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**CHAPTER 8 A COMPARISON OF FIVE CASES IN IMPLEMENTING THE
EU WATER FRAMEWORK DIRECTIVE**

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8.1 *Introduction*

In this chapter, the results of each case study will be compared according to the two selected policy themes: the process of goal setting by the WFD and policy integration. First of all, under the heading of the goal-setting process, the results of the five case studies will be reviewed and compared on a number of topics: the designation of water bodies, the goal-setting process in steps, the use of exemptions, the programme of measures, the no-deterioration principle and resources. Subsequently, policy integration styles of the implementation processes will be compared and analysed.

We have looked at four cases similar to our reference case, which is the Dommel basin in the Meuse River Basin District (RBD), in the Netherlands. Not all the countries studied divided their RBD in the same way. For example, in the Netherlands, the Dommel basin is further divided into 4 sub-sub-basins, which could be similar to the scale of the case basin we have chosen for England and Wales (the River Wensum).

	RBD	Sub-Basin in Focus
The Netherlands	Meuse (8,000 km ²)	Dommel (1,000 km ²)
Germany/NRW	Meuse (3,700 km ²)	Rur (2,340 km ²)
France	Loire-Brittany (155,000 km ²)	Baie de St Brieuc (1,100 km ²)
Denmark	Jutland and Funen	Odense (1,046 km ²)
England & Wales	Anglia (27,000 km ²)	Wensum (571 km ²)

Table 4: River Basin Districts and the sub-basins in the various countries

It has not always been possible to compare the state of affairs at the sub-basin levels. This is mainly because some aspects of WFD implementation are predominantly placed under the responsibility of the national government in one case, while they are dealt with at the local level in another. A second reason is that at the stage of the implementation process during the case studies, not all information was publicly available and/or information was still under discussion.

8.2 *Goal-setting process*

Designation of water bodies

What does the WFD state about designation?

The designation of artificial and heavily modified waters must be mentioned in the river basin management plans (Article 4.3 WFD) (See Chapter 1 for the conditions for designating water bodies as heavily modified or artificial).

How do the Member States legally establish the designation of water bodies?

In the Netherlands artificial and heavily modified waters can be designated by both the Ministers responsible for the national water plan, and the provinces and the water boards for regional waters. When the new *Waterwet* comes into force (probably in the summer of 2009), the water boards will no longer have the competence to designate water bodies as artificial or heavily modified. In Danish environmental law it is not explicitly stated who designates the water bodies, but because the designation takes place in the river basin management plans, this will be done by the Ministry of Environment or by its Environment Centres.

The designation of water bodies in France should take place in the RBMPs, which are adopted by the river basin committee and approved by the river basin coordinator (*préfet coordonnateur de bassin*). Consequently, these authorities formally designate water bodies. In England & Wales it is the Environment Agency that can designate water bodies as artificial or heavily modified. In Germany the *oberste Wasserbehörde* determines the RBMP and is therefore also responsible for the designation of artificial and heavily modified waters.

How does designation take place in practice?

The status of the designation of water bodies in the countries/regions studied is depicted in the table below⁵⁷. Since the WFD leaves room for Member States to identify and designate water bodies, water bodies are designated differently throughout the Member States. Therefore, physically similar water bodies could be designated differently. This is especially so when deciding whether or not a surface water body is a heavily modified water body (HMWB), since an artificial water body (AWB) can be identified with relatively less discrepancy. We will focus on the discussion surrounding the designation of water bodies as HMWBs, since it is also the main concern of the relevant actors. It is important to note that the information compared here is based mainly on the

⁵⁷ Note that it was not possible to acquire information on the designation on a similar scale. While we can compare the information at the RBD level for the Netherlands, England and Wales, and France, for Denmark the information was only available for the national level, and for North Rhine-Westphalia (NRW) only for the *Länder* level.

preliminary designation exercise, and that the definite designation that will appear in RBMPs might turn out to be different.

As can be seen from the table, in comparison to other countries or RBDs, the RBD Meuse and the Netherlands provisionally designated a considerably higher number of water bodies as HMWBs. The Dommel catchment, which we looked at as our case basin, has no natural waters. Other studied countries, RBDs or sub-basins provisionally designated a lower or much lower percentage of water bodies as HMWBs in comparison to the Netherlands and its RBD Meuse. The RBD Anglia and North Rhine-Westphalia (NRW) come closest to that of the RBD Meuse in the Netherlands, and designated about half of their water bodies as HMWBs. The RBD Loire-Brittany and Denmark designated a much lower number of their water bodies as HMWBs.

Case RBD/Country	HMWB	AWB	Rest (Natural)
RBD Meuse (NL in total)	92% (42%)	7% (53%)	1% (4%)
RBD Anglia ⁵⁸	54%	15%	29%
North Rhine-Westphalia	> 60% together with AWBs		< 40%
RBD Loire-Brittany	10%	1.5%	88.5%
Denmark	10% together with AWBs		90%

Table 5: Designation of water bodies in the RBD Meuse, RBD Anglia, NRW, RBD Loire-Brittany and Denmark

The designation results have important consequences for setting ecological objectives. Once a surface water body is designated as a HMWB or AWB, the water body is exempt from the environmental objectives to attain good ecological status (GES). HMWBs and AWBs are to achieve good ecological potential (GEP) instead. GEP does not require HMWB/AWB to make all the necessary changes to its modified hydromorphological characteristics which would be necessary for achieving GES. While for normal (often called natural) water bodies, goals are set in order to work towards a good ecological status with the help of ‘natural’ reference conditions, goals for the HMWBs and AWBs are set based on the feasibility and desirability of measures to reach a good ecological potential. Therefore, at first glance, not designating a water body as HMWB (and hence setting the goal as GES) could mean that the water authority is striving for a higher level of water status when compared to designating the same water body as HMWB (and hence striving for GEP).

Having said that, and recalling the significant difference in the designation results so far in the table above, we believe that Member States or the responsible water authority could opt for strategic decisions on the designation of water bodies based on

⁵⁸ Not all water bodies have been preliminarily designated. Some water bodies are still to be designated.

characteristics other than the physical characteristics of the water bodies. We will look at those approaches in the following section.

What are the different approaches and strategies employed in designating water bodies? What are the arguments used for the choices made?

Before addressing these questions, it is useful to know which actors are responsible for the designation exercise. Except for the Netherlands, the designation exercises are conducted by the governmental agencies as shown in the table below.

	NL (regional waters)	NRW	E&W	FR	DK
Designation by:	Provinces, based on the information provided by water boards	Ministry of the Environment	Environment Agency	<i>Préfet</i>	Environment Centres

Table 6: Responsible authorities for the designation of water bodies

On the one hand, the Netherlands is recognised as an exceptional case, because of its high degree of modifications made to water bodies and the great amount of artificial water bodies created historically in the country. On the other hand, it was also confirmed in the interviews that some of the water bodies designated as HMWBs could be aiming for GES, and so perhaps should not have been designated as HMWBs. Some reasons underlying this discussion could be that the Netherlands is known to take a pragmatic approach towards the implementation of the WFD, and this could be one reason for the government opting for the designation of more water bodies as HMWBs. Interviewees pointed out that there is a political fear that once a water body is called a natural water body, that the aim will be to reach an undisturbed condition, which is not the case⁵⁹.

