77

Working with biodiversity goals in European directives

A comparison of the implementation of the Birds and Habitats Directives and the Water Framework Directive in the Netherlands, Belgium, France and Germany

R.C. van Apeldoorn

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Wettelijke Onderzoekstaken Natuur & Milieu

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Summary

The Netherlands is the only country in this study to have set ecological goals related to the Birds and Habitats Directive (BHD) at the national level. Neither Germany nor France and Belgium have been formulated such national- level goals and even the favorable conservation status at the national level is some times unknown or incomplete. This is mainly because of differences in the governmental system (federal and non federal), which lead to different responsibilities for defining the ecological goals between national and lower governmental authorities. In addition to this implementation has been approached differently processes in these countries. We can differentiate between 'top down' versus 'bottom up' implementation processes. Furthermore, most countries have decided to focus on writing management plans after defining the favorable conservation status of the protected species and habitat types. So, national overviews of goals do not exist or are only now being generated (in Germany), partly because of the obligation to report to the European Community (EC).

In France and Germany ecological goals are set at the site level (with the help of guidelines) and so are not easily comparable because they are general and/or qualitatively. In the Netherlands site- level goals have yet to be formulated.

Following the first phase of the implementation process including the selection and designation of the Natura 2000 sites, which took many years, the process in these countries now seems to be speeded up for several reasons. One reason is the relationship with the Water Framework Directive (WFD) implementation process and its tight timetable. In most countries only a few people are actively involved in both implementation processes and have an overview of their contents.

The number of selected sites is compared to the other countries relatively high for the Birds Directive and relatively low for the Habitats Directive, when compared to other countries. However, they have been accepted by the EC which is not the case in the other countries. Most countries, like the Netherlands, have not yet designated marine sites.

In all the countries, both those sites already protected as well as previously unprotected sites have been assigned Natura 2000 status, and in many cases different protection regimes have to be adjusted to the requirements of both European Directives. Especially the protection of nature and other types of land use on the sites have to be tuned. In all countries the management plans will play an important role in this tuning process.

From the point of view of ecological goals, it is acknowledged in all countries that the Natura 2000 sites will not go sufficiently far in preserving the favorable conservation status of some specific species. For this reason, initiatives are being taken to encourage the sites to function more as a real network (e.g. Germany, the Netherlands) or to pass additional legislation (France).

All countries are now involved in the process of writing management plans which are legally required in all countries except Germany. However, in France only pilot projects have been started. In France, many management plans (known as Document d'Objectifs- DOCOB's) already exist and their contents are similar to the first Dutch examples, although the ecological goals they mention are different in quantitative terms.

In all countries, it is clear that realizing ecological goals can impact on other kinds of land use within and outside sites. The most important of these are agriculture, forestry, fishery and hunting. Groundwater and water-related activities can also affect the ecological goals of a site and must be adjusted to these goals, a process that can require a high degree of investment and management costs. How this is to be arranged is not yet clear in most countries, but some examples exist (e.g. in the Netherlands) of sites with less ambitious ecological goals because of high management costs.

In order to attain the goals, all kind of private managers need to become involved. In all countries this will be done using contracts. This kind of management will be based partly on financial compensation. However, in Germany for instance some management measures or activities will be excluded from compensation because they are viewed as 'skilful or basic management' which does not focus on ecological goals that exceed the formulated standards for 'basic level of protection for water, soil and nature'. In combination with a shortage of funding for compensation, this can lead to the risk of formulating over- cautious goals for habitat types that require relatively expensive management. A European wide analysis could make this risk clear.

Realizing ecological goals in cross-border sites needs discussion and coordination but hardly any such sites exist where the authorities and other stakeholders cooperate in writing a collective management plan.

In terms of the area of the Natura 2000 sites, Belgium, the Netherlands and Germany have selected a relatively high number of small sites. One reason for this is that the goals can only be realized on these sites and not elsewhere. The effectiveness of the site management in these countries reaching their ecological goals depends heavily on external (abiotic) conditions (see above) and the effects of external activities. In France, goals can only be reached if the existing use of the sites can be harmonized with the ecological conditions required. In all cases the problem of reaching the ecological goals will depend heavily on the involvement and willingness of other (groups of) stakeholders. In all countries it is acknowledged that this is often a problematic and time- consuming process. The question of how to deal with this problem does not have one answer, as is also shown by looking at these countries (see also Neven *et al.*, 2006).

However, much (in terms of 'dos and don'ts') can be learned from the French experience, which started earlier than most other European countries, of using bottom up participation processes in the Natura 2000 sites.

Apart from differences in the type of implementation process, it is remarkable that, with the exception of the Netherlands, the lowest governmental level (e.g. the municipalities) play a formal role in formulating ecological goals or play an active role in writing management plans in all countries. In the Netherlands, an advisory group was created only recently to advise governmental authorities in particular on implementation-related problems. This is in contrast with the implementation process of the WFD in the Netherlands, in which municipalities have become actively involved. This is one reason for the low level of awareness of the BHD and less well- accepted by the Dutch municipalities and other private organizations.

Experience in all countries shows that ecological goals will be disputed at some point during the implementation process, irrespective of whether a bottom-up or top- down approach has been adopted. The outcome of such discussions has not been reported in the countries so it is too early to draw any conclusions about the effectiveness of the different approaches to implantation. However, all the ecological goals formulated during a bottom-up process are

based on a high degree of social acceptance (as in France). Such an approach can also lead to better integration of ecological goals and other (economic) interests or better solutions to (goal- setting and management) problems related to the implementation of the different directives, such as both nature conservation directives and the Water Framework Directive.

In the Netherlands and Germany (for example in Lower Saxony) in particular, the process of implementing the BHD and the WFD was begun by integrating the ecological goals of the directives into the (water) management plans (Germany) or into a single management plans for Natura 2000 sites.

Quite apart from being a time-consuming process, it is worth noting that a lack of experience in managing participation processes and in 'integration' thinking, as well as a shortage of specific (technical) knowledge and ecological data or expertise, have hindered the effective and efficient integration of the directives. Additionally, strict time tables (compare WFD) and existing-money budgets (compare in the Netherlands the budget neutral proviso for BHD implementation) have proved further obstacles to successful integration. This is illustrated by a tendency in all countries to take the existing situation of the water bodies as a template, which has in general led to less ambitious ecological goals. In the Netherlands, although the nationally formulated goals for some species and habitat types show that their favorable conservation status must be improved, this has yet to be incorporated into the management plans. In both countries, technical measures that favor fish species are more accepted than measures which focus on regulating nutrient loads to improve water quality.

However, in most countries, the authorities are emphasizing the integration of the directives and communication and cooperation at the lowest levels in particular is being encouraged.

1 Introduction

During the implementation of the ecological goals of the Birds and Habitats Directives in the Netherlands, many of the stakeholders involved inside and outside the country felt that high ambitions occur (Neven *et al.*, 2006). The same feeling has been expressed in discussions around the implementation of the Water Framework Directive in the country. Although it is not clear if these feelings are justified they can color the discussions on the ecological goals and the finding of solutions for acknowledged problems.

Comparing the ecological goals which were formulated in relation to the Birds and Habitats Directives (BHD) and their implementation to those related to the Water Framework Directive (WFD) between the Netherlands and some of its neighboring countries (Belgium, France and Germany) will help to bring to light any similarities and differences between their (biodiversity) ambitions. To this end data was collected from these countries by interviewing employees at institutes involved in or familiar with the implementation process of both directives (see Appendix 1).

By describing the goals, protection regimes and instruments put in place it will become clear whether these countries experience the same problems, find the same solutions and whether cross-border cooperation is possible and practical. Such a comparison can also show how the ecological goals of the BHD and WFD are related and to what extent the existing degrees of freedom can be used.

The Statutory Research Task Unit for Nature & the Environment of Wageningen UR commissioned the project.

2 The Netherlands

2.1 The Birds and Habitats Directives: selection and designation of sites

In the Netherlands the ministry for Agriculture, Nature and Food Quality (hereafter the ministry of ANFQ) is responsible for the formal implementation of both directives. Under the guidance of the ministry 162 Natura 2000 sites (SAC's - *Special Areas of Conservation* - and SPA's - *Special Protection Areas*) were selected (Ministerie LNV, 2006; www.minlnv.nl/portal). These sites represent 1,115,485 hectares of which about 300,000 hectares are on land (and small bodies of water). Marine, intertidal and large fresh water sites constitute about 800,000 hectares (MNP, 2007 in press). Of the total area of the Netherlands 12.5% will be protected under the Birds Directive and only 9.5% under the Habitats Directive. Four further marine sites have been selected but have not yet been submitted to Brussels.

