



DIFFUSE WATER POLLUTION WIT

An **inventory** of the **policies** of six countries, of the
European Union and of some international conventions

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0. ABSTRACT

0.1 Background

In general diffuse water pollution can not or only very difficultly be approached by using the same instruments as for regulating point sources. An effective way to deal with diffuse water pollution should be further elaborated in the Netherlands and probably also in other EU Member States. This, in combination with the coming revision of the EU Water Directives, was the reason for the Dutch Ministry of Housing, Spatial Planning and the Environment to commission a study on the possibilities for future approaches of diffuse water pollution at the national and/or international level. HASKONING Dutch Consulting Engineers and Architects was asked to carry out this study.

0.2 Objectives

The objectives of the study are:

- to give an overview of the ideas and present policies on diffuse water pollution within a selection of six European countries (Germany, United Kingdom, Spain, Sweden, France, The Netherlands), the European Union (EU) and a selection of the international Conventions (OSPAR, IRC, Barcelona Convention and HELCOM);
- to make an analysis of the (inter)national policies on diffuse water pollution;
- to inventory elements for a possible (common) future approach to control diffuse water pollution.

0.3 Methodology

The information needed for the overview and analysis of the (inter)national policies has mainly been collected by interviewing relevant representatives of the countries and conventions mentioned above, completed with relevant literature.

In order to exchange some experience (lessons and challenges) between the individual countries and to inventory elements for a possible (common) future approach, a discussion meeting with the representatives was organised.

0.4 Overview of (inter)national policies

The national policies of the six countries on diffuse water pollution are described with special attention to the use of quality objectives/standards, the identification of main pollutants and diffuse sources, water policy aimed at diffuse sources and additional policy implicitly affecting diffuse water pollution.

The EU legislation on water quality is described divided into rules ensuring water is of sufficient quality for intended use and pollution control legislation for certain particularly harmful substances. Also additional EU legislation influencing diffuse water pollution (legislation on air pollution, nature protection, waste, substances and products) is summarized.

National policies

Based on the comparison between the six countries it can be concluded that:

- although water quality aspects are approached by similar methodologies, there seems to be some confusion among the countries about the terminology 'water quality objectives'. Agreement exists on the identification of particular uses of water bodies. For these uses objectives have been set. These water quality objectives become operational by deriving standards (numerical values). Some countries however, also use the term 'objectives' when they speak of the numerical values;
- water quality objectives or standards (concentration values) are not yet operational in all countries;
- all countries have set values for parameters according to the EU legislation. Additionally, The Netherlands and Germany cover various other dangerous substances;
- in general nitrate/nutrients and for most of the countries also pesticides are considered as main pollutants. In some of the countries also other substances have been identified as main pollutant (acid rain, heavy metals, persistent organic pollutants);
- a common definition of diffuse sources is not available, but there is common understanding among the countries on sources of diffuse water pollution, including path ways of substances;
- regarding the identification of relevant diffuse sources differences exist between the countries but also between regions within a single country. Only agriculture and natural sources are considered as diffuse sources in all countries but with regional differences;
- three countries have elaborated the basin approach for internal water bodies (UK, France, Sweden). Much more countries cooperate according to the basin approach for transboundary waters (river basin commissions for Rhine, Meuse, Schelde etc.);
- all countries have developed policy on agriculture, on tributyl tin containing antifouling paints (shipping traffic) and on direct household discharges in urban areas (initiated by EU regulation);
- water policy on other diffuse sources has not been elaborated in all countries;
- additional policy on diffuse water pollution is available in most of the countries although it is not always considered as water-related (mainly product-, waste- and vehicle exhaust policy);
- a common instrument applied to combat diffuse water pollution, is: codes of good practice. Most of the countries apply voluntary agreements, but Germany and Sweden have certain doubts. Several countries underlined the importance of preventive tools like product labelling (product approach);
- in all countries there seem to be diffuse sources not directly addressed by water policy, but these sources differ per country. At least the following sources are not covered by water policy in all countries: atmospheric deposition, natural sources, surface run-off, household discharges in rural areas;
- in general there is no information available on the effects of the policy on diffuse sources. In the Netherlands some reduction percentages for nutrient losses and pesticide use are available, but the water quality or reduction objectives seem to be still far out of reach. In Sweden good results were reached for pesticides, but the reduction of nitrogen leaching from agriculture (10-30%) is not satisfactory;