The reason behind this high designation of water bodies as HMWBs could also be found in the institutional arrangement. The practical designation exercise is conducted at a decentralised level (by water boards) instead of the national or provincial level, while water boards do not have the competence beyond water issues (such as spatial planning and agricultural activities) which has major consequences when attempting to reach GES. It then seems awkward to assign the task to the water boards, which cannot foresee exactly what the ‘significant adverse effects’ or ‘disproportionate costs’ related to required hydromorphological changes will be. While provinces and the national government need to assess and adopt the designations suggested by the water boards, in

⁵⁹ High ecological status means that there are no, or only very minor, anthropogenic alterations to the values of the physico-chemical and hydromorphological quality elements for the surface water body type from those normally associated with that type under undisturbed conditions. Good status means, however, that the values of the biological quality elements for the surface water body type show low levels of distortion resulting from human activity, but deviate only slightly from those normally associated with the surface water body type under undisturbed conditions (Annex V WFD). Therefore GES does not mean an undisturbed condition.

the case of the Dommel catchment, the province has accepted all designation proposals of the water boards.

In the RBD Anglia, the majority of water bodies were also designated as HMWBs or AWBs, leaving only about 30% of water bodies that will aim for GES (still considerably more than in the RBD Meuse). Unlike other countries and basins, the designation of water bodies at the Anglian river basin scale did not incite political or strategic discussions. At the river Wensum, however, there was also concern about the designation. This was because designation could imply a threat to attaining nature conservation goals once the river was designated as HMWB under the WFD, since it had already been appointed as a Site of Special Scientific Interest.

NRW previously identified a very small number of HMWBs. Recently, however, the designation of water bodies in NRW was reviewed, and a much higher number of water bodies were designated as HMWBs. The first reason for this review was technical, following the argument that the original method for designation was 'incorrect' and a new method was therefore adopted. A second reason was that NRW adjusted its designation process to the methods used in other neighbouring *Länder* and adjusted its designation, referring to the situation in the Netherlands, especially the bordering basins. According to the interviewees, there were also political motivations for the new designation results. Designating water bodies as HMWBs, and therefore setting the goals in a pragmatic way, was thought to create more flexibility and policy discretion and was therefore preferred.

In RBD Loire-Brittany, as well as in Denmark, the majority of water bodies (about 90%) were not designated as HMWBs or AWBS, and so they will be aiming to reach GES. Denmark took quite a different approach in comparison to that of the Netherlands. In Denmark, the WFD was rather clearly interpreted so that water bodies that were currently greatly modified, but could potentially be brought to natural conditions, were considered as natural waters. They therefore would strive to meet GES and not GEP, even if this might require an extension of the deadline or a complete postponement of the implementation of any measures for these water bodies until the next planning cycle (read more on exemptions). In Denmark, we must add to this point that there is still room for a political adjustment of the designation exercises.

Concluding remarks

Since the physical characteristics of the water bodies in each country and region differed, it is not possible to draw a clear conclusion as to the levels of ambition based on how the studied countries/regions designated their water bodies. However, the designation of water bodies was of crucial importance for each country when it came to setting their ecological goals. For many countries (especially the Netherlands and North Rhine-Westphalia), designating the majority of their surface water bodies as HMWBs allowed

them to gain policy discretion and flexibility in setting ecological goals. However, it is not that simple, because each country had its own strategies regarding the care with which it designated water bodies as HMWBs or not. As we have seen, Denmark took a rather different approach, appearing to set higher ambitions than those of the Netherlands, by not designating water bodies with considerable modification as HMWBs. However, we have also learned that in Denmark, designating water bodies as natural did not mean that those water bodies would meet GES by 2015, but that any actions to improve the status could even be postponed until the next planning cycle. Conversely, in the Netherlands, water boards (which guide the designation process) were perhaps not the correct authorities to conduct the designation exercises, having no competence over some of the crucial pressures on water quality. In general, however, the ambition to reach good ecological status and the intention to make the necessary changes to hydromorphological characteristics could eventually be considered as setting a higher ambition.

8.3 *Setting objectives and planning*

What does the WFD state about setting environmental objectives for surface waters?

Article 4.1 (a) for surface waters

(ii)

Member States shall protect, enhance and restore all bodies of surface water, subject to the application of subparagraph (iii) for artificial and heavily modified bodies of water, with the aim of achieving good surface water status at the latest fifteen years after the date of entry into force of this Directive....

(iii)

Member States shall protect and enhance all artificial and heavily modified bodies of water, with the aim of achieving good ecological potential and good surface water chemical status at the latest fifteen years from the date of entry into force of this Directive.....

(...)

(c) for protected areas

Member States shall achieve compliance with any standards and objectives at the latest fifteen years after the date of entry of this Directive.

How do the Member States transpose the general environmental goals and legally establish these goals as standards and norms?

Not all countries in our research have transposed the general environmental goal of reaching good status by 2015 into their national laws. Denmark (in the MML) and France (in the CE and further elaborated in a *circulaire*) clearly do so. Germany has transposed the general environmental goal at the federal level (in the WHG) and at the level of the

Länder (for North Rhine-Westphalia in the LWG). The deadline of 2015 is only transposed at the level of the *Länder* and not at the federal level. The GewBEÜV transposes annexes II, III and V of the WFD and contains the reference conditions. The Netherlands will transpose the general environmental goal into its formal legislation in the *Waterwet* in more general wordings. It will also transpose the goal and the deadline into an Order in Council (the *AMvB Kwaliteitseisen en monitoring water*) in 2009. In England & Wales, the general environmental goal is not transposed at all.

None of the investigated countries has yet defined the specific ecological environmental goals, although the environmental standards for substances that are part of the good ecological status are laid down in older water directives and national legislation. The daughter directive with quality standards for surface waters will contain part of the substances that are relevant for the good ecological status. However, most countries will soon produce legally binding documents to set these goals at the national level. In Denmark, a statutory order will set the standards for good ecological status. In the Netherlands, the specific environmental standards will be laid down in the *AMvB Kwaliteitseisen en monitoring water*. In the UK, the specific standards have been formulated by a technical working group. It is still under consideration how these standards will be implemented (either in a regulation or in a direction). In Germany, the WHG, LWG and GewBEÜV do not contain the specific quality standards. They will probably be determined in the RBMPs themselves.

It is often difficult to determine how the general goal (the 'good status') and specific environmental goals (environmental quality standards) are legally qualified. In the European legal context, environmental quality standards are obligations of result without any discussion. As far as the general goal of good status is concerned, it can be argued that this goal determines the boundaries of the policy discretion of the Member States. However, a legal qualification of these several obligations can have a different meaning in each of the legal systems that were researched. More can be said about this.

In Germany, the wording of the law, the opinion of the interviewees and the legal literature all indicate that the general environmental goal is an obligation of result. In France, the wording of the law and the opinion of a legal expert indicate an obligation of result as well. In Denmark, it is unclear whether or not the general environmental goal is considered to be an obligation of result. In England & Wales, no national general environmental goal has been laid down in legislation. According to a legal expert, however, it is likely that the UK will take the view that Article 4 of the WFD contains obligations of result. In the Netherlands, the general environmental goal is seen as an obligation of best efforts. The components of this goal (the good status of surface water and the good status of ground water) are explicitly mentioned as target values instead of intervention values in the latest draft version of the *AMvB Kwaliteitseisen en monitoring*

water. In all other countries, these are considered to be intervention values.⁶⁰ It should be remarked, however, that in Germany, the legal status of some goals for ecological status is still unclear.

	Transposition of general environmental goal	Legal qualification of general environmental goal	Legal qualification of specific goals
NL	Order in Council (in 2009)	Obligation of best effort	Target values
DE	On the federal (without deadline) and <i>Länder</i> level	Obligation of result	Intervention values (ecology still unclear)
FR	Law	Obligation of result	Probably intervention values
E&W	No transposition	Art. 4 WFD is probably perceived as an obligation of result	Intervention values
DK	Law	?	Intervention values

Table 7: Transposition of general goal

How is the goal-setting/planning process organised in practice?