This list of 162 sites has been approved by the EC. In early 2007, the formal designation process began with the publication of a draft governmental order for 111 sites in the state journal, beginning with a number of public hearings across the country. These hearings will, for the first time, provide the public with detailed information from the ministry about Natura 2000. The minister will decide whether the feedback received will be taken into account. After the public hearings phase, and possible changes to the draft governmental order, the sites will be officially designated as SCIs (*Sites of community importance*) but public appeals will still be possible. Later this year the other sites selected will undergo the same procedure.

The four marine sites selected will follow the same formal designation process after amendments have been made to the nature conservation law. The sites were split into two groups following the designation process, as a result of problems setting the ecological targets by the ministry of ANFQ and various other governmental managers of sites. For example, the ministries for Transport, Public Works and Water Management and the ministry for Defense together manage more than 70% of the total area of the selected Natura 2000 sites; see also 1.2).

On land more than 50% of the total protected area is owned and managed by state. Independent but governmental related (such as the State Forestry Service) and private nature conservation organizations such as '*Natuurmonumenten*' own and manage protected sites across the country. The private '*Provinciale Landschappen'* also own and manage sites but each is limited to its own province.

Some sites are managed by more than one management organization. About 20% of the total area of sites (60,000 hectares) have been owned and managed by about 6000 farmers (MNP, 2007).

2.2 Setting the ecological goals and writing a management plan

Setting the goals

The Ministry of ANFQ took the lead in formulating national ecological goals, mainly with the help of experts (biologists, ecologists) and their organizations and of nature managers. These first results were discussed with the provincial and other authorities and major social organizations were consulted.

Before setting the goals habitat types were defined, and their relative importance within Europe and for particular species was analyzed. Their favorable conservation status was then defined, which resulted in national goals, such as the area (hectares) to be preserved and the quality of the habitat type, or an increase in this area or its quality. For species, a kind of carrying capacity was also formulated in terms of the number of breeding pairs that were to be preserved or a level which this number was to reach. These goals are related to and express the internal coherence of the whole Natura 2000 network in the Netherlands (LNV, 2006).

For a number of sites a 'sense of urgency' status was formulated, indicating the need for specific (management) measures within 10 years to prevent irreparable damage. How the ecological goals will be translated into site- specific ecological goals will be worked out in each site management plan. The nature conservation law stipulates that these plans are to be written.

Goals formulated to improve habitat types (e.g. habitat type 1110: permanently flooded sand banks) are sometimes explicitly dependent from research or new developments within other sectors (e.g. fisheries).

Writing a management plan

It is the responsibility of the main owner and/or manager of a site to write a management plan. For state-related and private management organizations, this means that this responsibility falls to the province in which the site is located. Provincial authorities are responsible for about 60% of the plans, national authorities (ministries) for about 40% (this share is divided between the ministries of ANFQ and Transport, Public works and Water Management, with approximately 25% and 15% respectively). In the plans the existing and future use of a site is described to make it clear for which activities or plans (within and possibly outside the site) a permit will be needed. The management plans thus create an opportunity to integrate the ecological goals with other economic goals, if necessary (integral decision making).

Management plans for sites under the responsibility of ANFQ will be part of a consultation process under the guidance of the State Forestry Service and the National Rural Development Agency. However, it is not yet clear how the process of writing the plans will be organized for the other sites. Only one management plan has so far been written.

An exchange of experiences with German and Belgian organizations in writing management plans for trans-border sites that fit the directives has not yet been started with, with the one exception of the plan for the river Ems estuary.

Content of a Dutch management plan:

- current situation and trends
- measures required and ecological conditions to preserve or reach the favorable conservation status
- existing or future use of the site that will not affect the ecological goals
- relationship between the goals and projects or other regulations or laws
- organizations and/or administration that is responsible for executing the conservation measures required
- calculated costs and financial sources to execute the management measures
- methods to monitor the management

(source LNV, 2005)

Contract-based management and finances

A number of governmental and private organizations and persons carries out the management of all protected sites (not only Natura 2000 sites) in the Netherlands. As mentioned before, the most important are the three ministries (ANFQ, Transport, Defense), the State Forestry Service, '*Natuurmonumenten*', and '*de Landschappen*', but drinking water companies and farmers also manage (parts of) protected sites. Excluding the ministries and the drinking water companies, who have their own management budgets the other managers are financed by the ministry of ANFQ by using contract-based management. For farmers this is organized and financed by agri-environmental schemes and contracts.

Roughly one third of the total of land-based protected areas will be under the protection of the BHD and the estimated costs for the preservation and management of the protected habitat types and species on these sites is also one third (approximately 11 million euros) of the total management budget (Reinhard *et al.*, 2006).

This result seems to correspond with the statement made by the minister of Finance at the start of the implementation of the BHD, that the Natura 2000 sites should be managed in a cost- neutral way. It is not yet clear whether this will be possible because the ecological goals for each site have yet to be formulated.

However, other additional costs and extra investments (one-of costs) are needed to attain the formulated ecological goals set by the ministry of ANFQ. Measures necessary to improve some habitat types inside and outside the protected sites are particularly expensive (compare measures outside a site to increase the groundwater table).

A recent analysis of the management costs of all Natura 2000 sites (on land and water) estimated additional costs to be in between 29- 48 million euros and unique costs between 52 and 203 million euros (Reinhard *et al.*, 2006). However, a large part of these costst is related to management measures that also have to be taken because of the implementation of the KRW. Furthermore, the largest part of the one-off costs relates to the management and improvement of large water bodies that are under the supervision of the Ministry for Transport, Public Works and Water Management and are partly also KRW related. For this reason negotiations at high policy level have taken place between this ministry and the ministry of ANFQ, resulting in adjustments to the ecological goals for some sites.

Public participation

As stated above the selection and designation of the Natura 2000 sites in the Netherlands has so far been guided by the ministry of ANFQ and carried out with the help of experts and expert organizations. The only other bodies to be consulted during the selection process were the lower government (the provinces and the central organization for municipalities) and the main nature conservation organizations which manage sites. The public image of the BHD was very bad at that time which causing many problems in the implementation process (IBO-werkgroep, 2003). The process of informing and communicating with the public about Natura 2000 was recently started by publishing the draft governmental order for 111 sites and by organizing public hearings. However, it is unclear what will happen with the feed back gathered from these hearings.

In a few cases, Non Governmental Organizations (NGOs) were involved in the implementation process, as well as authorities and managers. At an early stage of the BHD implementation process in the area of the Wadden Sea, a participation process was begun involving all the stakeholders. This process resulted in an agreement between all parties on the way how to develop the whole process and deal with the obligatory ecological goals for the whole area (Ligthart & Neven, 2000).

Because of insufficient information and the almost complete lack of formal public involvement so far, it has become clear that the social acceptance of the BHD and its management of Natura 2000 sites is rather missing among municipalities. Although the provinces and the site managers are more optimistic, other groups of stakeholders have, at best, a neutral opinion of the BHD. Many of them have negative expectations on the way their interests will be dealt with in writing the management plans (Bosch *et al.*, 2006).

2.3 The Water Framework Directive: the implementation process

In the Netherlands the ministry for Transport, Public Works and Water Management (TPW) is responsible for implementing the Water Framework Directive (WFD). This ministry (which is large and politically important because it has to safeguard the country against the risk of flooding from the sea and inland rivers) began the implementation process from a practical point of view and by involving its lower regional departments from the outset.

At the lowest level – that of sections of the river basins- these regional departments cooperate with the water boards and the provinces on implementing the WFD. They are guided by policy boards consisting of representatives from the provincial government, the municipalities, the drinking water companies and the regional administration of the ministry of ANFQ.

Due to the practicalities involved, the ministry and its departments abandoned the process of formulating ecological reference situations for river basins and their management plans at an early stage. Instead, they are in the process of analyzing which practical measures could be taken resulting in the ecological goals that seem reachable, the ecological benefits of the measures and their costs. In this way, it will become clear in which river basins, or parts of the river basins, the existing situation will improve. However, because no reference situation has been formulated it is unknown which ecological better status or opportunities will be missed. Furthermore, an approach which only considers costs will fail to take into account the possible economic benefits of Natura 2000 sites (e.g. thinking of recreation). This way of implementing the WFD is different from the BHD implementation, which started with formulating the ecological goals at the national level, and these nationally set goals then had to be worked out into the management plans for specific sites.

Nevertheless, the TPW' s practical approach has been accepted within Europe by many other countries and is known as the "Prague method" (MNP, 2006).
The ministry follows the implementation timetable of the WFD and has finished its monitoring scheme and network.

However, implementing the WFD in a 'top-down' manner, the ministry has organized discussions within its regional departments on different standards such as the Good Ecological Status (GES) of natural water and the Maximum Ecological Potential (MEP), the Good Ecological Potential (GEP) of strongly changed and artificial waters (MEP/GEP) and internal evaluations of methods and case studies on how to describe the ecological goals. The ministry is also involved in many projects together with different groups of stakeholders (municipalities, water boards), assessing the impact of the measures taken and formulating goals.