- a national or even regional approach of diffuse water pollution seems to be preferred for the internal waters. Also a national approach for setting quality objectives and quality standards is preferred. For international waters, transboundary aspects, atmospheric pollution, agriculture and products/substances an international approach is considered necessary.

EU water policy

The aspect 'diffuse sources' mainly becomes of interest when drawing up the Amendment 86/280/EC of EU-Directive 76/464/EC and the EU proposals for bathing water, ecological quality and the action programme for groundwater protection. However, these amendment and proposals are not explicitly aimed at individual sources. Only for the diffuse sources 'agriculture' and 'detergents' water specific EU regulation is available. Additional EU policy on air pollution, nature protection, waste and products only covers the aspect of diffuse water pollution in an implicit way. This policy is not developed from a water quality point of view and a connection between these policy areas and the EU water policy does not exist.

International conventions

The role of international conventions in the approach of diffuse water pollution can be important. This role will depend on aspects like number of diffuse sources involved, number of parties involved, status of decisions etc. OSPAR, HELCOM and IRC are very active in the field of diffuse sources, whereas in the Barcelona Convention diffuse sources only recently became of interest.

0.6 Possibilities for a future (common) approach of diffuse water pollution

During the discussion meeting various lessons learnt from own national approaches of diffuse water pollution were identified. Also various challenges for the approach in the future were recognised. The following conclusions are drawn:

1. The concept 'diffuse pollution' is not uniformly defined. For adequately dealing with the problem and the right choice of instruments, this definition needs attention.
2. Quality standards play an important role in priority setting. The actual choice of priorities depends on the geographical/geological and historical context of the country, convention or catchment.
3. Monitoring is essential in identifying priority problems, and has to be tuned to this identification. Monitoring also has an important role in following trends and communication on problems and results. Substance flow analysis is also an important aspect in identifying the problems.
4. Main sources of diffuse water pollution are:
 - agriculture (nitrates/nutrients and pesticides);
 - transport (road, air, shipping);
 - atmospheric deposition (especially on large water surfaces);
 - leaching from and corrosion of building materials and consumer products;
 - unauthorised/unsound disposal of waste;
 - non-canalised waste water (household discharges in rural areas).
5. Water quality problems are related to certain areas (vulnerability) and also to transportation/dispersion properties of the pollutants. This has influence on the scale of the problems (local, national, international) and therefore on the approach of the problems. For example, leaching materials and contaminated sites are local problems and can be handled locally/nationally; pesticides and

nitrogen, on the contrary, are national problems but should be handled internationally to avoid distortion of the internal market; transboundary transport of persistent organic pollutants etc. is an international problem and need an international approach. So an international approach should be based on international problems felt and on a necessarily international solution of a problem.