Setting goals is not only about laying down legally binding standards and norms which reflect the environmental objectives of the WFD, good ecological Status and good chemical status. In practice, goal setting is also a step-by-step planning process: it is about investigating to what extent the water body (or river basin) can improve its ecological and chemical status, in what time period this is possible and deciding upon the desirable and feasible end-situation of water bodies. For GEP, standards and norms are usually not formalised in legal documents as described in the previous section, but are derived on a case-by-case basis, often through the so-called Prague method, and laid down in the RBMPs.

In general, the setting of specific goals (both GES and GEP) per RBD or sub-basin and the determination of policies and programmes to reach those goals was done in a rather complex planning process. In all countries, authorities at different levels of government were involved. On different levels, various stakeholders can also be of importance. In this complex process of goal setting and planning, various organisational frameworks and approaches are used and there are different underlying rationales for these approaches. In the following section we want to shed more light on this complex planning process.

⁶⁰ Although an expert indicated that the current texts leave some uncertainty regarding the effective implementation in France.

Who takes the lead in the planning process?

First of all, it is interesting to compare the actors who are of crucial importance when it comes to setting specific goals.

	Leading Actor	Responsible basin scale
France	Water Agency River Basin Committee	RBD
NL (regional waters)	Water board	Sub-basin
NRW	<i>Bezirkregierung</i> Ministry for Environment, Nature Protection, Agriculture and Consumer Protection	Several sub-basins
Denmark	Environment Centre	Several sub-basins
England & Wales	Environment Agency (EA)	RBD

Table 8: Leading actors in goal-setting process and their responsible basin scale

In France, there are semi-independent, functional water authorities called River Basin Committees. Together with the Water Agency (a functional ministerial authority) and its regional committees, the two bodies organised around a RBD are the main actors for goal setting and planning tasks.

In the Netherlands, water boards (relatively independent functional water authorities) play a major role in the goal-setting and planning process for regional waters, each looking after its own sub-basin. In the Dommel area this is done by so-called integrated regional planning processes (*gebiedsprocessen*). For every specific sub-sub-river basin, goals and measures are formulated and a cost/benefit analysis is conducted. Following the ‘up and down the staircase’ method (*trapje op/trapje af*), the goals and plans proposed by the water boards must be assessed and agreed upon by their provinces and the national government, which will lay down the goals and measures in their water plans. National waterways are cared for by the *Rijkswaterstaat* (RWS) and its regional offices.

In NRW, Denmark, and England and Wales, no independent, functional river basin authority exists as in the case of the Netherlands and France. In NRW, goal setting is carried out by the decentralised regional government (*Bezirkregierung*). These decentralised regional governments have dedicated offices for each sub-basin called *geschäftsstellen*, including one for the Rur basin, that carry out the goal-setting tasks at the sub-basin level. The Ministry, which is ultimately responsible for the RBMPs, coordinates and supervises this process. The central governments directly steer WFD implementation in both Denmark, and England and Wales, and planning and goal-setting activities are carried out at a more decentralised level as well. In England and Wales, the offices of the Environment Agency at the RBD scale are responsible for the

work. In Denmark, the Environment Centres, which belong to the Ministry of the Environment, carry out the task. It should be pointed out, however, that the employees of the Environment Centres – which are now responsible for water issues – were previously working at the county's administration: the employees therefore stem from decentralised government.

Stakeholder involvement

Stakeholders are most formally involved in France, through the River Basin Committees, where civil society and the market represent 40% of the committee members. In other countries, the influence of organised stakeholder involvement in the implementation process is less clear. For the RBD Meuse, a *Klankbordgroep* (a stakeholder sounding board group) has been set up in which all the major stakeholders in the basin are directly or indirectly represented. This group is also organised per sub-basin in the RBD Meuse. In NRW, at the regional government level and per sub-sub-river basin, a so-called Round Table (*Runde Tische*) has been established to discuss goals, and this involves stakeholders. In England and Wales, the EA also organises a Liaison Panel per RBD, involving stakeholders in the discussions of the WFD.

What are the different approaches and strategies employed in the goal-setting and planning process?

As described earlier, good ecological status (for NWB) and good ecological potential (for HMWB and AWB) are laid down in different ways. Moreover, there are also different methods which are possible for defining good ecological potential. There is a 'royal method' (resembling the method used for good ecological status, working with references derived from conditions of comparable natural water bodies and by defining the maximum ecological potential), and the Prague method, which starts from an estimation of all the possible measures that can be taken to improve the condition of water bodies (maximum ecological potential).

We can interpret these methods as back-casting (the royal method – taking the future reference as a starting point and looking back at what has to be done) and forecasting (the Prague method – taking the existing situation as a starting point and looking forward). Both paths should theoretically end at the same finish line, reaching the same target of good ecological potential. In a way, defining GEP is more complex in comparison to GES, which is defined at the national level. In order to define GEP, it is necessary to assess the possible potential of modified and artificial waters. How to define GEP and how to deal with it are questions for many actors in the field, both researchers and policymakers.

In some of the cases studied, the majority of water bodies were designated as HMWBs. This was the case in the RBD Meuse in the Netherlands, the RBD Anglia in England and

Wales, and NRW (which is also the RBD Meuse) in Germany. Therefore, for them, the main concern was to set and meet GEP.

Both in England and Wales, and the Netherlands, assessing what measures were feasible and/or economically feasible for implementation in the (sub-)basin became the key factor in planning, and therefore the Prague method was followed in setting GEP. In the Netherlands, water boards led the process of defining GEP and setting the specific goals for their regional waters as well as proposing the measures to be implemented. During this process, the discussion was mainly about the programme of measures to be taken in the coming years, and not about the goal itself. In England and Wales, the EA office at the RBD level first had to agree on the default objectives. Based on the objectives, the ministry (at the national level) drew up all possible measures to meet the objectives. At the RBD level, these measures were assessed and scenarios were drawn up using the measures. Again, the national level has the responsibility for assessing these scenarios in terms of cost effectiveness and proportionality. Finally the RBD can decide what objectives or alternative objectives should be aimed for in the basin and what measures are to be utilised.

In NRW, while the regional government (*Bezirksregierung*) set the goals for the catchment level, it did not ultimately decide on the programme of measures and did not have an overview of the economic consequences. Although NRW was said to set goals following the Prague method for their HMWBs, the exact status of the economic costs of measures remained unclear. The economic analysis of measures was conducted at NRW's ministerial level and it seemed that they decided which measures should be implemented. This could mean that the decisions at the ministerial level could bring a substantial change to the GEP set by the regional governments.

For RBD Loire-Brittany and Denmark, setting GEP goals was not seen as the central issue since they had a rather limited number of water bodies designated as HMWBs and AWBs. For most of their water bodies, GES standards were already (or are still to be) set at the national level. It is still interesting, though, to find out at which stage and to what extent the designing of the actual programme of measures (PoMs), and therefore the concern for the costs and political feasibility, is incorporated into their planning process.

In RBD Loire-Brittany, the goal-setting process was carried out in a parallel process, at the (larger-scale) basin level and the regional level. At the basin level, the Water Agency and the River Basin Committee set objectives in the overall planning document, the SDAGE (or the RBMP). At the regional level, the Brittany Committee, the office of the Water Agency in the Brittany region, was asked to investigate the measures and to speculate on the costs and the use of extension possibilities. Although at the beginning the Water Agency did not set a limit for the budget in complying with the WFD objectives, at a later stage, after the Water Agency had reviewed the plan of the Brittany Committee, the Committee was compelled to cut down its planned measures and

consequently reduce the ambition level by making use of more exemptions because the costs were too high and the Water Agency feared that the Basin Committee would not accept these costs and related higher taxes.