The ministry is also active in informing lower authorities such as provinces, municipalities and regional water boards (managers of inland water bodies) about the WFD. It has also initiated a project focusing on the participation of important stakeholder groups such as young farmers. To communicate ecological goals to all kinds of stakeholders these goals have been translated into visual images.

The first contact between those implementing WFD or Natura 2000 sometimes takes place at the lowest regional and local levels. So far both implementation processes have developed independently (Gerritsen, 2006). However, the ministry of TPW recently organized (March 2007) an international seminar on the relationship between Natura 2000 and economic activities including the WFD and is promoting the integration of both types of management plans. It has started writing draft management plans for those Natura 2000 sites which it is responsible for.

A stronger relationship between both implementation processes is necessary for several reasons (MNP, 2006). One external reason arises from private stakeholder groups such as the union of farmers, which is concerned that the WFD will force the implementation of all WFD standards and goals for protected sites (Natura 2000) by 2015. The farmers are concerned about long-term constraints on their activities, particularly in relation to those sites with ambitious ecological goals which are unlikely to be met by that year. However, in the same cases, there is the risk that these ecological goals will be revised and made less ambitious.

2.4 The ecological goals of the BHD and WFD

Implementing the WFD in a 'top- down' manner the responsible ministry of TPW started to formulate goals from a practical point of view without reference situations and emphasized the importance of attaining the ecological goals set by the WFD and BHD, integrating both directives into their plans. As a consequence, one integrated management plan will be written for all the large (government-owned) waters that are managed by the ministry of TPW.

In relation to the BHD, during the period up until 2015 the focus will be on measures that have to be taken to solve problems related to ground and surface water in a selected number of Natura 2000 sites. The main criteria for selecting the right measures are that they are 'budget-neutral' and will be socially acceptable.

During the WFD implementation process and the question of the analysis of water quality standards in relation to ecological goals (discussion on *good ecological status* or GES and *good ecological potential* or GEP) MTR (*Maximum Tolerable Risk*) standards for nutrients have been replaced by more qualitative guiding principles in terms of the ecological quality of water bodies. This quality should constitute the basis for which nutrient levels are acceptable (Ministerie Verkeer en Waterstaat, 2006). The ecological quality of a specific water body is classified as 'good' if it has a 90% chance of reaching (or has already reached) the good ecological status for natural waters (GES), good ecological potential (GEP) for artificial or changed water bodies. It is possible for water bodies to show a 'good' ecological status while containing higher nutrient loads, or show the accepted concentrations without showing the right GES. In both these cases, further analyses will be made before measures will are decided upon to rectify the situation. The measures are only formulated for those water bodies that do not fulfill the GES or the accepted nutrient concentrations.

Working in this way the ministry of ANFQ, as well as the ministry of TPW, have noticed that there is a risk that the ecological goals formulated by the BHD and the measures of the WFD formulated as workable and affordable will be incompatible; the ecological goals of other international treaties (e.g. OSPAR) may create further incompatibility. Furthermore, it has been calculated that all the measures formulated can only be executed in a budget- neutral way if they are executed at around 70-80% (Ministerie Verkeer en Waterstaat, 2006).

This tension can further be illustrated by discussions at high national- government level between both ministries on the BHD goals for a few large Natura 2000 sites managed by the ministry of TPW. Confronted with ecological goals which demand very expensive management

measures, these goals have been revised and made less ambitious. Additionally, it has been agreed to harmonize the ecological goals and their financial consequences for some sites first to analyze these consequences before the ecological goals are fixed.

As regards the measures related to groundwater, it is not only the ecological reference situation which counts but how realistic they are in financial and social terms. So it has been stated in formal governmental documents that if ecological goals do not fit into the existing budgets, they will be reformulated in a less ambitious way by the minister of ANFQ (Ministerie voor Verkeer en Waterstaat, 2006)

Whatever the existing tension between both methods of implementing the WFD and BHD, it was shown by analyzing the possible negative effects of several water management measures on a few protected species and habitat types that many construction measures seem to correspond well with their ecological needs. This can be illustrated by the measures to stimulate fish migration. However, many other measures have negative effects or maybe positive (Paulissen *et al.*, 2006).

The main ecological goal formulated is that the natural gradient between salt and fresh water should be preserved or restored in each river system (Scheldt, Rhine, Meuse and Ems) and construction measures have been planned for all big rivers. Thousands of pumping-engines and weirs still have to be adapted, however, to enable fish species to migrate into their spawning grounds. It has been agreed that if turbines of water power stations are to be renewed, the new ones are to be constructed in a fish- friendly way.

Nevertheless, the success of implementing the directives is strongly related to the way in which the ecological goals of the WFD and BHD can be realized by integrating goals and management measures into the management plans at site level.

Here problems exist (Vertegaal & Toorenbeek, 2006). In the Netherlands small ecological valuable water bodies exist that are too small for the defining criteria concerning of area (non-running-water bodies> 50 hectares and running- water bodies > 1000 hectares). If the borders of the water bodies are determined in another way, they are sometimes too large. In the latter case, the area of the bodies is too large to cover the ecological goals of small but ecological important water bodies such as fens and ponds. In the first case, areas around or between water bodies that influence their water quality are not included.

Furthermore, some land areas will become part of water bodies by 2015 because they have to play a role in the new water policy of the ministry of TPW related to climate change. Given their future function they must be included in the list of water bodies.

The surface area of water bodies also relates to monitoring schemes. Monitoring small water bodies with a good ecological status does not show the same status of the larger water bodies they are related to.

Apart from the problems related to defining the water bodies at the right (ecological) spatial level, the water quality standards required to meet the ecological goals of the BHD (e.g. numbers of feeding water birds) can also conflict with WFD standards which focus on the realization of oligothrophic to mesothrophic water conditions.

Furthermore, water quality is strongly dependent on nutrients as a result of agriculture. Analyses show that GEP standards for phosphorous and nitrogen in ditches and streams can only be reached if other environmental policies are successful.

Cross- border exchanges of experiences in formulating MEP/GEP goals has taken place with neighboring German states (Lower Saxony and North Rhein- Westphalia) and the process of drawing upon a common management plan for the Ems estuary has been started.

The ministry is following the implementation timetable for the WFD and has its monitoring scheme and network ready. However, as regards the BHD some short comings have been noted. For instance, out of 18 fresh- water species protected under the BHD that are to be monitored, 14 are still not part of any monitoring scheme of which 10 are fish species. This is the same for all protected (fresh water) aquatic habitat types (Vlek *et al.*, 2006). Also, monitoring methods and schemes for some marine species and habitat types are not adequate and have yet to be developed.

3 Belgium

3.1 The Birds and Habitats Directives: selection and designation of sites

Because of the Belgian federal status the implementation of the BHD has been organized differently in each of Belgium's three regions. In the Flemish Region, responsibility for implementing the BHD (and the WFD see 3.3) falls to the Ministry for Environment and Nature and its "Environment, Nature and Energy" department (the former AMINAL).

Across the country as a whole 278 SCIs have been selected and 229 SPAs. About 75% of the selected sites were already protected areas, but 25% still need an adequate protection regime. Most of the selected sites are part of the Flemish ecological Network (as is the same in the Netherlands).

3.2 Setting the ecological goals and writing a management plan

The protection of Natura 2000 sites will be formalized in what is known as a '*Natuurrichtplan*'. Such a plan describes the (ideal) ecological situation for the site (including the ecological goals) and the (management) measures necessary to reach this situation. The plan will be used to examine other kinds of land use or plans and projects other than the situation described. It also describes several kinds of compensatory measures. The plan thus focuses on the integration of nature conservation with other kinds of land (or water) use. The plan is developed with public participation but must be proved by the regional government (Hoorick, 2004). Pilot projects for writing such plans have recently been started.

The Flemish Agency for Nature and Forests plays an important role in the process; it chairs and coordinates a writing group of administrative deputes from other governmental departments and research institutes. This agency also advices the government and it chairs deliberative meetings of a second group made up of the representatives of the stakeholders (groups) involved. Exactly who will be represented in such groups is prescribed by law. After the preliminary approval of the plan by the minister, public objections can be made.

Sites will be managed by using private contracts and contracts with other public bodies like municipalities. In some cases, private individuals can require the government to buy their land.

3.3 The Water Framework Directive: the implementation process

The Water Framework Directive has been implemented in the Flemish region of Belgium by the Flemish 'Enactment on an Integral Water Policy' of 2003 and falls under the responsibility of the Ministry for Environment and Nature. Besides the 'River Basin Water Management Plans' (RBWMP) which are required by the WFD, this enactment requires water management plans to be drawn up for smaller parts of the river basins.

