10. Group report: institutional and capacity requirements for implementation of the Water Framework Directory

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Abstract

Different aspects of institutional and capacity requirements need to be considered to effectively put the Water Framework Directive (WFD) in place. This chapter tries to find the most effective way of managing the river coast continuum, to ensure an appropriate role for public participation, EU ('Brussels') policymakers and catchment managers. We find that coordinated action is needed to oversee the river-coast continuum. Cultural differences, varying from one EU member state to another, can influence the style and role of implementation of the WFD. There is a clear role for formal public participation in implementing the WFD, as the process of a higher level of organised public participation is unstoppable. A dialogue is needed that brings together community intelligence and scientific systems understanding for the sustainable management of flood-prone rivers and coasts.

Introduction

Achieving a 'Good Ecological Status' for all watercourses and catchments, as required by the WFD, has large implications for the future of integrated water resources management, especially in the coastal zone. The ecological situation in the coastal zone is influenced on the one side from land with out-flowing rivers and shoreline activities including maintaining shoreline morphology, and on the other side, by activities in the wider sea including fisheries, transportation and mineral

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extraction. The transboundary aspects of this, where activities in one country have influence on the coastal zone of another country, are obvious. Implementation of the WFD, even more strongly than previously, influences institutional arrangements and the capacities needed to put the stewardship principles of the WFD into practice.

This chapter reports on the possible institutional and capacity requirements for implementation of the WFD. It builds on earlier chapters by De Bruin et al (this volume) and O'Riordan (this volume). The chapter deals with a delineation of the water body and management structures, both in spatial and in legal terms, the means to achieve the goals of the WFD, with emphasis on the subject of public participation, and the institutional changes that are anticipated to reach such goals. This chapter follows the structure of the discussion and is divided into the following four themes:

1. Boundaries of the water body and management structures;
2. Relation of WFD to other legislation;
3. The role of public participation in implementing WFD;
4. Institutional change for implementing the WFD and cost consequences.

The *first theme* compares the natural boundaries of water bodies with their actual management structures. The following questions are discussed: How to define the watershed boundaries of the coast in relation to the catchment, as seawater also interacts with inland water via groundwater, tidal rivers and estuaries? Do we need a managing body for the open sea and the catchment and what should such a managing body look like?

The relation between the WFD and other legislation is discussed in the *second theme*, namely trying to find answers to the following questions: What is the role of legal issues in implementing the WFD? How does the WFD relate to other legislation like the EU Habitat Directive and broader legislation on the control of toxic substances? How will "incorporation in the WFD" be actually specified and implemented?

Theme three discusses the role of public participation in implementing the WFD. The following questions drive the discussion: What is the scope for public participation in the WFD? What are the current trends with respect to public participation? What are the criteria for successful public participation in the WFD? What are the drivers for public participation?

The fourth theme deals with the required institutional changes to bring about the implementation of the WFD including the cost consequences. The following questions drive the discussion: To what extent do countries have flexibility in implementing the WFD? Do we need to change institutional arrangements for implementation of the WFD in different countries and, if so, how do we redesign the institutional structure? What are the economic consequences and how should costs and benefits, be traded off; and cost recovery and how to achieve cost efficiency achieved?

In sum, the four themes in this chapter each address different aspects of the institutional and capacity requirements of the WFD. All four have to be considered to effectively put the WFD in place. These themes are linked by a single overarch-

ing question: What is the most effective way of managing the river coast continuum and what should be the appropriate new roles for public participation, EU (Brussels) and catchment managers?

Boundaries of the water body and management structures

Coastal water in the WFD is defined as follows: " 'Coastal water' means surface water on the landward side of a line, every point of which is at a distance of one nautical mile on the seaward side from the nearest point of the baseline from which the breadth of territorial waters is measured, extending where appropriate up to the outer limit of transitional waters" (European Commission 2000, art. 2.7).