In Denmark, there was also a parallel process. At the sub-basin level, the Environment Centres set the goals and the programmes of measures (PoMs). They did so by identifying the most cost-effective measures without adjusting the objectives. Therefore the ambition was considered to be quite high (although considerable changes were expected after a review of the plan by the central government). The cost involved in the WFD implementation was the main concern of the central level. At this level, originally a more technical and scientific approach to goal setting prevailed, but the process shifted to a more political one. Seeing the high cost involved in the WFD implementation process, the government closed the process to stakeholder involvement and the leadership was handed over from the Ministry of the Environment to the Ministry of Finance. It is important to note here that the Godtfredsen Committee, which was established to think of the most cost-effective measures for WFD implementation, focused on economic efficiency and not on political feasibility.

Concluding remarks

When we look at the way the goal-setting and planning process was organised in the countries we compared, we find a few remarkable differences and similarities. In all countries, different levels of government were involved. In the Netherlands (water board) and in France (Water Agency and River Basin Committee) the functional river basin authorities took the lead in the goal-setting process. But what is different is that in France the river basin authorities set goals and made plans, but did not actually implement the measures themselves, while the Dutch water boards were highly involved in the actual implementation of measures. In France, this was the responsibility of the municipalities, which rather autonomously decided on how they would respond to the ambitions set (read more in the next section).

Other countries studied had no functional river basin authorities. Both in Denmark, and England and Wales, the goal-setting and planning process was rather centralised. In Denmark, both Environment Centres of the Ministry of Environment, and the Ministry of Finance were actively involved, and central government steered the process by way of the economic efficiency of measures. In England and Wales, where the Environment Agency took the lead, the approach was predominantly centralised. Germany was somewhere in between a central authority and decentralised, where the district-regional level was important, but the Ministry at the *Länder* level decided on essential matters such as the costs of the measures.

Having most of their water bodies identified as HMWBs or AWBs, in the Netherlands, NRW, and England and Wales, the goal-setting process was done in a more pragmatic

way, focusing on the feasibility of the measures rather than the goals that were to be attained in the coming years. Meanwhile, having a small number of water bodies identified as HMWBs and AWBs, in Denmark and France the planning process was more about thinking of the most cost-effective way to achieve the goals that had already been set and the use of exemptions.

8.4 Programmes of Measures

What does the WFD state about the Programmes of Measures?

Article 11.1. Each Member State shall ensure the establishment for each river basin district, or for the part of an international river basin district within its territory, of a programme of measures, taking account of the results of the analysis required under Article 5, in order to achieve the objectives established under Article 4. Each programme of measures shall include the 'basic' measures specified and, where necessary, 'supplementary' measures. 'Basic measures' are the minimum requirements to be complied with. 'Supplementary' measures are those measures designed and implemented in addition to the basic measures', with the aim to achieve the objectives established pursuant to Article 4.

Article 11.7 The programmes of measures shall be established at the latest nine years after the date of entry into force of this Directive and all the measures shall be made operational at the latest twelve years after that date.

Article 11.8. The programmes of measures shall be reviewed, and if necessary updated at the latest fifteen years after the date of entry into force of this Directive and every six years thereafter.

How do Member States legally establish the programmes of measures?

In the Netherlands the Programme of Measures can be found in all existing water plans (strategic plans as well as management plans) of the central government, the provinces and the water boards. In Denmark the municipalities are responsible for the implementation of the programme of measures, just as in France. In Germany, the programme of measures is determined by the Ministry for Environment. In England & Wales, the programme of measures is prepared by the Environment Agency and formally approved by the Secretary of State for Defra (for England) and the Welsh Assembly Government (for Wales).

How are the programmes of measures established in practice?

In this section, first of all, the main actors that are responsible for designing the programmes of measures (PoMs) are described. We will also look at the discussion on the distinction between the ‘basic’ measures and the ‘supplementary’ measures that are exclusively associated with the WFD objectives. Finally, the contents of the PoMs for some countries/basins are also discussed.

	Designing Programmes of Measures	Implementing the measures
NL(regional waters)	Provinces, water boards	water boards
NRW	Ministry	<i>Obere Wasserbehörde</i> and <i>untere Wasserbehörde</i> , also through <i>Wasserverbände</i>
E&W	Environment Agency	Environment Agency
FR	SAGE (municipalities)	SAGE (municipalities)
DK	Environment Centres	Municipalities

Table 9: Designing and implementing Programmes of Measures

In the Netherlands, the independent, functional water authorities (water boards) set part of the ecological goals and designed part of the programme of measures for the regional waters and also implemented these measures, all occurring at the sub-basin level. In most of the countries studied, this was not the case. In England and Wales, the same actor set the goals, designed the measures and implemented these measures. However, this was done by the ministerial agency, the Environment Agency, at the RBD level.

In Denmark and NRW, tasks were divided between the ministerial and decentralised levels. In NRW, the district level (*Bezirksregierung*) and the central level (Ministry) prepared the PoM while the measures were implemented mainly by the decentralised governments and the specific implementation organisations called *Wasserverbände*. For example, the Rur basin, Dusseldorf and Cologne regions, as well as the *Wasserverband Eifel-Rur*, were the main actors in implementing the PoMs. In Denmark, the Environment Centres prepared the list of the most cost-effective programme of measures for each sub-basin, and most likely there was a little room for the municipalities to choose alternative measures. It is still uncertain what degree of flexibility was granted to the municipalities in designing their own action plans.

France took a different approach. The Brittany Regional Committee of the Water Agency Loire-Brittany investigated the measures to be implemented in the Brittany region. The exercise was, however, only to estimate the cost and the use of extensions. It was at the (lower) SAGE level, as in the case of the Baie de St Brieuc, that the PoMs were designed and implemented. The municipalities involved in the SAGE had the freedom to adopt any measures as long as the goals set in the SDAGE were met. However, it was not certain whether local authorities were not only able but also willing to implement all the

necessary measures to fulfil the requirements of the WFD and the goals set at the river basin district level.

New or old measures?

Another point to discuss concerns the distinction between the ‘basic’ measures and the ‘supplementary’ measures, which is made by the Directive (Article 11.2/3/4). For the Odense river basin, the distinction was made very clearly in the draft management plan. The Environment Centre Odense first made an inventory of already existing as well as already adopted – but not yet fully implemented – policies and measures (basic measures). The expected status of water bodies, taking into account the effects of these measures, will be the baseline for 2015. Based on this baseline, supplementary measures that are needed to ensure the achievement of the WFD objectives are derived. In the Netherlands, the distinction between the WFD-related and basic measures was not as clear as in the Odense case. The measures listed in the RWS/Regional package included all the measures that are to be carried out until 2027. Only some water boards are said to have made a clear distinction between existing and ‘new’ or ‘additional’ policies. For other countries/basins, similar information was not (yet) available.

What kind of measures?

It is also important to compare the content of the programmes. In Denmark, it was concluded at quite an early stage by the national level that in order to reduce nitrogen in surface water bodies, it was most cost-effective to address diffuse agricultural pollution. The Godtfredsen Committee’s analysis was the main source for this idea. At the sub-basin level, the Odense river basin management plans also concentrated their PoMs along the same lines by allocating almost 50% of financial efforts to this sector.

Conversely, in the Netherlands, the main activities were expected to concern measures to improve spatial arrangements, such as nature-friendly banks and the re-meandering of watercourses. Nutrients reduction was not expected to be achieved through extra WFD measures (see the section on Integration). For the regional water bodies, water boards did not have the competence to address sectors other than the water sector, while the national government, which was responsible for the sector, would not subject the agricultural sector to extra measures. Since diffuse agricultural pollution was the main challenge in the Netherlands, this certainly meant that WFD objectives could not be fully met.

