



Research Report No 2.3 I-Five: Innovative Instruments and institutions in implementing the water framework directive french case study report : implementing the WFD on the Thau basin

Gabrielle Bouleau, Sylvain Barone, P. Maurel, A. Richard-Ferroudji, G. Abrami, Flavie Cernesson, S. Richard

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Research Report No 2.3

I-FIVE: INNOVATIVE INSTRUMENTS AND INSTITUTIONS IN IMPLEMENTING THE WATER FRAMEWORK DIRECTIVE

French Case Study Report: implementing the WFD on the Thau basin

submitted March 8, 2009

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Summary for Decision-Makers

Headline Summary Message

This case-study report of the i-Five project presents how the Water Framework Directive is implemented in the French case-study planned in the project. Central in project is the evaluation of innovative instruments and institutions (i-3's) for implementing the Water framework directive (2000/60/EC; WFD). In the three case-study reports we gather information concerning such innovations and their contexts to further elaborate in the next report whether they could be of interest for other context. In France, we present the implementation of the WFD in the Thau basin. Interesting aspects of this implementation process include collaboration between the water sector and land-use planning sector and the cooperation between the authorities and different research projects. In Germany, three "area cooperations" in the Weser basin are presented, which are novel ways for organizing public participation. In addition, the issue of financing and coordination between governance scales is analysed. In the Netherlands, the implementation of the WFD Explorer in the Dutch part of the Meuse basin and in particular the area of the waterboard Brabantse Delta is presented. The WFD Explorer is a decision support system for the implementing the WFD.

What the report is about and why the work is important

This case-study report of the i-Five project presents how the Water Framework Directive is implemented in Thau. Moreover, the case-study report addresses the key challenges of implementing the WFD that we identified in the inception report. We dealt with these challenges by answering basic questions for all cases and detailed questions when the case is relevant to in-depth analysis of a specific challenge. Although no common conclusion shall be expected from this report since cross-case comparison is the next step, the case study reports valuable information about local interpretations, decisions, difficulties, and remaining uncertainties concerning the implementation of the WFD in each case.

The report will be of interest to everybody who looks for contrasted examples of practical challenges arising from the field when multi-level and multi-purpose governance systems are trying to decide common water quality objective and to design common program of measures. It gives feed-backs on how the WFD is implemented at the local level in practice.

Aims and objectives

The aim of the i-Five project is to support the implementation of the WFD by promoting the trans-boundary exchange of experiences, by broadening the range of methods and tools available to water managers, and by helping water managers to develop the best approach for their own circumstances. The aim of the case-study report is to provide the stakeholders with detailed information on the French context in Thau and to serve as a basis for analysing common difficulties and uncertainties, and diverging strategies and innovations.

Interaction with stakeholders plays a central role in the i-Five project. These include the authorities responsible for implementing the WFD at the local, grassroots level, as well as other stakeholders involved in the implementation. We believe that involving stakeholders actively in research increases the relevance of the research for them and enhances the uptake of the results in practice. In order to reach stakeholders that are not involved in the case studies, we will also organize training and under-

take other dissemination activities, such as publishing in professional journals and newsletters and giving presentations at conferences for practitioners.

Key findings

The i-Five project has officially started on 1 September 2008 and will be completed in October 2010, yet the French team and the Dutch team officially get their funding two months later and have their schedule postponed therefore. The inception report presented our findings in literature which resulted in setting up our research strategy. It identified six main challenges to be looked at in detail in each case-study :

1. Institutional challenges for the transposition of the Directive
2. coordination across scales
3. integration between sectors
4. public participation
5. appropriation at local scale
6. role of expertise

The three case-studies answer basic questions regarding how local settings and actors addressed the six challenges. Some cases were more relevant than other to gather in-depth information on a specific challenge. Additional questions are dealt in such cases for the given theme. In the following table crossing cases with themes, the more X the more details are provided on theme in the corresponding case.

Theme	Weser basin	Thau basin	Meuse basin
1. Institutional changes	XX	XX	XX
2. Coordination across scales	XXX	X	X
3. Integration between sectors	X	XXX	X
4. Public participation	XXX	X	X
5. Local "Appropriation" of the WFD	X	XXX	X
6. The role of expertise	X	X	XXX

The French case-study located in the Thau basin revealed interesting innovations for the WFD. Although France already had basin-scale organization, some institutional changes occur following the WFD. At national level, a central office for water and aquatic environment was created in 2006 and resulted in a re-centralisation of expertise and decision making for the implementation of the WFD. In parallel, the decentralisation process launched in 1992 with basin planning and local planning has persisted.