The question is whether the first nautical mile into the sea is an appropriate boundary for the identification and implementation of the WFD. It can be answered positively, if the hypothesis –a good ecological status in the first mile implies a good ecological status in the rest of the sea– holds. However, since river plumes continue far beyond the one-mile zone, persistent substances and nutrients and, consequent algal blooms can be found in the wider sea, even if they do not occur in the coastal zone (OSPAR 2002). Furthermore, the wider sea can have an impact on the one-mile coastal zone through, for example, shipping accidents and malpractices during fishing. Besides these *anthropogenic* causes, environmental problems in the coastal zone can be induced by *natural* causes (e.g. the natural flow of water, possibly induced by storms). Finally, although the coastal zone is identified as a conceptual and operational entity, it is generally characterised as a transition zone or interface and not as a distinctly defined system bound of a one-mile distance (Von Bodungen and Turner 2001). Consequently, the one-mile boundary of the WFD is too limited to support integrated coastal zone management and to achieve a good ecological status. The European Commission acknowledges this and a strategy to protect and conserve the marine environment is currently under development (European Commission 2002).

One third of the regional seas worldwide have regional conventions. Ledoux et al (this volume) provide an overview of the conventions covering European regional seas. It is difficult to gauge sense the contribution of these conventions in the achieved reduction in nutrient emissions and other polluting substances (European Commission 2002). Nevertheless, such agreements can be very useful as they bring the problems of larger scales to the public attention, and put pressure on governments to get polluters to reduce emissions. Emission reduction may be possible in a voluntary manner when less pollution goes hand-in-hand with bigger profits. However, more stringent reduction measures tend to meet opposition. Besides, the socio-economic conditions in the region play a role too. For example, some agreements have worked better in the Baltic Sea, than in the Mediterranean Sea. These differences may be related to the comparative wealth of riparian countries, as well as the nature of the pollution in relation to economic (including recreational) activity.

While the border of the water body as pointed out in the WFD makes sense in the context of water management, there is a need to cope with varying interests of riparian countries. Joint bodies[2] exist for transboundary catchments like the Rhine, Elbe and Danube, but such commissions are not yet formed for all relevant European catchments. Hard law (i.e. statute law which is enforced by criminal proceedings or economic sanctions) does not always provide full support to these commissions, but most have strong political support. A complicating factor is that not all countries sharing a catchment are EU member states (i.e. Switzerland in the Rhine catchment). Nevertheless, the WFD has provisions for these kinds of situations. However, these river commissions are not always in direct connection with the regional seas commissions.

Therefore, a distinct need was identified for a joint body that incorporates the full catchments, which can settle trans-boundary issues and manage the catchment-coast continuum. The objective of such a joint catchment and open sea management body is to translate the joint responsibility of riparian countries in the catchment into coordinated action. A stronger political and legal foundation of regional seas commissions, without attempting to redefine the WFD, could be pursued. The point here is that strong, co-ordinated and scientifically supported analysis of coastal-river management for water stewardship and sustainable development generally should be the articulated purpose.

Relation of WFD to other legislation

As discussed in Ledoux et al (this volume), a range of EU-directives and other legal arrangements exists that steer water management. In this section, we will deal with how the WFD relates to other legislation. In this context, it is important to distinguish between hard law and soft law (implemented by voluntary agreements and codes of practice)[3]. Conventions such as discussed briefly in the previous section can be labelled as 'soft law'.

Legal issues play an important role in managing rivers at the catchment scale. The further away from the source the impact is, the harder it is to prove causality, and thus hold someone legally liable beyond reasonable doubt. Hence, one first has to prove that there is an impact and, second, there has to be a proven causal chain. Compliance with current international and national standards would be a defence against prosecution or civil action. From a legal point of view, it is also important to make a distinction between natural and human causes, as already touched upon in the previous section. For instance, an event where dunes are washed away because of a storm can be caused solely by natural conditions, but also by poor maintenance. In such instances it may be difficult to get a clear-cut

[2] Joint body in the definition of the convention on the protection and use of transboundary watercourses and international lakes means "any bilateral or multilateral commission or other appropriate institutional arrangements for cooperation between the Riparian Parties" (UNECE 1992).

[3] For a discussion on the dividing line between hard law and soft law see Tanza (2002).

proof. From this, we can draw the conclusion that hard law may lead to slow legal procedures.

