participants for the prevention of pollution. Among others, environmental auditing and the privatization of depositing chemicals have been suggested (Hanf *et al.*, 1988; Huppés, 1988). Furthermore, the authorities made gentlemen's agreements with some thirty industrial sectors to restrict polluting activities. However, despite these innovations, directives still dominate as the favourite policy instrument.

In sum, Dutch policy objectives have been adjusted to priority problems and operationalized under clear environmental standards which industries and other polluters are to meet. The instrumentation has been extended too. In recent years much effort has been made to organize an effective environmental infrastructure in which central and local authorities co-operate to combat pollution. Directives as the main tools of policy have been evaluated on their effectiveness, and restructured if necessary. New instruments are being suggested and some of them implemented.

Environmental responsibility seems to spread to other members of Dutch society. Employers' organizations and labour unions recently agreed together upon a programme to reduce pollution on the basis that economic development and increasing standards of life should meet certain environmental standards.

The environmental problems stimulated scientific research and initiated new technologies on many topics. Many new economic activities are being developed, especially with respect to recycling. Economists stress the spin-off from these developments and new technologies.

#### 4. Effects on the Netherlands

Our general and incomplete explanation of EC and Dutch environmental policies highlights some differences and similarities. Environmental pollution entered both the European and the national political agenda. At both governmental levels, general statements about environmental standards have been agreed upon and many of these statements have been subsequently operationalized in clear and measurable emission standards, environmental quality standards and so on. The basic European environmental standards and objectives have been codified in the Single European Act and it is recognized that European social and economic developments should not threaten environmental qualities any longer (Jans, 1988).

In general, the Dutch are, together with the Danish, French and Germans, said to be among the European environmental front-runners (Bennett, 1988). In this position, European standards are often evaluated as too weak. In general, harmonization of national policies has been achieved at the lowest environmental levels (Jans, 1988: 170). For the Netherlands and some other countries, this begs the question whether these standards may have a deteriorating, rather than improving, effect on the national environment.

Van Maasacker (1989) compared some 130 environmental EC directives with corresponding Dutch environmental legislation with respect to their definitions of the target group,<sup>2</sup> their environmental standards and their means to attain these standards. These three criteria were derived from a juridical philosophy of norms (Herweijer & de Jong, 1983). So our assessment of effects of EC membership is restricted to formal differences in legislation on three juridical topics.

All 130 environmental directives were classified in one of the following environmental categories: air, water, disposals, chemicals, nuisance and the protection of nature. For every category, the classified directives were compared with the Dutch national legislation, being valid in law at the time of issuing of the EC directive. In general, EC directives exert a neutral or restricting effect on Dutch target group definition.

In water regulation, the restricting EC effects are rather strong. This

is partly because the Netherlands has very extensive water legislation. In this legislation the target-group is almost the whole population as is to be expected in a country made up of former wet lands.

The effect of the 130 EC directives on Dutch environmental standards, in contrast, stands out as stimulating, even though the Netherlands complained about the European standards on several occasions. The Dutch use of tax incentives to stimulate clean car buying in the spring of 1989 seems to have been an exception up to now. Most EC environmental directives set standards exceeding those of the Dutch. In seventy-eight EC directives the standards were more specified or restricted than in the corresponding Dutch legislation of that time.

This stimulating effect is most visible with respect to water regulation, where Dutch regulations do not yet encompass specific norms for disposal of some substances (e.g. mercury). Furthermore, the Dutch values for disposal are not formulated as quality standards, as is the case in the EC directives, but as guide-lines for quality control only. Several EC directives, those for chemicals and, to a lesser extent, the protection of nature in particular, have initiated Dutch legislation.

With respect to policy instruments to maintain or improve environmental standards, the effects of EC directives tend to be neutral or slightly stimulating. The Netherlands tends to opt for the same instruments as the EC, although the Dutch instruments may be slightly less specific.

Sometimes the Dutch implement EC policies in a creative manner. The Dangerous Substances Act is one example. The corresponding directive prescribes that the marketing of chemicals should be notified. The Dutch law extends the prescription to the production of new chemicals.

Dutch protection against radiation offers another example. After Chernobyl the Dutch proposed that radiation standards for food should be restricted. However, Europe could not agree on more restricted standards and the Dutch had to circumvent the relevant EC directive. This is why the Netherlands regulates any use of ionizing radiation by means of an overall system of permits, although Europe prescribes permits only for medical uses.

However, on other occasions, the Dutch have been forced to implement directives in national legislation by the European Court. Slow implementation often results from disagreement with EC norms. According to the Dutch, some standards are so low as not to be worthy of implementation in the national legislation (Bennett, 1988). The tentative conclusions from our own comparison of EC and Dutch environmental standards show that this is exceptional. On the whole, Dutch standards are improved by EC directives.