6. One particular approach of 'diffuse water pollution' does not exist. Different approaches can be distinguished, sometimes brought together in the form of an 'action program'. An action program is a set of (planned) measures directed either at a particular target sector, at a particular (group of) substances, or at a special geographic area. Such action programs are only available for agriculture (in all countries) at the moment.
7. Local, regional and national approaches are necessary to deal with most of the diffuse sources, especially when supported by a good mix of different instruments in cooperation between all appropriate administrative levels and target groups.
8. In approaches dealing with diffuse pollution river basin or catchment planning plays a major role. Catchment Management Plans might be a good start for identifying problems, presenting results of monitoring in relation to water quality objectives and standards, allocating the measures to the appropriate (administrative) level and ascertaining that all groups in society are participating in the approach.
9. Policy instruments to deal with diffuse water pollution can differ from voluntary action (e.g. on product or substance use) to strict regulation, both supported by financial incentives. A mix of instruments might lead to the highest results.
10. Awareness raising and education are very important to create mutual understanding and confidence in the policy by all parties concerned.
11. Feed-back of measures taken, including their results, is recognised as an important aspect in the approach.
12. Transboundary pollution can effectively be dealt with in cooperation between Member States at river basin and catchment area level. The exchange of positive results (successes) between Member States and response and feed-back by higher scale levels is important when a common problem is identified.
13. A role for higher administrative levels, e.g. EU, lies in tackling problems of a general transboundary nature, for instance long range transboundary dispersion of pollutants by air, or where competition distortion would arise from unilateral action (one or several countries).
14. Any international approach should be based on international problems felt and on a necessarily international solution of a problem, and has to give room for tailor-made solutions for country specific pollution problems. The Framework Directive on water resources offers a good opportunity in helping solving the problem where the international dimension is of paramount importance.
15. External integration is necessary. This means the recognition of the demands of good water and sediment quality by target groups outside the direct water management sphere and the integration of environmental evaluation into other policy fields. In preventing future diffuse water pollution the Environmental Impact Assessment may play an important role. Moreover the influence of spatial -planning in preventing (future) diffuse water pollution should not be underestimated. The European Commission, with involvement of the [REDACTED] Environmental [REDACTED] [REDACTED] play an important role in

fostering external integration, based on the common problems identified bottom-up by EU Member States.

- 16. Although the water quality approach is very important to assess whether priority must be given to certain sources of diffuse water pollution, prevention of pollution is equally important. Source oriented approach also helps in identifying problems and solutions.**
- 17. It is very important to look to the future and not only to the current situation. Autonomous developments, such as increase of population, activities and uses of water, should be taken into account when dealing with the problem of diffuse water pollution.**

INTRODUCTION

Background

Surface water can be polluted by emissions from two types of pollution sources: point sources and diffuse sources. As the main discharges from point sources directly into surface water have already been inventoried and for a major part regulated by permits, the emissions from so-called 'diffuse sources' have increasingly become a point of interest related to the improvement of water quality.

Diffuse sources can be defined in different ways; generally speaking diffuse sources are all emission sources not being point sources. In general they are present in large numbers (multiple sources) and widely dispersed around a country. Note that the concept 'diffuse sources' is not completely identical to the concept 'diffuse water pollution'. Figure 1 tries to explain the difference between the two concepts with the help of four situations. Households, for example, may act as a diffuse source to a municipal sewage system which acts as a point source of water pollution (discharges) (see figure 1a). On the other hand, atmospheric deposition will result in 'diffuse' water pollution, but will at least partly be the result of emissions from point sources into the air (figure 1 b). An example of a diffuse source causing diffuse water pollution (figure 1c) is agriculture, (e.g. application of pesticides and manure). The fourth situation illustrates a discharge by a point source directly to the surface water (e.g. industrial discharge). This situation is not a subject of this project (figure 1d). So, depending on the point of view, sources of pollution or water quality, one should speak of diffuse sources or of diffuse water pollution. In the underlying report both aspects are taken into account.

Diffuse sources can not or only very difficultly be regulated by permits for emission reduction to surface water. Since the mid-eighties The Netherlands are in a process of looking for ways and means to deal with diffuse sources of water pollution effectively. In order to be prepared for the discussions in Brussels about the revision of the Water Directives, the Dutch Ministry of Housing, Spatial Planning and the Environment commissioned a study on the possibilities of regulating diffuse water pollution at an international level. HASKONING Dutch Consulting Engineers and Architects was asked to carry out a first inventory. The project has been guided by the Ministry of Housing, Spatial Planning and the Environment, the Ministry of Transport, Public Works and Water Management and the Ministry of Agriculture, Fishery and Nature.