Yet, soft law can be more effective than hard law, because soft law can work as a catalyst to achieve targets faster. Moreover, it is desirable to seek means to strengthen soft law, for instance through publicity. This is even more important, as soft law often complements hard law and much hard law is implemented in a soft way.

Let us now turn to the question of how the WFD relates to other legislation. We observe that a range of previous water related EU directives are incorporated into the water *framework* directive. Besides, a number of directives become redundant, as they are taken care of within the WFD. For instance, the Shellfish Directive becomes obsolete under the WFD as it aims for the same objective, namely to obtain a good ecological status. However, other agreements, like the Ramsar agreement are not included in the WFD. Furthermore, biodiversity is not dealt with in the WFD. The Bathing Water Directive, which is currently under revision, is mentioned in the WFD, but will not be replaced by it.

Hence, it is not straightforward to specify and implement the actual 'incorporation into the WFD'. On the one hand, in the case of the Habitats Directive, the creation or strict protection of habitats may conflict with the interests of local communities, for example when land may have to be surrendered to the sea. Also, various stakeholders may fear a reduction in their freedom to engage in possibly polluting economic development (e.g. port authorities, land owners, fisheries and aquaculture entrepreneurs). From an international perspective, river basins and the Habitats Directive, are based on natural geographical boundaries rather than administrative ones. Watersheds will thus cut across local, regional and international borders. On the other hand, the Habitat Directive calls for sanctuaries in the sea. This may facilitate the achievement of a good ecological status, the principal objective of the WFD.

Also, there has been much discussion in the EU legislation on the control of toxic substances, leading to a list of priority substances in 2001 being added to the WFD (European Commission 2002), but this list is not comprehensive. Within the REACH programme the European Commission tries to further regulate and control the production and release of toxic substances.

Over the last two decades we have seen a reduction of inflow of dangerous substances into the coastal zone. The implementation of the Priority Substances Directive will lead to a further lowering of the toxic load from the catchment, contributing to the achievement of a better ecological status. In addition, it is important to harmonise the monitoring and reporting regimes both between directives and throughout Europe. Initiatives to resolve this issue are on their way elsewhere, but mainly for land and less for the sea (e.g. Harmoni-CA (http://www.harmoni-ca.info/); and Monitoring Tailor-Made (Timmerman et al. 2001), and calibration exercises across transboundary catchments, which is part of the Common Implementation Strategy of the WFD). In conclusion, we see good opportunities that different directives will mutually enforce one another. However, real-world implementation of the "incorporation into the WFD" remains a challenge to be awaited. All we do here is offer clear guidelines to assist this strategy.

Flexibility in implementing the WFD and public participation

In relation to public participation, the WFD states that "Member States shall encourage the *active* involvement of *all* interested parties in the implementation of this Directive, in particular in the production, review and updating of the river basin management plans" (European Commission 2000, art. 14.1) (italics added).

This phrase is discretionary, allowing for a variety of interpretations. The key point here is that some sort of participatory and deliberation processes will be required, if implementation of the WFD is to meet its political and statutory aims. The term "interested parties" implies active involvement of at least the most important stakeholders; this involvement can range from inclusionary processes, where they are consulted, through participation of selected stakeholders, to deliberative participatory processes, where they are part of the decision making process as equal partners (see e.g. Turner 2004).

We can see from the citation that the WFD also gives ample opportunity for a broader and direct participation of the general public. An increasing involvement of the public in decision-making, next to traditional democratic representation, furthers the need to fully engage in deliberative participation. Current trends indicate that three processes are ongoing, which have caused the growing importance of public participation:

1. *Negativism*. There is a general feeling of democratic deficit. On the one had, some governments seem no longer to deliver the results as desired by the public and public trust in political decisions has fallen dramatically and is not recovering, causing a crisis of legitimacy. On the other hand, governments are constrained by global economic interests and by multi-lateral obligations, and lack the capacity to meet the many and frequently conflicting local population needs.
2. *Pragmatism/efficacy*. There is a growing awareness among governments that decisions are often no longer acceptable without participation of the public in the decision-making process. Without this public consensus, decisions may fail.
3. *Citizenship/sustainability*. Nowadays people want to be able to shape their own futures. We have a self-evolving society, which is a recent trend. ICT has a role in this, in that it opens up information to an ever-wider audience and enables people to coordinate and direct actions. It is now possible to visualise images of future flooding, or landscapes or coastal patterns to allow stakeholders to see for themselves how future patterns of landscape and policy may evolve. Such images are critical in the participatory process.