The enactment seeks to integrate water quantity and quality with the spatial planning aspects of water management. Despite the requirement for integration it seems that this integration has not been without problems.

These problems are partly associated with the performance of the previous water policies. Water (quantity) management and spatial aspects were determined by the governments of the regions, provinces and municipalities and water quality was safeguarded and managed by the Flemish Environmental Agency (a governmental agency). Now, this company is responsible for all water policies including the implementation of the WFD. Given its historical focus on water quality management and monitoring, in combination with its limited number of staff members and limited ecological expertise, a vision of the integration of all water management aspects is lacking. In the management plans being prepared there is a strong accent on physical, chemical and hydromorphological characteristics of the river basins.

3.4 The ecological goals of the BHD and WFD

The implementation of the WFD is currently focusing on preparing a monitoring system and writing the management plans for parts of the river basins. For both, however, the ecological goals are missing at the level of separate water bodies or higher levels, as are a lot of ecological data and information regarding many water bodies covering their good ecological condition and their potential ecological condition.

It was hoped that the European working group on the 'Intercallibration' of water bodies could help to formulate ecological yardsticks to derive the ecological goals for Belgian water bodies. However, too much ecological data is missing at the European level to succeed in creating a European typology of waters detailed enough for each country. Otherwise existing eutrophication indices can not easily be related to the ecology of specific organisms and species.

The Institute for Nature and Forest Research (INBO, the former Institute for Nature Conservation IN) has developed an ecological quality assessment system for classifying surface water bodies. This system lists about 900 separate water bodies but this number has been reduced to about 200 by the Flemish administration. The system is based on vegetation types and uses four quality indicators (Leyssen *et al.*, 2005). This typology based on macrophytes causes problems relating ecological goals based on a system approach (compare WFD) to those based on a non- system approach (compare BHD). For example the presence of a vegetation type indicating a good ecological condition of a water body in a river basin does not necessarily show the occurrence of the vegetation within a specific Natura 2000 site within that basin. Also, the typology has not so far been used when setting up a monitoring system.
Recently, a system based quality description of the maximum and good ecological conditions of transitional waters has been published (Brys *et al.*, 2005).

However, the implementation of the WFD and BHD occurs within one ministry, while the implementation of the directives follows separate administrative routes meaning that there is hardly any interaction regarding the ecological goals for monitoring and management. Neither is there interaction at the level of sites (N2000), or at the higher level of the whole river basin. In only a few cases is an attempt made to integrate ecological goals of the WFD and BHD, namely where management plans involve parts of a whole catchments area or river basin. At the level of the whole river basin, too, spatial aspects of water management are some times integrated with water quality and quantity aspects.

4 France

4.1 The Bird and Habitats Directives: selection and designation of sites

The first phase of selecting the areas to be designated as Natura 2000 sites (Special Area of Conservation or SACs) was coordinated by the Natural Heritage Department of the National Museum of Natural History (MNHN, Paris) under the guidance of the Ministry for the Environment and Sustainable Development (MEDD) and its departmental branches DIREN (Directions Regionales de l'Environnement).

Inventories carried out by scientists and naturalists played an important role in the selection and in the designation of the boundaries of those sites proposed as Site of Community Importance (pSCI) or Special Protection Area (SPA). Alphandéry & Fortier (2001) have analyzed this first phase of this process and the changes made as a result of the many, sometimes fierce, discussions which arose from administrative, scientific and social problems. They conclude that: " ….the procedures defined by the MEDD were used as a prescriptive framework for the scientific practices on which the inventories were based. This knowledge made it possible to define boundaries, and its use in the territory was very rapidly criticized".

Opposition not to the Habitats Directive as such, but more particularly to the scientific methods used and the procedure followed; this opposition came from sectoral associations of foresters, farmers, hunters and fish breeders. "The approach then, in a second phase, supported the need for consultation, or even consensus, with the local and national players involved".

However, "evidently, the difficulties in combining the scientific and social dimensions of the Habitats Directive have incessantly posed problems as can be observed from the changes made to the procedure."

The most important change occurred with the suspension of the procedure for applying the Habitats Directive in 1996. When it was relaunched in 1997 a considerable decrease in the surface area and number of sites transmitted to Brussels showed up. Furthermore, ".....consultation and seeking consensus were stressed. Because of the suspension the state accepted the confrontation between concepts of ecological management of an area of land and the existing economic and social activities". The process of consultation and seeking consensus on the management of sites was placed in the wider context of sustainable development in the countryside and organized by the institution of local concertation groups or steering committees known as the Comités de Pilotage Natuar2000 (COPIL). The establishment of these institutions was required by law. They became responsible for formulating the ecological goals of a site and writing the management plan (Document d'Objectifs or DOCOB) under the coordination of an 'operator' designated by the prefect of the department (a representative of the state). By organizing the implementation process of the BHD in this way France has opted for:

- transparency and concertation of the implementation process;
- a contract- based approach of the site management;
- the integration of Natura 2000 into sectoral policies and related activities.

The process of selecting and designating Natura 2000 sites has resulted in more than 1300 sites which are protected now by law.

Before the BHD were implemented in France natural areas were protected by law (e.g. the National parks/ Parcs Nationaux de France and Nature reserves/ Réserves Naturelles de France both less than 1% of total French territory), by contracts with owners or rural cities (e.g. 46 Parcs Naturels Régionaux that constitute 12% of the national territory) or by property (e.g. Conservatoire du Littoral, Conservatoire d'Espaces Naturels). Of these areas 60% of the Nature reserves and 100% of the National Parks belong to the Natura 2000 sites.

Most of the small sites are situated in the north of France, while the largest sites are in the south (Pacyna & Vanpeene-Bruhier, 2004).

4.2 Setting the ecological goals and writing a document d'objectifs

Writing process

The process of writing a Document d'Objectifs (DOCOB) is directed by the prefect of a department (who is assisted by DIREN) who convenes a COPIL, chooses an 'operator' and provides financial support to the operators (he can also request tenders for selecting operators). He also terminates the process by signing the definitive DOCOB. This illustrates the importance of the COPIL as an advisory body.

In order to get a DOCOB 'of the ground' and working in practice, a person or organization called the 'animator' can be appointed and made responsible for inspiring, informing and sensitizing stakeholders or for technical assistance on projects.

Still the MNHN at the national level and the Regional Scientific Council on Natural Heritage (CSRPN) at the regional level continue to coordinate the scientific work. Because of this, the CSRPN is consulted during the process of writing and validates a DOCOB.

Operators can originate from any of the various interested groups, illustrating the importance of concertation during the drawing up of the DOCOB and its role in ensuring the commitment of all stakeholders. So far, 32% of all operators originates from public bodies (e.g. the National Parks, the National Forestry Office), 31% from private associations (Regional Conservation Agencies for Natural Areas, the regional Agricultural Chambers, League of the Protection of Birds, the Federation of Hunting and Fish Breeding etc.), 26% from communal bodies and local authorities (municipalities, regional natural parks) and the last 11% is made up of private agencies.

The process of writing a DOCOB in concertation has encouraged the French government to inform people of the BHD and their aims and to facilitate the writing process. For this reason the ministry MEDD has charged the organization Ateliers Techniques des Espaces Naturels (Natural Heritage Technical Unit or ATEN in Montpellier) to assist all operators and COPILs by organizing trainings and education (e.g. on setting up management contracts for Natura 2000 sites, concerted management of a project, Natura 2000 and the consequences for landowners and managers, conflict management and negotiation), writing guidelines (e.g. for drawing up a DOCOB) and the dissemination of knowledge and experiences.

With this system in place, the mean time for drawing up a DOCOB is 2.5 years, at present. Each DOCOB is to be reviewed every six years.

In summer 2006, of the total number of DOCOBs to be written (about 1,304), 460 are ready and have been designated by the prefect, 460 are still in progress, and the remainder have been held up by a shortage of funding.

Status of a DOCOB

In the initial phase of writing a DOCOB the plan and the goals or objectives are submitted to the COPIL for assessment. The prefect approves and carries out any final determination, after the assessment by DIREN and possibly after consultation with the CSRPN. With the prefects' approval, the DOCOB serves as a reference and aid in decision making for stakeholders with jurisdiction over the site, and as a descriptive and planning document. It defines contractual conservation measures, and, if necessary, site regulations and financing instruments for contractual measures. It must also be used as a reference for evaluating projects likely to affect the site. In cases where equivalent documents do not exist, the DOCOB tends to become a tool of town and country planning.