Concluding remarks

As we have briefly seen in the previous section, the general impression is that in France and Denmark the goals were first set at a higher level or river basin level (the SDAGE in

France and the sub-basin management plans in Denmark) and subsequently, necessary measures were designed either by the municipalities (France) or by the Environment Centres (Denmark). In both cases, the municipalities which implemented the measures were obligated to reach the goals set in the management plans, and therefore they had to formulate their own planning and measures (SAGE in France and the Municipal Action Plans in Denmark). In Denmark, the Environment Centres were likely to define measures in a way that left municipalities little flexibility in defining their own measures, while in RBD Loire-Brittany, municipalities had the freedom to define measures themselves.

It is rather unique that in the Netherlands it was the decentralised and functional water authorities – water boards – which took the lead in setting the goals and measures for regional waters. In England and Wales, both the goal setting and implementation was carried out by the ministerial authority (Environment Agency). Water boards (which had limited competence concerning water quality) were the main agency in implementing WFD measures in the Netherlands, and diffuse pollution was not directly addressed through WFD implementation. This is a very different picture to that in Denmark, where the national level defined the most suitable measures. At this point it is also important to stress that the water boards were reluctant to set ambitious goals for their water bodies in their management plans, because they wanted to avoid being accused of not reaching the objectives they had set themselves. This means that in reality, higher quality objectives might have been reached than what could have been expected from their plans.

8.5 *Financial Resources*

Do Member States expect an increase in their budgets for water management to meet the demands of the WFD?

Unfortunately, it was not possible to present the information on costs in a comparative way (e.g. the annual costs in euros/inhabitants), so we will only provide an impression of the related budgets in different countries and regions. It was often unclear which measures were endorsed by the WFD, and which measures had already been planned before the WFD or would have been planned without it. This distinction is important in order to shed some light on the estimated costs of implementation.

As seen in the section on Programmes of Measures, in the Odense river basin (Denmark), the extra costs needed for WFD implementation were calculated based on ‘supplementary measures’. In its current plan, the annual economic cost of planned PoMs to fulfil the WFD obligations in the basin would be 13 million euros in five years (between 2010 and 2015). Some 17 million euros were planned to be spent on water

management before 2015, but this is unrelated to the WFD. This means that about 43% of the total water management costs in Odense (until 2015) are related to the WFD.

In the Netherlands, the distinction was not as clear, and the estimation of WFD-related costs was made, but at a different scale (at the national level). In total, about 7.1 billion euros would be invested in water management from 2007 to 2027, and one-third of this amount (2.9 billion euros) was considered to be related to 'extra' WFD measures. Some 65%-70% of these efforts were to be made in the period 2007-2015. Therefore, both in the case of the Odense river basin and in the case of the Netherlands, an increase in resources for water management was foreseen due to the implementation of the WFD.

For other countries, the estimation of the costs for WFD implementation was also made, but with less certainty. In RBD Loire-Brittany, the water-related budget was expected to increase. The Water Agency for the District of Loire-Brittany was expected to spend about 2.9 billion euros between 2010 and 2015 (on total water management) and the same amount was also expected to be spent on the second and third planning cycle. Although this amount indicated an increase in the budget for water management, it is unclear how much was associated with 'extra' WFD measures. In NRW, an increase in the budget was foreseen. The Ministry of Environment announced that it was planning to add 10 million euros to the water management budget in 2009, and in total 50 million euros for 2010 and thereafter on WFD implementation.

Defra estimated the cost for implementing the WFD for the whole of the UK. Two scenarios were investigated. The first scenario, which aimed to reach good status in 2015, was believed to cost 1.3 to 2.5 billion pounds (1.5 to 3 billion euros) per year. The second scenario, which was politically preferred, aimed to achieve the objectives in the later planning rounds in 2021 and 2027, and to reduce the cost to the range of 0.7 to 1.35 billion pounds (0.8 to 1.6 billion euros) per year. The outcome of these calculations significantly exceeded Defra's earlier estimations. Again, it was unclear whether the costs associated with the scenarios included already existing measures. Although it was more than previously estimated, there was no indication of an overall increase in the budget for water management in RBD Anglia; it was considered to be 'business as usual'.

Concluding remarks

It is very difficult to compare the financial resources related to the WFD. This is not only because it was difficult to distinguish the budget related to the WFD from the general water management budget, but also because the information used reflected various scales, and costs might also have differed due to different calculation or allocation methods. Therefore, comparisons between the countries can only be made with great caution. It should be noted, however, that when we discuss the extent of WFD-related measures, that the Netherlands fulfils the obligations of many other water-related EU

regulations (such as the Urban Wastewater Directive and to a large extent the Nitrate Directive). For some countries, efforts are still needed to meet the demands of other directives, and they list related measures as WFD measures, which is not the case in the Netherlands.

8.6 *The Use of Exemptions*

What does the WFD state about the use of exemptions?

Article 4.4.

The deadlines established under Paragraph 1 may be extended for the purpose of phased achievement of the objectives for bodies of water, provided that no further deterioration occurs in the status of the affected body of water when...

Article 4.5.

Member States may aim to achieve less stringent environmental objectives than those required under Paragraph 1 for specific bodies of water when they are so affected by human activity, as determined in accordance with Article 5(1), or their natural condition is such that the achievement of these objectives would be infeasible or disproportionately expensive, and all the following conditions are met....

Article 4.6

Temporary deterioration in the status of bodies of water shall not be in breach of the requirements of this Directive if this is the result of circumstances of natural cause or force majeure which are exceptional or could not reasonably have been foreseen, in particular extreme floods and prolonged droughts, or the result of circumstances due to accidents which could not reasonably have foreseen, when all of the following conditions have been met:...

Article 4.7

Member States will not be in breach of this Directive when failure to achieve good groundwater status, good ecological status, or, where relevant, good ecological potential or to prevent deterioration in the status of a body of surface water or groundwater is the result of new modifications to the physical characteristics of a surface water body or alternations to the level of bodies of groundwater, or, failure to prevent deterioration from high status to good status of a body of surface water is the result of new sustainable human development activities.

How do Member States legally establish the use of exemptions?

Denmark, Germany and France have transposed the exemptions in their national laws in very similar wording as in the WFD.⁶¹ In the Netherlands, the exemptions are described in the *AMvB Kwaliteitseisen en monitoring water*, also in a similar wording as in the WFD. In England & Wales, the exemptions are not transposed into a legal document. A UKTAG technical guidance describes the use of exemptions. It does not describe the exemptions themselves, however.

How do Member States use the exemptions in practice and what are their rationales?

To make use of the exemptions, most of the discussion surrounded the use of the extension of the deadline and not the lowering of the objectives. Most countries looked into the second option only when extending the deadline did not help them to meet the WFD objectives. It is already obvious from the earlier sections that all basins/countries will apply a phased approach to at least some of their water bodies.

England/Wales and the Netherlands were the most pronounced in setting the goals of reaching the objectives in 2027 instead of 2015. In England and Wales, the DEFRA instructed the EA to make full use of the alternative objectives and extended deadlines. It was considered too expensive to try to reach good status by 2015. Making use of the three rounds of the RBMPs was understood to spread out the cost of WFD implementation. The ex-ante evaluation report of the Netherlands also stated that the measures for the WFD were to be implemented in a phased approach until 2027. The expected costs were used as the main argument. It was, however, recognised as uncertain whether these costs could be considered sufficiently disproportionate to legitimise the phased approach. Moreover, even with the phased approach, the GEP was not expected to be reached in more than 50% of the regional water bodies in the Netherlands.

For RBD Loire-Brittany and the Odense catchment, the deadline of 2015 was referred to as the deadline. This did not mean that they expected to reach the good status for all their water bodies by 2015. After some adjustment and decisions to make more use of extensions, 61% of water bodies in RBD Loire-Brittany were expected to meet good status by 2015, meaning that for 39% an extension of the objectives had to be employed. The central government had meanwhile decided that two-thirds of the water bodies should meet the good ecological status by 2015, limiting the use of an extension. However, it was not known what this would mean for the RBD Loire-Brittany. Germany as a whole made a strikingly low estimation of goal attainment by 2015, stating that only about 14% of surface water bodies would reach the environmental objectives. It was not clear what this meant for NRW, or for the Rur catchment. For wastewater management,

⁶¹ In Germany, this is done at the federal level only.

the targets were set at 2015. Most of the ecological goals were expected to be reached later than 2015 in the Rur catchment.