Norris (1999) studied 28 countries and one of his conclusions is that Scandinavian countries still have powerful coalition governments, who cooperate creatively to establish wide acceptance for their decisions.[4] For example, in setting the UK carbon tax, the government worked with industry via a consensus approach (DETR 2000). However, this did not stop complaints about increased costs once the carbon tax was implemented, particularly as competitors in some other countries

4 See also CEEP (2002) on governance.

were not subject to such progressive environmental taxes. In the specific context of Norway, the implementation of a carbon tax did not ask for rigorous changes of the mainstream economy; the story may be quite different elsewhere. When the coalitions are less powerful or countries have single party governments, the qualifying negativism plays a much larger role.

This brings us to the question as to what makes public participation successful? Indicators of community trust are necessary to provide the answer. Public participation is an interactive process, being much more than either top-down or bottom-up. In this interactive process there is a need for both larger structures of guidance that also set the boundaries of the process, and smaller structures of self-evolvement in which the decisions grow. Participatory methods are certainly not the panacea of future coastal management, as there are dangers in putting institutions based on deliberative processes in place (see O'Riordan, this volume):

- We do not always know the stakeholders, as information and understanding of processes is limited;
- Openness is not necessarily the best strategy, as an open dialogue between stakeholders with different powers is difficult to achieve. As a result, a solution, which is optimal for everyone, may not exist, because not all partners strive for optimal solutions;
- There is a danger of bias, when only a small number of voices are heard. In such a situation, power differences may increase, as the public participation process may strengthen involvement of certain groups over others;
- The existing mandatory frame (existing legislation, but also financial constraints) for the deliberative process may lead to disharmonious rules. It may lead, for instance, to infeasible budget requirements;
- Perverse outcomes may emerge, because of excessive demands by particular individuals or groups. This is also known as the "squeaky wheel" syndrome. Such outcomes may be rigid, inappropriate, inconsistent (compared with national or international requirements), short-term, poor compromises, or contrary to people's well being and good water management.

These difficulties may be overcome by reshaping decisions. The greatest danger may be when society and its decision-makers do not engage in participation at all. Moreover, the process of a higher level of public participation is evolving, irrespective of whether it is good or bad. Consequently it is necessary to anticipate on participatory processes. For this, the following can be suggested as rules-of-thumb guidelines for improved public participation:

1. Establish an open dialogue between scientists and practitioners where community intelligence is valued at the same level as scientific intelligence;
2. Provide for a genuine ability to share outcomes. If certain outcomes are mandatory beforehand, an open dialogue will never be possible;
3. Devise visioning procedures (Turner, this volume). Have a catchment forum, and sub-catchment ones for large areas, which enable various stake-

> holder interest and catchment managers to meet face to face (Janssen et al. 2003). ICT offers many possibilities for visualising possible design outcomes for rivers and coasts. Such a visualisation helps to rule out certain measures and choose among alternative viable measures. But visualisation on its own is no panacea. It is a tool for more effective civic engagement.

Based on this, we distinguish among five important factors that drive inclusive participation in Table 1. First, the publicly perceived democratic deficit implies that the general public no longer easily accepts "top-down" political decisions: there is a need for informed public participation throughout the decision process. Second, the legal/regulatory mandate needs to be adjusted to account for changes in society towards public participation. Third, society is changing into a self-organising citizenship. Fourth, besides scientific intelligence, there is a need for inclusion of local knowledge and vernacular guidance in decision-making. Finally, as coastal management deals with long time horizons, there is a need for visioning futures through scenarios and storylines. These 'drive' the demand in the society and require to be attended when participation is to be incorporated.

Note that participatory procedures always take place in the context of political power, procedural legitimacy, and the statutory framework of agency commitments. So the framework of policies and power relations, which may be hidden from the public, shapes participation. Just because there is participation, does not mean to say that it is legitimate or well executed. It is vital that the wider institutional biases are properly understood before any participation programme is evaluated.