Contents of a DOCOB

After the prefect has installed the COPIL and has designated an operator the work can be splitted into two parts: a technical approach and the concerted approach (Michelot & Chiffaut 2005).
In the technical approach the contents of a DOCOB will be prepared based on both an ecological and a socio- economic assessment. They will include:

- an ecological analysis (habitats and species requirements; favorable conservation status, compatibility of human activities and habitats);
- a description of interests and objectives (conservation issues to be prioritized, definition of objectives and of strategy);
- proposed actions (definition and programming of actions; cost estimate).

During the work the COPIL can install working groups and will validate the assessments, the objectives and the actions.

The content of a DOCOB is defined by law. It must contain:

- an analysis describing the initial conservation status; the locations of the habitats and species that justified the designation; which statutory protection measures are applicable, and if human activities are practiced on the site, particularly those related to agricultural and forestry-related;
- sustainable development objectives; the potential for the restoration of habitats and species; the preservation of economic, social and cultural activities that are practiced at the site;
- measures proposed to achieve the objectives;
- guidelines that can be applied to the Natura 2000 contracts;
- description of particularly the financial mechanisms intended to reach the objectives;
- monitoring procedures for measures and the conservation status of species and habitats.

Assessments, inventories and analyses

The important parts of the ecological assessment are:

- *A list of species present at the site*. Because distribution data on species is lacking for many sites additional inventories are carried out. However, the shortage of funding means this is not possible in many cases, so often data are used which indicate the probability of

a species being present (e.g. by mapping the species habitat) or showing that a species has recently disappeared.
- *Habitat mapping*. Mapping focuses on the habitats and species of the Annexes I and II of the HD (Annex I of the BD) . Reference documents on habitats and species are available (Cahiers d'Habitats Natura 2000).

The collected data has to be interpreted to describe the favorable conservation status of species and habitats. National guidelines on how to do this do not exist, but the MNHN is working on this topic. Existing methodological guides help to collect the right data and to use indicators. Nevertheless, the following are used as evaluation criteria for the conservation status are used:
- distribution range and area (the situation of a species or habitat must be described at different spatial scales (local, regional, national and European);
- structure and function of habitats (e.g. habitat quality indices are used);
- abiotic environment and parameters;
- vegetation structure and dynamics;
- naturalness;
- types of management that are crucial for the maintenance of species and habitats.

It is stressed that the conservation status should be approached as dynamically as possible, and that it is possible to look beyond the boundaries of the site if necessary because of species and habitat needs.
Related to this is the notion that Nature 2000 sites and Nature reserves can function additionally.
Connected to this is the notion that*: "Thanks to its large area, a Natura 2000 site is suitable to study animals or plant species populations, including population dynamics and biological connections."* In this case not only small species like butterflies are mentioned but also large mammal and fish species.

Compared to the Dutch situation, there is more emphasis on describing the favorable conservation status of a species at the population level by using information on population structure and population modeling. In the last case matrix models are given preference as a decision making too, rather than population viability analysis which has a higher level of uncertainty (Michelot & Chiffaut, 2005).

The socio-economic assessment focuses on describing the stakeholders and their activities:
- description of the lower government (communes and cantons) concerned by the site;
- landownership (properties and rights of way);
- different stakeholders and users of the site;
- nature and the location of economically productive activities and uses and their (area) influence;
- collective programs, development plans and all public projects that can affect the (management of) the site.

For the socio-economic assessments guidelines also exist.

The ecological and socio-economic assessment and the analysis of the conservation status must result in a description of the goals and objectives for a site that have to be related to (management) actions and their implementation (e.g. by contracts).
Because the process of drawing up the DOCOB's has not yet been finalized an overview of the goals formulated for sites does not exist. A first general impression is that they are formulated in a global way. Examples are:

- to conserve the area of habitats;
- to favor a mosaic of natural environment;
- to restore the functioning of the hydrosystem;
- to develop the planting of a protected plant species (*Juniper*);
- restore the age class composition of a tree species.

Based on the notion of different ecological functions and possible ecological relationships between Natura 2000 sites and Nature reserves (see above) differences between their ecological goals can be distinguished (see table 4.1).

Table 4.1 Comparison between possible (ecological) functions of Nature reserves and Natura 2000 sites (Michelot & Chiffaut, 2005).

Nature reserve	**Natura 2000 site**
Core area of a species population	Possible colonization area, complementary core area, dispersal area
Systematic restoration of degraded habitats	Sporadic restoration of degraded habitats
Area often too small for general management of water or human activities	Area often large enough allowing global management of water and human activities
Experiments of habitat management techniques	Wide use of tested techniques in the reserves
Detailed management by the manager	Simplified management by local stakeholders
Detailed surveys on habitats and species	Additional studies
Detailed monitoring	Simplified monitoring
Educational presentations	Area of recreation and discovery

It should be noted that the simplified goals for Natura 2000 sites, in relation to compared to Nature reserves, is caused by the notion that the management measures taken on the sites must be integrated with other economic activities

Contract-based management and finances

The instrument chosen to implement the management measures for the Natura 2000 sites is a contract between the authorities (state or prefect) and private individuals. Two types of contracts are possible, one for agri-environmental and another for non agri-environmental activities. For agri-environmental activities, a Sustainable Agricultural Contract (CAD financed by the ministry for Agriculture) will be negotiated. Recently, a regulation called "Charte Natura 2000" established contracts for owners and site managers that want to contribute voluntarily to the site goals and their management. The duration of these contracts is 5 years (but can be increased up to 10 years for forestry measures). Unlike compensation money, they will be exempt from specific taxes.

In the case of a CAD two types of management measures must be specified:
- measures describing good practices that do not qualify for compensation;
- prescribed measures that will lead to financial compensation.

For nonagricultural situations, this distinction will not be made. Other types of site users (such as sports organizations, hang-gliding clubs, wanderers federations) are advised to make a signed voluntarily agreement. A methodological guide on management plans and contracts (e.g. estimating costs) can be used.

So far about 340 contracts under the "Charte Natura 2000" have been signed in the whole of France, and since 2003, 14% of the CAD (of a total of 1684 and 80% of the total amount)have been situated inside a Natura 2000 site. Farmers will not receive payment for what is called

"usual good practice" but only for on-going management activities, occasional capital investment and incentives.

So the management of the Natura 2000-sites is based on funding from two ministries. During the national conference of French protected sites managers in Paris (March 2006), it was concluded that a funding shortage was a significant obstacle to finishing the process of writing the DOCOBs, the contract-based management and the whole concertation process (Anon, 2006; Pacyna & Vanpeene- Bruhier, 2004).

In some cases at the (Natura 2000) site level, the operator and the COPIL have initiated cooperation with the Water Authorities (Agences de l'eau) which are responsible for implementing the WFD and can finance specificprojects and measures. In this way, attempts were made to integrate the implementation of the BHD and the WFD at the site level.
Otherwise co-financing of stakeholder groups with an interest is sought.

It is also interesting to note that ownership and land use are not always properly registered. This hinders the use of contracts but farmers and other private individuals that manage their lands according the DOCOB but without financial compensation are exempted from paying specific taxes under the "Charte Natura 2000".

5 Germany

5.1 The Birds and Habitats Directives: selection and designation of sites

In Germany a federal state, the states ('Länder') are responsible for selecting and proposing the sites. At the national level, the German Ministry for Environment, Nature Protection and Nuclear Safety (Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit) is responsible for the implementation of the BHD (and also the WFD see 5.3). For this reason, they coordinate and tailor all the state proposals to be sent to Brussels. Within the ministry, it is the Department for Nature Conservation (Bundesamt für Naturschutz: BfN)) that plays the most important role in the whole process. National government and state governments and their administrative staffs cooperate in a nationwide working group (Länderarbeits-gemeinschaft Naturschutz, or the LANA).

In 2005, the process of selecting sites and coordinating the whole process has resulted in 2005 in a list of 4617 SCIs and 568 SPAs (together more than 5100 Natura 2000 sites or 'Besondere Erhaltungsgebiete'). The high number of sites is due to the high number of sites (SCI) smaller than 1,000 hectares (about 1750 are smaller than or in between 50-100 ha, about 1,500 in between 100-500 ha and about 550 in between 500-1,000 ha). A number of about 800 sites is in between 1000 and more than 5000 hectares (Raths *et al.*, 2006).

Germany differentiates between several categories of protected natural areas, each with its own protection regime. Four protection regimes are especially important for the BHD because most of the Natura 2000 sites selected (SCI and SPA) fall into these categories (protection regimes are frequently combined). The categories are: Nature reserves, National Parks, Biosphere Reserves and Nature parks (Naturschutzgebiete, Nationalparke, Biosphären-reservate und Naturparke) of which the first three categories provide the strongest protection.

Table 5.1 Relation between Natura 2000 sites (SCI and SPA) and other protected areas (Raths et al., 2006).