In Denmark, it was expected that the ministerial level might make certain decisions regarding where to use the exemptions when it came to diffuse agricultural pollution, while for other issues, Environment Centres would decide. It was considered to be cheaper to spread the cost in dealing with the agricultural problems over three phases. It should be noted, though, that the Odense pilot plan clearly stated the intention of meeting good status by 2015, with a limited use of exemptions. In this context, moreover, the Odense pilot plan did not make any reference to diffuse pollution as an argument for the use of exemptions. However, this could change after the review of the draft plan by the central government. Interestingly, the most use of an extension in the Odense basin was expected to be made by those water bodies that had a strongly modified character, but were not designated as HMWBs. Not only have the deadlines been postponed for these water bodies, but the decisions on environmental objectives and associated measures for achieving them have also all been postponed until the next planning period. Concerning watercourses, in this way an extension was to be applied to about 25% of them.

Concluding remarks

As in the cases for the Brittany region and the Odense fjord river basin, the regional process showed a relatively more ambitious position in terms of the degree of the use of extensions. However, for both cases the higher level (the national or the RBD) could influence the use of an extension if it so wished. Finally, it makes it very difficult to compare ambition levels among the countries by looking at the use of exemptions. While Denmark appeared at first sight to be very ambitious (in comparison to the Netherlands) in attempting to include so many water bodies as natural water bodies, it did not mean that these water bodies would have good ecological status in 2015, as shown in this section. At least their end goals were higher (not GEP but GES), as we saw in the section on the designation of water bodies.

8.7 *The Principle of No Deterioration*

What does the WFD state about the principle of no deterioration?

Article 4.1(a)(i)

Member States shall implement the necessary measures to prevent deterioration of the status of all bodies of surface water, ...

How do Member States legally establish the principle?

In all countries, except England & Wales, the principle has been transposed or was already present in national law. In Germany, it exists only at the federal level.⁶² In England & Wales, the principle is mentioned in a statutory guidance that DEFRA and the Welsh Assembly Government have issued to the Environment Agency. In England & Wales, France, Denmark and the Netherlands, deterioration is observed between status classes. In France and Denmark, this follows from the wording used in the law (the CE and the MML, respectively). In the Netherlands, the principle is not explained in the law, but in an explanatory note with the *AMvB Kwaliteitseisen en monitoring water*. In England & Wales, it follows from the wording used in the guidance. In all four countries, this deterioration is observed per water body. In England & Wales, however, this is not clear from any legal document. It can be observed, however, in a technical guidance paper by UKTAG.

The no deterioration principle in practice

We distinguish between four parameters which give meaning to the principle:

- The spatial scale on which deterioration is observed (water body, RBD, etc.)
- The time scale in which deterioration is observed (the time between observations and the starting date)
- The scale of seriousness that determines if deterioration has taken place (an increase in the concentration of pollutants, a change of status class)
- The possibility of compensating for deterioration with improvements elsewhere

France, Denmark and the Netherlands indicated that deterioration was to be observed at the start of each planning period. Some interviewees in Denmark, however, also indicated 2012 as a starting date, claiming that the no deterioration principle was only applicable when the Municipal Action Plans (which functioned as programmes of measures) were operational. In England and Wales it was not indicated when deterioration was to be observed. France, Denmark, and England and Wales did not state an explicit starting date. Interviewees in England and Wales did indicate, however, that 2006 would be a reasonable date, because that was when the monitoring programme started. In the Netherlands this was considered to be 22 December 2009. In Germany, deterioration was observed per water body as well. However, a legal expert and the interviewees had different opinions regarding the scale of seriousness that determined whether deterioration had taken place. According to the interviewees, deterioration was observed between status classes. According to the legal expert, deterioration consisted of every negative impact and could therefore also occur *within* a status class. In Germany, the principle had applied since the WFD entered into force (2000). No time scale was mentioned.

⁶² In the WHG.

According to a technical guidance paper by UKTAG, deterioration could not be compensated by an improvement in another water body in England and Wales. In the Odense pilot management plan it was stated that it could be acceptable to allow an increased pressure/pollution of a water body if this was the only way to prevent an enhanced and serious pollution of another water body. However, in general there was no possibility of offsetting – that is, allowing higher pressures on one water body by reducing the pressure on another. In the Netherlands, the *AMvB kwaliteitseisen en monitoring water* indicated that deterioration of a water body was allowed as long as the RBD as a whole experienced significant improvement in water quality, or if the improvement of one water body outweighed the deterioration of another.

	Seriousness of deterioration	Spatial scale	Starting date	Time scale	Compensation possible?
NL	Between status classes	Per water body	2009	six-year period	Yes
DE	Within status class?	Per water body	2000	?	?
FR	Between status classes	Per water body	2009	six-year period	?
E&W	Between status classes	Per water body	2006?	?	No
DK	Between status classes	Per water body	2009/2012	six-year period	In general, no

Table 10: Interpretation of the no deterioration principle

Concluding Remarks

Looking at the summary table, Germany seems to interpret the scale of seriousness most strictly (although the exact interpretation is a topic of discussion in Germany itself) and the Netherlands allows for more flexibility compared to other countries. The interpretation of the starting date is diverse. Again, Germany seems to interpret this most strictly, while in Denmark the date is considered to be twelve years later.

It is interesting to note that in all of the Member States we studied, the exact definition of the principle is not stated in legislation. It seems clear that, although Member States seem to have some idea of what the principle might entail, none of them seems to know for sure. Since the principle and its application are not very clear in the WFD itself, decisions of national courts or of the European Court of Justice are expected to further determine the exact interpretation of the principle. By not tying themselves down to one explicit definition in their national legislation but instead referring to the – vague – principle of the WFD, Member States avoid the problem of having to adjust their transposition legislation as a result of a possible conviction from the Court of Justice.

This way, failure to implement the principle correctly is restricted to an incorrect application of the principle by authorities in specific cases.

8.8 *Integration in General*

What does the WFD state about integration?

(16) Further integration of protection and sustainable management of water into other Community policy areas such as energy, transport, agriculture, fisheries, regional policy and tourism is necessary. This Directive should provide a basis for a continued dialogue and for the development of strategies towards a further integration of policy areas. This Directive can also make an important contribution to other areas of cooperation between Member States, inter alia, the European Spatial Development Perspective (ESDP).

The WFD doesn't ask for integrated water legislation, but ask for integrated water management. Member States are free to choose how they will translate this concept in their national legislation. Nevertheless, the European Court of Justice is of the opinion that integrated water legislation can be a very helpful tool to comply with the WFD obligations.⁶³ As far as environmental quality standards are concerned one can speak of a rights-based approach (see chapter one). They have to be implemented in national legislation and private parties must be able to rely on them in court. This leads to the conclusion that the EC is not particularly interested in who are taken specific decisions or measures as long as the environmental quality standards are met. This leads to the practical consequence that for the Member States integration is necessary because not all environmental quality standards nor the general environmental goal of the good status can be achieved without a proper integration.

How do Member States legally ensure integration?