Based on these societal drivers, an attempt was made to derive a number of traits, required for a successful management style for the coast and the institutions associated (Table 1). Integrated coastal zone management is complex and interdisciplinary and dwells therefore on integrated assessment (Turner, this volume). We identify how integrated assessment is to be deployed to meet the requirements of our five drivers, and what indicators would be useful to assess their successful deployment. We included a third column here, labelled thresholds, since we felt that to assign such thresholds would be important indicators of societal transition towards an institutional incorporation of deliberate participation.

Table 1 summarises the drivers and the implications for managing integrated coastal futures. It is aimed to be in parallel with the scenarios table issued elsewhere in this book. The purpose is to summarise the key drivers as outlined in the text, and to run these against management and institutional arrangements that may have to be modified for effective public participation to be put in place.

The table emphasises that public participation is driven by a loss of trust in conventional politics and political decision-making. It is also promoted by legal rules set in directives and regulations, as is the case for the WFD. It is further promoted by citizens who now feel they have a responsibility to shape their own lives and catchments. And there is a technology and a decision format available via visioning and participatory geographical information systems. The vertical columns apply to six measurements of comprehensive integration. Much of the right hand

side of the table reveals the need for capacity building and skills training in the more adventurous aspects of participation.

Furthermore, this table points out (in the last row) that interdisciplinary problems need integrated assessment, which can be performed by undertaking Driver-Impact-Response and scenario analyses. As an outcome, existing institutions need to be examined and in some cases redesigned, which can be achieved through a comparative analysis of institutional drivers. This will be discussed in more detail in the next section.

Institutional change and cost consequences

The WFD is often considered rather prescriptive in its implementation (Ledoux et al, this volume). The directive nevertheless leaves much room for its implementation to the countries themselves, as long as they achieve the targets of a good ecological status. Thus, the WFD largely sets the playing field with issues like river basin approach and transboundary cooperation, on which countries can make their own match. For example, managed realignment[5] can also be used as a flexible instrument in implementing the WFD and is a very important tool for the Habitats Directive. Managed realignment of coastal defences can also be an alternative to solid dykes (Rupp and Nichols 2002). As institutional arrangements differ from country to country, it is interesting to compare WFD implementation in various countries.

Public tasks, such as the management, monitoring, enforcement, as well as implementation of amelioration measures, are carried out by institutionalised organisations, often with delegated powers from the government. Sufficient legal and financial support is a prime condition for their appropriate functioning, but public recognition, as well as a mechanism for public engagement (O'Riordan, this volume) is equally significant. These organisations vary from country to country and a variety of mechanisms are used for public engagement. Often these are for single issues, but they can develop into multi-issue groups.

One important element of ICZM is that often measures, such as the ones required in the WFD, have long-term effects. Handling complex issues with a long-term perspective of say 70 years requires an adaptive design approach and institutional management. Important elements here are:

1. A participatory deliberative culture that embraces the precautionary principle (e.g. EEA 2002);

[5] Managed realignment 'involves setting back the line of actively maintained defences to a new line inland of the original – or preferably to rising ground – and promoting the creation of inter-tidal habitat between the old and new defences' (Rupp and Nichols 2002).

Table 1. Requirements for management and institutions from drivers for inclusive participation

Drivers	Management			Institutions		
	Integrated assessment	Indicators	Thresholds	Comprehensive-ness of function	Responsiveness – capacity - skills	Pro-active and precaution
1. Democratic deficit	Governmental	Politically intelli-gible and socially derived	Opportunity not fear; Taking re-sponsibility for-ward	Test for compre-hensiveness	Training/ Capacity building	Shared under-standing and re-sponsibility
2. Legal/regulatory mandate	Due process fol-lowing established procedures	Legal requirement as laid down in regulations	Justification through participa-tive science	Proving legitimacy	Testing for skills training needs	Designing for worst case
3. Self-organising citizenship	Network forums at local scale	Locally grounded	Locally grounded	Stakeholder inclusion	Creating commu-nity leadership	Locally grounded
4. Local knowledge and vernacular guidance	Dialogue of shared knowledge	Shared knowledge	Trust and confidence	Dialogue and Media	Using local train-ing and schools to image futures	Shared knowl-edge
5. Visioning futures	Scenarios Storylines	Socially intelligible	Mapping impact trails	Reasoning the Remits	Training work-shops	Testing for op-portunity and compensation for new livelihoods
Comparative analysis of institutional drivers	Interdisciplinary→integrated assessment→ Driver-Impact-Responses and scenarios			Institutional examination and redesign based on critical evaluation of coastal management arrangements		