	SCI		**SPA**	
	# (%)	area(%)	# (%)	area (%)
SCI		100		60.7
PSA		52.9		100
Naturschutzgebiete	18.0	7.7	58.0	14.4
Nationalparke	90.0	16.6	92.0	19.3
Biosphärenreservate	11	5.4	62.0	21.0
Naturparke	12.0	18.0	52.0	10.8

Table 5.1 shows that more than 60% of the Bird sites (SPAs) have also been selected as a Habitats site (SCIs). It also illustrates also that more than 90% of the selected SCI and SPA sites are protected as 'Nationalparke' including only about 16% and 19% respectively, of the total area of these parks. It can be concluded from the table (see percentage of area) that a large area of the Natura2000 sites (in between than 60-70 %) are protected by some kind of conservation regime, while the remainder still needs protection.

Despite the large number of selected Natura 2000 sites in Germany the selection and designation process has not yet been finished. Brussels still has the conviction that Germany has yet to select new sites for some habitat types and species. For instance, in Lower Saxony that a number of SPAs are expected to be selected.

Amongst the states ('Länder') the selection and implementation of sites is organized differently. In some larger states the district government ('Bezirksregierung') and its administration are positioned between the state governmental ministries (Landesministerium) and the lower government of the counties (Landkreise) and large towns (the 'Kreisfreie Städte' which are independent). This district level of government plays an important role in nature conservation policy especially in designating Nature reserves in the Natura2000 sites, for example. Specialist agencies (Fachbehörden) exist in most states, and advise their ministries and the counties as lower nature conservation authorities.

In Lower Saxony, for instance, the Ministry for Environment (Niedersächsisches Umweltministerium) is responsible for the implementation of the BHD (and WFD see 5.3) in cooperation with the lower government of the 38 counties (Landkreise) and 14 large towns ('Kreisfreie Städte'). With the abolition of the 'Bezirksregierung' at the end of 2004 the counties and towns with their elected governments (Landkreise are governed by an elected 'head' called the Landrat that is elected for 12 years) acquired a more important role in nature conservation, along with the administrative bodies which in all counties and large towns are called the 'Untere Naturschutzbehörde' (UNB). The counties and big towns can designate Nature reserves outside Natura2000 sites. However, inside these sites Nature Reserves must be designated by the Lower Saxony Water Management, Coastal Defence and Nature Conservation Agency ('Niedersächsischer Landesbetrieb für Wasserwirtschaft, Küsten- und Naturschutz', NLWKN) by means of a formal decree ('Verordnung') which encompasses general ecological goals and regulations stating which activities are permitted inside the protected area. This decree must be approved and authorized at the state level, and respected by the county government and its administration for nature conservation ('Untere Naturschutzbehörde' of the 'Landkreise' and the large towns, respectively), by concluding contracts regarding site management, for instance. The lower administration, however, is allowed to formulate further (detailed) regulations on issues such as site use.

Besides the state agency, the NLWKN (as a part of the Lower Saxony Ministry for Environment) is formally responsible for advising on the implementation of Natura2000 at all governmental levels (state, county, community), and for providing guidance with the technical aspects of the selection and designation process of the Natura2000 sites in Lower Saxony. Some of its activities are similar to those executed by a so called quasi non governmental organization or quango in other countries such as the UK (see Neven *et al.*, 2005).

5.2 Setting the ecological goals and writing a management plan

Writing process

Again because of the federal status of Germany the national (Bundes) authorities can not determine the favorable conservation status of habitat types and species (Erhaltungszustand der Lebensraumtypen und Arten) within individual Natura 2000 sites. This is the responsibility of the 16 states in cooperation with the lower authorities at the county level and their administrative bodies. For this reason a description of the Favourable Conservation Status (FCS) at the national level cannot be given. Only a guide on describing the FCS in a general

way can be used by the state and lower authorities and administrations, but they are still free to use and to interpret it in their own way. Nevertheless, the federal ministry responsible (Ministry for Environment, Nature Protection and Nuclear Safety) and its Department for Nature conservation (BfN) are working together with the state conservation authorities on a guide concerning how to describe the FCS (using the criteria of distribution range, population and area of habitats of protected species and of habitat types).

At the state level ecological goals usually are formulated in very general terms and the FCS for species and habitats will be reported to Brussels in (aggregated) terms of the status within their distribution range. Ecological goals for individual sites must be specified at the county level by the UNB in particular. Although an overview of site specific ecological goals is lacking, the general impression is that for many sites they are limited to the existing situation as far as the habitats and species are concerned and also in terms of the use of the site. For instance, in Lower Saxony hunting still is permitted within Natura2000 sites.

In Germany, management plans (MP) for Natura2000 sites are not required under national law, but in some states they are required by state law respectively administrative regulations and in some not.

In some states, they exist for many sites that were already protected or they will be written voluntarily or for other reasons. However it is not always clear who is formally responsible for drafting these plans. For instance, in Lower Saxony the law does not specify whether this responsibility belongs to the NLWKN or to the lower administration of a county (UNB). In this state, with 446 Natura 2000 sites (encompassing about 350,000 hectares), management plans currently exist for about 70 sites (with a total area of about 100,000 hectares) which include state forests, military training areas or nature conservation projects of national importance. Other MPs will possibly be written by the lower nature conservation authorities (UNB), but the task of writing MPs for complex sites (compare e.g. sites that cross the borders of several states or communities) may be delegated to the NWLKN.

Writing MPs will be a huge task for the lower conservation authorities (UNB) because of the low number of personnel with the necessary experiences and skills. The necessary data relating to the current situation is also missing for many sites. This means that in Lower Saxony, for instance, older site descriptions and inventories made at the state ('Landes') level can be partially used. This is often because of a shortage of funding and means that many nature conservation authorities (and NGO's) in all 16 states worry about this part of the implementation process. Nevertheless, new opportunities to implement conservation goals will probably be opened up by using the WFD implementation process (see 5.3).

Contract-based management and finances

The next step of implementing the BHD, after setting the ecological goals and writing the management plans, is to establish the necessary management.

Germany has, like several other EU member states (Neven *et al.*, 2005), chosen to realize the ecological goals in Natura 2000 sites by using voluntarily contract-based management (compare also France). In all 16 states existing conservation and management programs will be used for financing but the financial safeguarding of the management and its organization will differ between the states.

In Lower Saxony, for instance, habitat and species protection programs will be used. Management contracts for several types of meadows, agricultural fields and landscape elements are also regulated by an incentive management program known as 'Proland' under

the guidance of the Ministry of Agriculture (a new program, 'Profil', will start in the second half of 2007). The program focuses on the management of habitats as well as species (such as certain migrating bird species that use arable land and meadows) but also on the conservation and management of water and soil. The program can be seen as a policy instrument for implementing the federal Nature conservation law. This law sets down minimum standards for what is called 'good skilful or basic management' (guter fachlicher Praxis) which apply farmers, foresters and fishermen. For instance, farmers are required to register their use of manure and herbicides and to adapt their management of the land to the local situation in such a way that soil fertility, for instance, will not be harmed.
Contracts with landowners and users are voluntarily and last for at least 5 years.

It is important to note that monetary compensation for farmers within those Natura2000 sites which are also Nature reserve (Naturschutzgebiet) is part of the 'Proland' program. Compensation will only be paid for management measures that focus on conservation objectives that exceed the formulated standards for a 'basic protection level for water, soil and nature' ('Grundschutz') as mentioned above. Because of the limited funds available for compensation, the difference between the 'basic protection level' and the ecological goals in the natura2000 sites is not expected to be substantial. The 'Proland' program can also be used to buy land for conservation.

Again, the NLWKN agency is involved in the implementation of the program though the money will be paid by the Agricultural Chambers ('Landwirtschaftskammer') that fall under the Ministry for Agriculture which is responsible for agriculture, food quality, forests and also spatial planning.

Public participation

Because the whole implementation process differs between states, an overall picture of the willingness of the different stakeholders (or groups) to cooperate with the authorities during, for example, the process of drafting the MPs cannot be given for Germany. At the national level, resistance to both directives has come from agriculture and forestry in particular, but also from other economic stakeholder groups such as the Industry & Commerce Chambers (Industrie und Handelskammer, IHK) and the related 'Bundesministeriums'. The intention to influence and change the directives at the national level do exist especially because of the ruling of the European Court of Justice (ECJ) against Germany. According to the ECJ, Germany has not implemented the articles on species protection sufficiently thoroughly (HD art. 12-16). It has also ruled that Germany should make some changes to its national conservation law so that the national exclusion clause for agriculture, forestry and fisheries (Landwirtschafts-klausel) would no longer apply within Natura2000 sites (Anon.). This important clause states that regulated use by farmers, foresters and fishermen cannot be seen as a violation of nature and landscape.