There is, however, yet another side to the Dutch environmental policy. The Netherlands cannot cope with the environment without Europe. Most national policies can only give partial and insufficient environmental improvement. Many environmental problems are on a European scale and will get worse in the future.

The fourth EC action programme stresses that environmental problems cannot be solved without commitment and that the Community's economic and social development can only be successful if the improvement of the environment is fully included in the 1992 programme (Jans, 1988: 173). The maintenance and improvement of environmental standards has only just begun. The problems cross national borders and the European Community may stimulate national governments to meet their environmental challenges.

## 5. Conclusion

Although EC environmental policies until the mid-1970s used to be dominated by the Community's objective of economic development and economic integration, environmental pollution is by now seen as one of Europe's most challenging problems and the environment is on the European political agenda. Up to 1989 some 130 environmental directives have been issued. On the whole, these directives contain detailed norms and standards for the emission of hazards, the quality of the environment and many others.

In the previous section, we compared Dutch and EC policies. On the whole, the Dutch design their environmental policies in congruence with the corresponding directives. Dutch policies may improve on directives on topics of national interest and serious national environmental problems. Our comparison showed a restrictive effect of EC directives on target-group formulation and a slightly stimulating effect on policy instrumentation. EC directives more often than not improve on Dutch standards, partly because many specific environmental standards are implemented in Dutch legislation after the directive is issued.

Little has been said about the effects of EC environmental policies on other policy domains, for example the Dutch economy. The fact is that polluting producers may complain about rigid regulations, but tend to profit from EC standardization in this respect, as their competitors in other member-states more and more are required to obey the same norms.

Dutch exports may be stimulated to the degree that Dutch products from industries obeying all environmental norms may compete better against domestic products from industries complying with increasingly strict EC standards. Trade, however, may suffer from the fact that polluting products may become expensive or rare to the degree that their producers leave the Community for a less environmentalist country. This affects the buying power of consumers as well and may be regarded as an effect of Dutch EC membership to the extent that the Netherlands successfully convinces other member-states that standards should be sharper.

The international dimension of the environmental problem is a strong

motive for co-operation between countries and for European integration in particular. However, the fact that EC environmental policies are expressed in directives rather than laws, offers little integrative momentum. One might rather conclude that, as yet, co-ordinated national solutions are sought for an international problem, rather than an integrated solution. In contrast to the expectations that surrounded the founding of Euratom, EC environmental policies do not strengthen European integration, in spite of the international dimension involved.

To sum up, the gains and losses of EC environmental policy for the Netherlands are of limited impact:

#### GAINS

- EC intention to have international social and economic development without environmental damage.
- On the whole, the Dutch environmental legislation is erected in congruence with the EC directives.
- In some cases, existing Dutch environmental standards have been improved by EC directives.

#### LOSSES

- Some Dutch environmental objectives have been subordinated to the harmonizing EC directives (in exceptional cases only).

#### Notes

1. We are grateful to Hans Bressers for providing detailed and stimulating comments on an earlier draft of this chapter.
2. The target-group of a regulation refers to those members of society whose polluting behaviour is to change under the regulation.

## Chapter 10

# Research and technological development

*Dany Jacobs*

### 1. Introduction

Especially since the beginning of the 1980s, there has been a growing tendency towards strategic partnership and technological co-operation between enterprises. Technological know-how has in the same period become the most important factor behind co-operation agreements. This is usually explained by the internationalization of markets (inside Europe and on a global scale), the speed, complexity, interrelationships and uncertainty of technological development, the growing costs of research and development (R&D), and the necessity for large companies to monitor a spectrum of technologies.

West European companies co-operate more with 'foreign' than with 'domestic' (other West European) competitors. Hagedoorn & Schot (1988: 57) list 621 (63.8 per cent) cases of co-operation with a non-West European partner, against 352 cases of strictly intra-West European collaboration. Comparative figures for the United States and Japan are 55.9 per cent and 84.2 per cent, respectively, but this last figure probably is exaggerated, due to insufficient information about intra-Japan collaboration.

Enterprises obviously do not need governmental or EC support in order to collaborate on technological research and development. The support of R&D and the introduction of new technologies has nevertheless evolved towards the centre of the industrial policies of most of the industrialized nations during the last decade. In industrial policy the accent has changed, from helping distressed industries to stimulating industrial 'adjustment' and restructuring (see Chapter 4), and to formulating more offensive policies in the field of the new technologies.

In this chapter we concentrate on policies towards R&D and new technologies, even when it is clear that there *should* be a strong connection between these and educational policy (Chapter 24), the standardization and harmonization of norms and codes (Chapter 15), and policies related to external trade (Chapter 6).