2. The notion of long-sightedness is difficult to introduce: how to get people to think two generations or more ahead? Long-sighted democracy needs self-adaptive community networks that are based on sustainability;
3. Insight into planning and decision-making is needed as, for instance, planning a marina will freeze land for 70 years, while a better environmental solution for this land could have been to turn it into salt-marshes;
4. A precautionary society that enables decisions, before certainty in cause-effect mechanisms is confirmed and thus allows for mistakes;
5. Coastal partnerships designed as open and adaptive structures. Such mechanisms are needed to bring people together.

In deliberative processes, it is important to have clear and shared objectives. Redesign for longer-term coastal decision-making of organisations will only take place when it is viable and if real improvement can be achieved. The setting of objectives should therefore also be done in a deliberative process. Although this can be a laborious task, the result is often worth the effort (e.g. Gregory 2000).

Distinct cultural/political differences across Europe should be taken into consideration in long-term planning for sustainability. In pre-accession countries, for instance, political problems (distrust in institutions, uncertainty about the present and the future, anxiety about day-to-day living) discourage people from long-term planning. In pre-accession countries such as Turkey, in Greece, and also elsewhere, substantial fractions of the human population connect significance in their daily lives to a kind of predetermination or *kismet* overruling the future. This may be an important cultural driver, which may discourage long-term planning. Engagement of all societal strata in a deliberate, long-term participatory decision-making process may meet unexpected opposition here.

Elsewhere, public participation is only invoked after planning conflicts have magnified and stakeholder positions are falsified. Cultures, with a traditional working class-elite, conflict with massive strikes and property looting and will not easily develop consensus platforms and negotiations.

Turkey, as pointed out in De Bruin et al., this volume, has a water management structure, but this does not comply with all the principles of integrated river basin management (De Bruin et al. this volume). Turkey is implementing the WFD in the context of her pre-accession status and is very interested in utilising the WFD methodology. Clear objectives and implementation strategies could improve catchment management in Turkey.

Greece does not perceive the sea level rise as a problem, whereas water scarcity is considered the main problem. Such a perception can lead to overreacting. In extracting water in certain parts of Greece for example, farmers over-extract in June in their fear of facing scarcity in July and August when water is needed for the rice crop. While the total amount of water should be sufficient, through this behaviour, the farmers themselves create problems. Through a participatory process, in which the problem situation was discussed, the situation could be improved.

Institutional change also has financial consequences. Is it possible, for instance, to charge a German farmer for not reducing nutrient loads that lead to negative impacts in the Dutch coast? This example shows that the principle of full and fair

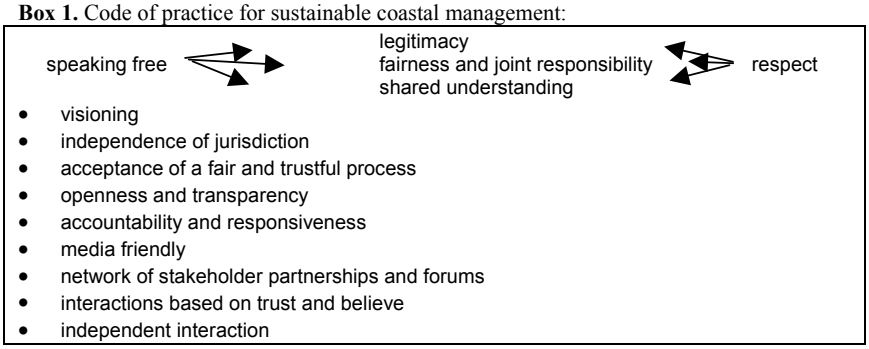
cost recovery is difficult to achieve. In the case that costs are recovered, it may still be necessary to decide whether revenues should go to nature conservation, flood protection or the general revenue. Is it possible to compensate people when they are financially disadvantaged in the provision of an ecological benefit? This is possible by financing ecosystem functioning via a trust fund or stewardship fund. Alternatively, environmental bonds may be issued. For example, in the case of coastal water pollution, bonds may be auctioned on reaching a desired reduction in the load to the sea. The bonds, which should be tax-free and financially attractive, will only be paid out once the target is reached. In this way, cost-effectiveness can be reached without government planning (see also Horesh (2003), for a more general discussion, or Lise and Van der Veeren (2002) who calculated a possible cost optimal solution of the eutrophication problem in the North Sea from the Rhine basin).