Away from the national level, although MPs are not yet required for Natura2000 sites in all states, at the county level in particular, landowners and different groups of land users have to be informed about the BHD, the selected sites and the regulations formulated on site use and site management. Guidelines on how to involve stakeholders do not exist, so each state and lower conservation authority will have to experiment with this. In many states attempts are being made to involve other stakeholders during the drafting of the MPs. However, resistance among the stakeholders is expected in the case of management measures which set limits to agricultural and other emissions, or which require changes to specific land uses.

This is different for the implementation process of the WFD in which stakeholder involvement is required as laid down in the WFD itself.

Here it is important to note that the national Nature Conservation law will allow groups of stakeholders to appeal against decisions (which was not possible under the previous legislation).

5.3 The Water Framework Directive: the implementation process

At the national level in Germany, the ministry responsible for implementing the BHD is also responsible for implementing the WFD (Ministry for Environment, Nature Protection and Nuclear Safety), but it is the Department for Environment that is now taking the lead (Umwelt Bundes Amt, UBA).

At the state level, too, in over 50% of the states one single ministry is responsible for the implementation of the WFD and the BHD. Both governmental levels cooperate in the nationwide working group "Länderarbeitsgemeinschaft Wasser' (LAWA).

Again, due to the German federal status and the many state ministries responsible for implementing WFD, it seems to be difficult to reach a single common implementation strategy. However, as is stated in the WFD itself, river basin management plans must be drawn up and a loose timetable has been set for these plans. The individual states' initial characterization of groundwater and surface water bodies, and the economic analysis of water use were for the most part finalized by late 2004, and the results were submitted to the EC in March 2005. An operational monitoring program was scheduled for the end of 2006 and the river management plans are to be completed by the end of 2009 (Richter & Mohaupt, 2005). Strict time tables for the attainment of goals were set in Germany.

The German management plans may be an instrument for integrating the ecological goals of the WFD and the BHD. The integration of the WFD and the BHD has been encouraged at all governmental levels (Jessel, 2006) and can be illustrated by looking at the guidelines for monitoring in Lower Saxony (NLWKN, 2006), for example.

How the implementation of WFD and its integration with the BHD has been achieved within all 16 states is not clear yet and will differ between the states. In many cases, existing water management plans based on the program for restoration and management of running waters in Lower Saxony will be adjusted and updated.

In Lower Saxony, 30 steering committees (Gebietskooperationen) in 32 working areas (Bearbeitungsgebiete, usually part of a river basin area) will take part in the required water management plans and may also play a very important role by implementing the WFD and integrating BHD conservation goals for water dependent species and habitat types into these plans. The ministry for environment of Lower Saxony has decided which stakeholders will be involved in these deliberative bodies, which can have several working groups and are responsible for determining goals and measures, mapping, monitoring and drawing up writing the (river basin) water management plans.

Again the NLWKN agency advises the steering committees in formulating the integrated WFD and BHD goals and, for example, helps create a toolbox for selecting management measures and working methods. The writing of MPs for complex sites (compare e.g. the river Weser valley with several drainage areas and a number of Natura2000 sites in several counties) may also be carried out by NLWKN.

This integration process is termed a 'living document'. It has just started, but it has already been noticed that a shortage of experience and experts in integrating the ecological goals of the WFD and BHD is causing many problems and is a time- consuming process.

All 30 water management plans in Lower Saxony, together with all the plans written in the other 15 states are to be integrated and coordinated into about 10 reports which the national government will send to Brussels. How this process will be approached has not yet been decided.

5.4 The ecological goals of the BHD and WFD

Before formulating the WFD ecological goals in the water management plans, the first discussion in the states concerned the classification of water types. As in some other European countries this discussion has not yet been concluded but by the end of 2004, 23% of all water bodies had provisionally been identified as heavily modified water bodies (Richter & Mohaupt, 2005). By the end of 2006, this percentage is expected to become much higher in Lower Saxony. This classification leads to lower ecological goals. Because in this way the ecological good condition will not differ significantly from the existing situation, the necessary management measures will not differ significantly much from what managers are already doing either.

As mentioned above, attempts are now being made in many states to coordinate and integrate the ecological goals of the WFD and BHD and this is no easy task, despite some existing working guidelines.

To integrate the ecological goals of the WFD and BHD in Lower Saxony and other states, a first analysis has been made of (ground) water dependent species and habitats in the Natura2000 sites. For instance, of the 385 SCIs there are water dependent habitats and species in 329; of 60 SPAs, water-dependent birds are present in 57.

The steering committees will now discussed which goals and measures are necessary. Although the integration of ecological goals has been propagated, it is not clear how to do this and it must be shown that BHD conservation and development measures can be successfully described identically to the Natura2000 site management plans as WFD water management plans.

6 Conclusions and recommendations

6.1 Ecological goals and ambitions

Of the countries in this study, the Netherlands is the only to have set ecological goals related to the BHD at the national level. Neither Germany and France nor Belgium have set such national- level goals and even the 'favorable conservation status' is some times unknown at the national level or data are only now being collected (Germany). This is mainly because of the federal status of Germany and Belgium where the Länder and counties, and the regions, respectively, are responsible for implementing the directives through setting goals and assigning the favorable status to species and habitat types. The different governmental levels generate a variety of goals that can not be easily compared. In France, where the implementation process is in its second phase, consultation and consensus seeking characterize the management plans of the sites and setting of goals. This takes place within a wider context of sustainable development in the countryside organized by local concertation groups or steering committees (COPIL).

As a result of differences in, for instance, governmental status and in the implementation process (top- down versus bottom- up), and because most countries have opted to focus on writing management plans after assigning the favorable conservation status to the protected species and habitat types, national overviews of goals cannot exist or are only now being generated (in Germany) partly because of the obligation to report to the EC.

In France and Germany, ecological goals are specially formulated at the site level (with the help of guidelines) and they are not easy to compare because they are general and/or qualitatively. In the Netherlands, site- level goals have yet to be formulated.

A few of those involved in the implementation process in the countries have some overview, but they could not be found or for other reasons, were not involved in this study. Furthermore, it must be realized that in all countries the first phase of the implementation process including the selection and designation of the Natura2000 sites, took many years. Now the process seems to have gathered pace for several reasons. One reason is the relationship with the WFD implementation process and its tight timetable. Despite being a snapshot in an ongoing process, some conclusions and recommendations can be drawn from the sources that are used.

Natura 2000 sites and their protection: similarities and differences

Looking at the number of selected and designated sites under the directives and the areas they cover, it can be concluded that compared to other countries the Netherlands has brought a relatively high percentage of their total territory under the Bird Directive (more than 12%) and low percentage under the Habitats Directive (less than 10 %). However, the selected sites have been accepted by the EC which is not the case in most other European countries. In Germany, for instance, it is likely that for a few bird species some SPAs still have to be selected and designated. However, in the Netherlands no marine sites have so far been designated in contrast to Germany.

Just as in the Netherlands, in all countries many sites have been selected as Natura 2000 sites that were already protected but also areas previously unprotected. For instance in France and Germany, several different protection regimes exist, generating the problem of

how to harmonize these protection regimes with the demands of the directives (how to make the protection regimes 'BHD- proof'). At the current time, several Natura 2000 sites in other countries have still not been protected or have no protection regime in place which conforms with the BHD. In some Natura2000 sites, too, stronger protection measures are in place for nature than for other kinds of side use (for instance forestry). For this reason, ecological goals have to be tuned with other economic goals.

In the Netherlands, all Natura 2000 sites are protected under the new nature conservation law (Natuurbeschermingswet) and have the same protection regime. Furthermore, in the Netherlands the new Flora- and Fauna law protect species from the Annex IV HR. In most other European countries the protection of these species still has to be arranged. In France, for example, ideas on a new law to protect these species are being developed drawing from the lessons learned from the experience of using management contracts in the Natura 2000 sites, which will not preserve the favorable conservation status of these species sufficiently.

Additionally, analyses show that in France, the Netherlands and Germany the Natura 2000 sites do not function as a real network. So preserving the favorable conservation status of some species from the Annexes II (HR) and I (VR) will require other (protected) areas alongside the Natura2000 sites, because of the important role such sites play as possible sources or dispersal corridors, or because of important abiotic conditions (see table 5.1 and compare also article 10 HR).

For this reason in most countries the idea is growing that additional protection measures need to be taken, and in Germany a new federal law was passed in 2002 to protect an ecological network with a minimum of 10% of the total area (Ssymank, 2006). This would be comparable to the Dutch Ecological Network, although that does not have the same legal protection.

Management plans for Natura 2000 sites

Management plans including the ecological goals for Natura 2000 sites are legally required in France, the Netherlands and Belgium (compare the Natuurrichtplan'). In all countries, management plans for already protected sites exist but have to be modified to fit the requirements of the directives. The process of drawing up the Natura2000 management plans has yet to start, or only pilot schemes exist, in all of the countries except France. New plans have to be written every five years (in Germany) or every six years (in France and the Netherlands).