The first conclusion of our research is that integration mostly takes place on the level of planning, more than on the concrete decision-making level, like the granting of licences et cetera. That is important to realise since in some countries, like in the Netherlands, plans are not legally binding. In Denmark, all state and local authorities are bound by the RBMPs and the PoMs when they make administrative decisions. The MML is considered to be legally superior not only to the Municipal Action Plans but also to the regional development plans and the municipal spatial plans which are then obliged to follow the requirements of the RBMPs. In Germany as well, the RBMPs are legally binding for all authorities. In England & Wales, each public body must take into consideration, in exercising its functions so far as it affects a river basin district, the approved RBMPs and any supplementary plan. In France, the spatial plans at all governmental levels and all administrative decisions concerning water should be compatible with the RBMPs but not with the PoMs. In the Netherlands, all new water

⁶³ ECJ Case C-32/05, Commission vs Luxembourg.

plans should take the water quality standards into account. When water authorities take more specific decisions (like granting a licence), they have to take their own water plans into account and no decisions or practical measures may be taken that will lead to non-conformity with the general goals of the Water Act. There is no formal legal obligation regarding competences in other policy fields or legislation to take the water quality standards into account. Since the national water plan (RBMP) is made by more Ministers (Minister of Transport, Water Management and Public Works, together with the Minister of Agriculture, Nature Conservation and Food Quality and the Minister of Housing, Physical Planning and Environment), all these Ministers have to take the decisions laid down in the national water plan (including the RBMP and the summary of the programme of measures) into account when decisions are taken at the national level. Through the *watertoets* – based on the Dutch Spatial Planning Act - water boards can advise authorities that make spatial planning decisions on the consequences of those decisions for water management. The authority taking the decision can derogate from the advice, but this should be justified.

The above is summed up in the following table:

	Authorities in general	Water authorities	Non-water authorities
NL	No general integration	Water plans should take quality norms into account; when making specific decisions authorities should take their own plans into account	Spatial planning: consult with water authorities and justify any derogations (<i>watertoets</i>)
DE	RBMPs legally binding on all authorities	Lower authorities are bound by the instructions of higher authorities	No general legal instrument to oblige other authorities to take RBMPs into account, but diverse legal instruments that ascertain at least to a certain extent policy integration
FR	No general integration	All decisions should be compatible with RBMPs	Spatial plans should be compatible with RBMPs
E&W	Consideration given to both RBMPs and supplementary plans	Covered by general integration	Covered by general integration
DK	Bound by both RBMPs and PoMs	Covered by general integration	Covered by general integration

Table 11: General, internal and external integration

It should be noted that it is difficult to say what ‘being bound by’, ‘have regard to’, ‘be compatible with’ and ‘take into account’ specifically mean. This greatly depends on the specific legal system of the country involved and also on how this is brought into

practice. Therefore, any comparison between the countries is difficult and it is also difficult to say whether integration is either 'hard' or 'soft' and whether or not authorities can derogate from the RBMPs and PoMs.

8.9 *Integration: Water and Nature*

How is the integration between the WFD and Nature legally established?

In Denmark and England & Wales, authorities in general are bound by or must consider the RBMPs. In Denmark the MML ensures integration. In other countries, integration with the nature sector is not explicitly ensured through their legislation, although in the Netherlands the fact that the Minister of Agriculture, Nature Conservation and Food Protection is also responsible for the national water plan and the RBMP should lead to a certain degree of integration, and - in Germany - nature conservation law and measures usually support the goals of a RBMP.

How does the integration between the WFD and Nature work in practice?

It is only in Denmark that the implementation of the WFD and the protection of Natura 2000 sites are legally coordinated under the MML. Through the Municipal Action Plans, municipalities must implement measures to meet the goals set by the Environment Centres for both the WFD and the Natura 2000 sites. Thanks to this legislation, the substantive integration of the two policy sectors is ensured in Denmark. In the Odense pilot plan, consideration of Natura 2000 sites is taken well into account by setting more stringent objectives than a good status for those areas. The water quality ensured under the WFD is considered to be the basis for complying with the Natura 2000 objectives related to water.

In NRW, the *Bundesnaturschutzgesetz* (the nature conservation act of the NRW) requires that once the area is designated under one of the manifold regimes of area protection, that all surface waters be protected as habitat for local flora and fauna species. This law contributes to the implementation of the WFD in NRW to some extent. To a limited degree, substantive integration is attempted in the Netherlands as well. The idea is that for the areas with high urgency according to Natura 2000 conservation guidelines, the water quality conditions should be ensured under the WFD before 2015. Water quality measures for Natura 2000 sites are now included in the water management plans and PoMs for the national waterways. However, for regional waters, the integration is less clear. In the Netherlands, integration between the WFD and Natura 2000 sites is still poor, although the necessity for this is recognised.

Organisational/institutional integration is more common for the integration of the WFD and Nature policies. In France, the River Basin Committees, which together with the

Water Agency establish the SDAGE, involve stakeholders that represent nature protection interests. In England and Wales, there is no explicit coordination and not much is being discussed in this field. However, some institutional/organisational integration can be expected. Natural England is responsible for the implementation of the Birds and Habitats Directives (in Wales the relevant body is Natural Wales) and is involved in the work of UKTAG. Natural England plays an important role in bringing nature conservation into strategic decision making on the WFD. Natural England is also involved in the Liaison Panel at the basin level to represent nature conservation. However, the influence of this Liaison Panel is uncertain. For Natural England, it is important to take protection zones (for example, from the perspective of the Birds and Habitats Directives) into account when designating water bodies. In the Wensum catchment, Natural England pursues the designation of the entire catchment as natural in order to sustain the high ecological goals (good ecological status instead of good ecological potential) for the area.

Institutional integration is also expected in the Netherlands. Since the national water plan (RBMP) has been signed by more than one Minister (Minister of Transport, Water Management and Public Works; Minister of Agriculture, Nature Conservation and Food Quality and Minister of Housing, Physical Planning and Environment), all these Ministers have to take the water quality standards into account when decisions are made at a national level. At the RBD level, there are Round Table meetings where stakeholders are involved in discussing the WFD implementation process, and at the water board level stakeholders are also involved in discussing the contents of the water programmes of the water boards and municipalities.

Concluding remarks

In most countries, integration between WFD implementation and nature management can be expected through institutional arrangements, where different actors are involved in the process of WFD implementation. Despite the fact that a great many of the objectives of the WFD overlap with those of the Birds and Habitat Directives, not many countries besides Denmark have structurally organised any integration between the two policy sectors.

8.10 *Integration: Water and Agriculture*

How is the integration between the WFD and agricultural policy legally established?

Again, in Denmark and England & Wales, authorities in general are bound by or must consider the RBMPs. In the Netherlands the fact that the Minister of Agriculture, Nature Conservation and Food Protection is also responsible for the national water plan and the RBMP should lead to a certain degree of integration.

An important legal factor for the Netherlands is that the decrease of nitrates in surface waters can hardly be influenced by the regional water boards, since they do not have the power to strengthen agricultural policy and legislation. More in general it can be stated that a great deal of attention is paid to the role and measures taken by water managers, while the largest problems, an overkill of nitrates and pesticides in surface waters, should be tackled at the central level. In NRW, to fulfil the WFD requirements, a regulation of the so-called *gewasserrandstreifen* or 'bank-belts' has been added to the LWC, requiring such belts to be adjacent to all surface waters, where the use of pesticides is forbidden. The use of manure is not necessarily forbidden, but can be forbidden by the *untere Wasserbehörde* if that is necessary to realise a RBMP.

How does integration between the WFD and agriculture work in practice?

The biggest challenge in implementing the WFD faced by all the Member States studied in this report is diffuse pollution from the agricultural sector. Among these countries, the Netherlands is known to have the highest level of over-fertilisation with nitrogen and phosphate in the EU.