In the previous section (Table 1) institutional change was called for, coupled to changing needs. A number of priority questions arise, which call for a careful analysis by also taking local priorities into account. Important questions would be: What should institutions dealing with coastal issues look like? What is one looking for in institutional design and capacity building? What expert system or decision-making tools do we need?

One answer is that we need community forums for validation that are built on new institutional design. .We need an institutional design that facilitates the dialogue between community intelligence and scientific intelligence. This is also a modelling challenge: how to include local intelligence into models? Community intelligence may be important for setting minimum conditions for viable ecosystem functioning, but the participatory process should also be used to explain and gain acceptance of national and international requirements and constraints on action. Knowledge should be gathered from different sources: local – national – international. A process is needed that integrates from the small scale to the large scale. In this process, it is also important to show the environmental benefits in order to get public support, as without it, it is becoming more and more difficult to take decisions.

Uncertainty has to be kept in mind when presenting scientific results, especially when it concerns results that look into the future, because scientific outcomes have errors and policy objectives change. How should we deal with this? A self-evolving process, which is flexible and adaptable, may be a valid alternative when top-down solutions are not possible. There is also a role for the media, namely by informing citizens so that uncertainty about public behaviour will reduce and public confidence in the carefulness of the decision process will increase.

Box 1. Code of practice for sustainable coastal management:



A code of practice would assist institutional review to include such elements for sustainable long-term coastal management (Box 1). O'Riordan (this volume) elaborates on these issues. It is vital that the procedures be independently evaluated and validated, and presented to all parties for their understanding, before any deliberative process is concluded.

Conclusions and recommendations

In this chapter we treated four themes, namely the boundaries of the water body and management structures, the relation of the WFD to other legislation, the role of public participation in implementing the WFD, and the required institutional changes for implementing the WFD and cost consequences. Based on these themes we now try to address the main question: What is the most effective way of managing the river coast continuum and what should be the role of public participation, EU ('Brussels') and catchment managers?

From the boundaries of the water body and management structures, it was concluded that coordinated action is needed to oversee the river-coast continuum. The use of soft-law should be encouraged here, as hard law will follow suit much later at such a large scale.

The relation of the WFD to other legislation indicates that there should be clear objectives as to the process of achieving public involvement in the WFD programmes and projects. In addition there should be codes of practice as to how to ensure effective active involvement. These codes should define how to ensure legitimacy and representativeness, as well as trust and responsibility in the deliberative experience. Sensitivity to the cultural, geographical, and project-based circumstances of countries and localities is useful and would require 'open' decision-making.

Hence, there is a clear role for public participation in implementing the WFD. While there are some dangers of putting public participation in place, the greatest danger may be not to participate at all. Moreover, the process of a higher level of

public participation is unstoppable, irrespective of whether it is good or bad. Consequently it is necessary to anticipate and design participatory processes.

Related to the required institutional changes for implementing the WFD and cost consequences, we need clear objectives about which areas require public involvement. This may be possible by showing the benefits and knowing the problem. We also need to account for cultural differences, which can influence the implementation of the WFD. For that, a dialogue is needed which brings together community intelligence and scientific systems understanding.

Waiting in the wings is the possibility of new institutional forms for co-operative, integrated and long-range river and coastal management. O'Riordan (this volume) offers one model. This is primarily based on UK experience and opportunities. There is scope for an EU wide discussion of new institutional forms for coastal and river management under conditions of climate change and sustainability planning.

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