Looking at the contents of the French management plans (DOCOBs) and the contents of the Dutch plans, there are a number of similarities. However, the ecological goals in the DOCOBs are very general and maybe more general than what would be expected in Dutch ecological goals for the sites (that have yet to be written).

It ought to be noted that the DOCOBs describe the favorable conservation status on four spatial scales, important vegetation structures and dynamics, the naturalness of a site and the quality of the habitat types. It stresses the importance of system and population dynamics.

In all countries it is clear, or becoming clear, that the protection of many species and habitat types is related to (ground) water management inside or outside the sites. The relationships between water management and the BHD ecological goals have yet been analyzed in detail in all the countries. In the Netherlands, however, these analyses show clearly that many water management measures can be beneficial for specific species (e.g. anadromous fish species) and habitat types, but they can also have negative effects. Currently, the goals for ground water-related habitat types and types of brackish waters need attention, as do the goals for

water fowl feeding on specific fresh water habitat types. In other countries, the goals for specific species and types are under the pressure from various other land uses (forestry, agriculture, hunting etc.). Although in this study the most threatened ecological goals could not be analyzed (see above) the overall picture in the Netherlands compared to the other countries is that realizing these ecological goals will not create larger problems than is the case in other countries. More detailed and quantitative information will be available as soon as all European countries have submitted the required reports on the BHD implementation to the EC.

However, the obligation to implement the BHD and the cost- neutral management of the Natura2000 sites in the Netherlands may lead to less ambitious ecological goals (because of expensive measures). Some examples of this do exist.

In all countries the management will be carried out by private individuals in many cases and will be contract based. It is shown that stakeholders involved in the management of sites are sometimes willing to change their management or look for technical innovations to adjust their management. Although compensation money is usually required for these changes, there are examples of management changes which have been made by private site managers simply to be a proud Natura2000 manager (e.g. in France).

It ought to be noted that for instance in Germany, for instance, a good 'skilful or basic management' will not be entitled to compensation. Compensation money will only be paid for management measures that focus on ecological goals that exceed the formulated standards for 'a basic protection level for water, soil and nature'. In combination with a shortage of compensation money this generates the risk of formulating goals which are over-cautious for habitat types and that need a relative expensive kind of management (e.g. for specific wet grassland habitat types). This risk is strongly related to the above- mentioned risk of a 'budget neutral' implementation. To make this risk clear at the European level, an analysis needs to be carried out.

To attain ecological goals set in cross- border sites, a cross- border discussion on the goals, important conditions and management is needed. Examples of such cooperation are rare, but recently German and Dutch authorities have decided to write a combined management plan for the river Ems estuary. In other countries these initiatives have already been started.

Looking at the area of the Natura 2000 sites, it is clear that compared to France, a relatively high number of small sites have been selected in Belgium, the Netherlands and Germany. Whether site management in these countries will reach their ecological goals depends heavily on external (abiotic) conditions and effects of external activities. Otherwise in France the goals can only be reached if the existing use of the sites can be harmonized with the necessary ecological conditions. This is different for the Dutch situation and, to some extent, the German situation, where specific ecological goals can only be realized on the sites because they can not be found elsewhere.

In all cases the problem of reaching the ecological goals will strongly depend on the involvement and willingness of the other (groups of) stakeholders that influence the management of the sites. In all countries it is acknowledged that this is often a problematic process that takes time. The question of how to deal with this problem has not one answer as is also shown in the countries (see also Neven *et al.*, 2006).

However, much ('does and don'ts') can be learned from the experiences in France, which were initiated earlier than most other European countries, through bottom- up participation processes in the Natura 2000 sites.

6.2 The implementation process and ecological goals: constraints and benefits

Implementation by consultation or participation

Clearly, the process of implementing the BHD can be characterized as either a top-down process (in the Netherlands, Belgium and Germany) with or without stakeholder consultation, or as a bottom- up process (in France) in which stakeholders are involved from the early stages in formulating goals and contributing to the management plan.

The fact that all interested local (groups of) stakeholders are involved in writing a DOCOB and discussing the ecological goals and measures for managing the natura2000 sites shows that France has clearly opted for transparency and coordination of the implementation process. In this way, in contrast to the original top- down implementation process, which was hampered by bad communication, the French approach fulfills the requirements of the BHD, which states that the management of the Natura2000 sites will take place "*while taking economic, social, cultural and regional requirements into consideration"*.

At many French sites, the ecological goals are debated extensively. There is no overview of the French situation, so it is too early to draw any conclusions about the effectiveness of this way of implementing the directives for sites with ambitious ecological goals. However, all the ecological goals formulated in the DOCOBs are based on a high degree of social acceptance. On the other hand, involving different stakeholders, and particularly private individuals in reaching ambitious ecological goals is often associated with high levels of financial compensation and can raise high expectations on the part of private individuals in this regard. When compensation money becomes scarce, the social basis for the management will be at risk, and this constitutes a real risk to the successful implementation of the BHD in France. For this reason the effectiveness of the implementation process is doubted in France by some groups of stakeholders.

In both types of processes, ecological goals are subject to discussion at the beginning of the process (in France) or at a later stage (in the Netherlands and Germany). However, in all countries it has become clear during the process of implementing the BHD so far that integrating of ecological and other (economic) interests often leads to more effective solutions to (goal setting and management) problems related to the implementation of the BHD and other directives as policy instruments.

The implementation of nature conservation policies, and thus the directives, can be helped by integrating interests and goals. However, alongside participation, other important conditions have to be fulfilled to make integration a success as is illustrated by the integrated implementation of the BHD and WFD in some countries (see below and Furman *et al.*, 2007).

There is a contrast between the role of lower government, especially the municipality level in the BHD implementation process in France, Belgium and Germany on one hand, and the Netherlands on the other. In the former countries these lower authorities often have a formal role in formulating ecological goals (Germany), play an active role in drawing up management

plans (COPIL in France), or are consulted and can be involved in the management itself (Belgium, France).

A number of guidelines have been developed in France and Germany to assist lower authorities and other stakeholders involved in the writing of management plans, or with the management itself. Furthermore, state-level organizations in Germany (for instance the NLWKN in Lower Saxony) and Belgium play an important role in the implementation process, with their own responsibilities.

In the Netherlands, the municipalities are hardly involved in the implementation process of the BHD. An informal but state- related advisory group (Steunpunt Natura 2000) was created only recently to advise (only) governmental authorities and managers on implementation- related problems. This situation is in contrast with the implementation process of the WFD, in which municipalities have been actively involved.

For the reasons mentioned, it is likely that Natura2000 is little-known as policy instrument and has not been widely accepted by the Dutch municipalities and other private organizations (Bosch, 2007). To improve the social acceptance of the BHD much can be learned from the experiences in the countries mentioned.

The integration of BHD and WFD

In the Netherlands and Germany (for example in Lower Saxony) particularly, the process of implementing the BHD and the WFD was begun by integrating the ecological goals of the directives into the (water)management plans (in Germany) or in one management plans for Natura 2000 sites under governmental management (the ministry of TPW).

In Germany, integration takes place in regional steering committees which try to integrate the BHD conservation goals for water- dependent species and habitat types in the required water management plans at the level of (parts of) the river basin. However, quite apart from being a time consuming process, a lack of experience in managing participation processes and in 'integration' thinking, as well as a shortage in specific (technical) knowledge and ecological data or expertise are hindering the effectiveness and efficiency of the integration process. Strict timetables (compare WFD) and existing money budgets (compare in the Netherlands the budget- neutral provision for BHD implementation) mean that there are additional risks for finishing these processes successfully. This is illustrated by a tendency in Germany, as well as in other countries, to take the existing situation of the water bodies as a template, which generally leads to lower ecological goals. In the Netherlands, although the nationally formulated goals for some species and habitat types, they show that their favorable conservation status must be improved. This has yet to be incorporated into the management plans. In both countries, technical measures that favor fish species are more accepted than measures focusing on regulating nutrient loads to improve water quality.

Furthermore, as regards implementing the WFD in the Netherlands, the budget- neutral implementation provisio and the rule of efficient water management measures have increased pressure to realise ambitious ecological goals. However, in both countries the integration of the directives is being prioritized by the authorities and stimulating communication and cooperation at the lowest levels. Preparing river basin management plans, cross-s border consultation and cooperation has begun in the east Rhine river basin for the river 'de Berkel'. In France and Belgium the integration of the directives is absent or at a very early stage.

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Appendix 1 Organizations and persons visited

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France
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(Goupement d'intéret public) L' Atelier techniques des espaces naturels
Mrs. H. Dubaele
Mrs. N. Faucon

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