In Denmark, when the WFD is discussed, a great deal of attention is given to the agricultural sector and its diffuse nitrate pollution. This is because it is generally understood that the cost-effectiveness of measures to reduce nitrogen in the water will be greatest when addressing the diffuse pollution from the agricultural sector. First of all, Danish PoMs will contain many measures directed at this sector. At the national level, the Godtfredsen Committee, which was tasked with investigating the most cost-effective measures, eventually decided to recommend a list of purely agriculture-related measures aimed at tackling the diffuse N and P pollution. When looking at the Odense plan, the majority of the implementation costs are allocated to measures for the agricultural sector. In Denmark, therefore, the agricultural sector is seen as the most important sector in WFD implementation.

In addition, the third Action Plan for the Aquatic Environment (APAE) has been set up for the period 2005-2015, harmonising itself with the planning cycle of the WFD and focusing on the agricultural sector. The Plan is expected to contribute substantially to meeting WFD objectives. However, some important measures are based on voluntary action, and it is widely feared that they will not be effective. Finally, the Danish farmers' organisation is eager to be involved and even to start its own initiative. This organisation knows that attention is very much focused on the sector and that it will be impossible to be unaffected by WFD implementation. The AGWAPLAN was established, seeking alternative ways to implement the WFD and focusing on voluntary actions and cost-effective methods that are less harmful to the sector.

In England and Wales, there is less focus on the agricultural sector, but the government has its own initiative to tackle diffuse pollution from the sector. The EA, working with DEFRA and Natural England, has set up the Catchment Sensitive Farming programme to encourage early voluntary action by farmers to tackle diffuse water pollution. The programme is designed to help achieve, in particular, the 2010 target for Sites of Special Scientific Interest (SSSI) and, from 2009 onwards, the PoMs required under the WFD. The Capital Grant Scheme (subsidies for farmers) is available for the first WFD cycle within the priority catchments which were identified by the Environment Agency and Natural England. Next to the Catchment Sensitive Farming programme, the Regional Rural Development Frameworks also integrate policies on water and rural development. The frameworks seek to bring together regional organisations to agree upon priorities covering environmental, economic and social issues. These regional chapters are to be brought into the England Rural Development Plan (in Wales, into the Rural Development Plan for Wales) and into the RBMPs.

In NRW, the Ministry follows a cooperative mode of integration by signing a voluntary agreement with agricultural representative organisations. To avoid imposing measures upon an unwilling sector, a so-called stepping-stone (*Trittsteine*) approach will be applied. In this approach, the agricultural organisations search for specific areas of agricultural land that can be reserved for adjustment so as to fit in with WFD-related measures. The Ministry believes that this approach is the most cost-efficient way to reach good status, where a certain number of sections with good hydromorphological conditions is achieved and as such is considered sufficient.

Institutional/organisational integration is common in all of the studied Member States. Traditionally, in France, the River Basin Committee represents stakeholders including the agricultural sector and the Committee produces the SDAGEs. In Denmark, the sector has been actively involved in the implementation process from the beginning. The Stakeholder Group, which existed at an early stage of the WFD implementation in Denmark, was set up by the Ministry of Environment together with the Ministry of Agriculture. Other countries have also prepared some arrangements to allow for stakeholder participation, but the impact of such gatherings is uncertain. In England and Wales, the agricultural sector itself is represented in the Liaison Panel at the basin level, and the EA has appointed Catchment Sensitive Farming officers in each RBD who are involved in the Liaison Panel. In the Netherlands, not only integration is expected by the fact that the Minister of Agriculture, Nature Conservation and Food Protection has signed the national water plan and the RBMP, but there are also Round Table meetings at the RBD level and at the water board level where the contents of the water programmes are discussed with stakeholders.

In addition, Denmark demonstrates a unique situation in which integration is promoted. The fact that the municipalities in Denmark are now obliged to achieve the objectives for the WFD as well as for the Natura 2000 sites set by the Environment Centres by 2015 has

had an important impact on the agricultural sector. There have been many cases where municipalities refused to issue environmental permits for livestock expansion, knowing that it might be costly for them to later buy the permits back in order to meet the environmental objectives. This has happened in spite of the fact that the national legislation on environmental permits for livestock expansion did not intend to restrict new permits. In France, as mentioned earlier, the decisions to issue permits for animal husbandry have to take the SDAGE and SAGE into account since the introduction of the new Water Act in 2006. However, the implementation of this provision at the local level is said to be uncertain.

Concluding remarks

Although diffuse pollution from the agricultural sector is considered to be one of the main obstacles in meeting WFD objectives, in most countries the integration has turned out to be difficult. From the analysis conducted, Denmark seems to be most prepared to address this issue. The government is proactive in including measures directed at the agricultural sector in their PoMs and the third Action Plan for the Aquatic Environment is now being harmonised with the WFD, focusing on the agricultural sector. Moreover, the municipalities, being granted the responsibility to fulfil the objectives set by the Environment Centres, are becoming more cautious in granting livestock permits. In contrast, in the Netherlands the integration of water management and agricultural activities is not expected to be endorsed due to the introduction of the WFD. Formulating the necessary source-oriented measures for the agricultural sector is not the task of the water boards, but of the national government through its general manure policy, therefore measures to reduce nitrogen and phosphorus are expected to be only derived from the Nitrate Directive. However, it is widely understood that the efforts to fulfil the requirements of the Nitrate Directive will not be enough to achieve the requirements of the WFD.

8.11 Integration: Water and Spatial Planning

How is the integration between the WFD and spatial planning policy legally established?

Again, in Denmark and England & Wales, authorities in general are bound by or must consider RBMPs. In France it is explicitly stated that spatial plans should be compatible with RBMPs. In the NL integration will be established by the fact that strategic water plans at the national and provincial level will at the same time be strategic plans (*structuurvisies*) based on the Spatial Planning Act. It should however be noted that these strategic plans are not legally binding. The aforementioned *watertoets* existed before the WFD implementation and the *watertoets* encourages integration between water and spatial planning. In Germany, there is no provision that directly binds spatial planning

and obliges the use of spatial plans to realise the RBMPs. Although water quantity and quality are explicitly mentioned amongst other basic principles of higher spatial planning and higher spatial plans could determine areas that primarily serve water goals in order to realise a RBMP, such an appointment to realise a RBMP is unlikely to occur. As far as the local plans are concerned, municipalities are explicitly required to take a RBMP into account. Moreover, non-privileged use of *buitengebieden* (open areas) is forbidden if it conflicts with a RBMP. As far as privileged usage is concerned, a RBMP may not be opposed.

How does the integration of the WFD with spatial planning work in practice?

In France, Denmark, and England and Wales, the integration between the WFD and spatial planning is encouraged through legislation. In France, the integration in effect occurs in substantive form at the local level, through municipalities making sure that urban and spatial planning documents are compatible with their SAGEs. In Denmark, spatial planning, like water, is subject to the responsibility of the municipalities, and spatial planning must respect the Municipal Action Plans which aim to fulfil the obligations of the WFD and Natura 2000. Again, the Municipal Action Plans and RBMPs are considered to be legally superior to the spatial plans. Although any authorities must consider the RBMPs in England and Wales, integration between water and spatial planning appears to be difficult. The influence of the EA on spatial planning affairs remains rather limited. Spatial planning is under the responsibility of local governments, and it is not the responsibility of the Defra. At the same time, local governments have almost no tasks concerning water. The EA is, however, working to encourage spatial planners to consider WFD objectives in spatial development plans through publishing some advisory guidance documents.

In the Netherlands, there is no explicit integration with spatial planning in the WFD implementation process. The quality standards set in the AMvB will only have a very limited effect on decision making in the spatial planning process, for example if one of the water plans (either the national or regional) demands that measures to be taken that involve spatial changes to achieve the quality standards. Moreover, these measures must also be transformed into the general Spatial Planning Law. Prior to introduction of the WFD, water management had already been integrated, especially in quantity terms, with spatial planning through the obligatory *watertoets*. This instrument also includes quality aspects.