The Rhône basin revealed to be very specific in the way decision-making processes happened. Bottom-up approaches were used to set environmental goals and to select measures, whereas in other French basins a more centralised approach was used. Such processes became at odds with general objectives set in the Grenelle, a large participatory process at national level on environment issues which determined the number of water bodies to achieve the good ecological status (66%). Both processes were reconciled using uncertainties concerning very little water bodies. Mostly experts were involved. Their contributions resulted in blurring the objectives of the Grenelle. However most significant stakes discussed at local scale (notably in Thau) were kept in this process.

The Thau basin is a territory in which integration between sectors, notably between water-related and non water-related public policies have a twenty-year-long history of integration. This process was initiated by State representatives benefiting from large state competences on the sea-shore. However local political officials seized this opportunity to orient the development of the area toward the conservation of the lagoon. Dedicated staff was hired to support this integration and perimeters of land use and water planning were adjusted.

We found that the person in charge of facilitating collaboration between institutions and sectors on water issues at sub-basin level, the sub-basin *animateur*, has a key-role for implementing the WFD objectives and overcoming integration challenges. This role sustains a stewardship of the Thau basin, a local appropriation of the WFD goals and procedures and it fosters public participation.

We argued that this role is not specific to Thau and can probably be transplanted to other sites, although it requires institutional changes.

Implications for stakeholders

This case-study report intends to perform as a mirror for stakeholders. At this phase, it is primarily oriented towards national stakeholders to reflect on how researchers have perceived and analysed their strategies, difficulties and innovations. We hope that this mirror will raise critical reflexions and feedback from the stakeholders to enrich the next phase of cross-case comparison.

National cases may nevertheless be of interest for other EU readers as a second order mirror, offering a different trajectory of WFD transposition and implementation. It may raise interesting questions regarding one's own strategy and understanding. In order to help this second order reading, we offer hereafter a short table where readers can easily find where each topic is mentioned throughout the report.

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1 Introduction

“This chapter provides a short presentation of the report, explaining the position of this report in the research design and giving some characteristics of the site chosen for the reported case-study.”

1.1 Research design

This report is one of the three case-studies reports developed within the i-five project of the IWRM-net program. Their goals are twofold:

- they first aim at illustrating through anecdotes and in-depth analysis what are the challenges of the WFD implementation in 3 specific contexts, what innovations are developed to overcome potential difficulties and what can be learned from their development and implementation;
- they also aim at providing a terminology of roles, resources, rules, challenges and settings that were key elements to explain how the WFD was implemented.

Both goals will nurture the cross-case comparison and the elaboration of a quick-scan method to assess the potential for transplanting of innovative institutions and instruments developed in each case.

This report presents how the implementation of the Water Framework Directive takes place in the Thau basin, France.

The research method is inductive. We conducted 15 semi-structured interviews among 22 actors (state representatives, political officials, and stakeholders in Thau and some actors at basin and national level). Interviews were integrally taped. We attended public meetings dedicated to the WFD implementation or more broadly to land-use planning or water management between September 2008 and March 2010. We analysed official documents and drafts related to the issue. We systematically kept and analysed the press during this period. We valued previous surveys made among *animateurs* identified in France (interviews, observations, detailed questionnaire (45 answers)).

The first chapter outlines the gaps between the WFD and the current water management and regulation in France in general and the in the Rhône Basin in particular.

Chapter 2 goes into details through the process of implementing the WFD in the case study. It shows how the challenges raised by the WFD in this specific area are addressed.

Chapter 3 focuses on a specific feature of the Thau basin. Indeed in the basin surrounding the Thau lagoon local authorities have decided to combine water management planning with land use planning. This chapter explains the strengths and weaknesses of such a process and what made it possible. It also discusses the potentials of such an innovation beyond its specific context based on literature and original observations.

Chapter 4 articulates the specificity and the general character of the case using a common terminology to envision possible transfers of innovation.

Chapter 5 concludes on WFD challenges and the changes it requires. It sums up its implementation in France and in Thau in particular, raising remaining uncertainties.

1.2 Reading Guide

The i-five inception report elaborated a set of questions to be answered in case-study. Such questions are listed in appendix. The case study area is presented in the next section. Chapter 2 deals with the transposition of the WFD in France and in the Rhone basin in general. It will be of great interest for any non-French reader. Chapter 3 focuses on the Thau basin. It further describes at local scale what the challenges of the WFD implementation are, using the framework of analysis we developed in the inception report. Chapter 4 focuses on a specific innovative instrument, namely the *animateurs de bassin* who are personal organizers of integration at basin level. This chapter gathers general information on *animateurs* at national level as well as empirical data in Thau and other cases. It should be of great interest for any stakeholder interested by the political responsibility of integration at local level. Chapter 5 concludes on our findings,

1.3 Presentation of the case study area

The Thau territory belongs to the Rhône district managed by the water agency Rhône-Méditerranée & Corse which basin covers 130,000km² (25% of the national acreage) for 15 million inhabitants. Compared to the rest of France, water resources in the Rhône-Méditerranée basin are abundant (44% of the total national run-off) thanks to the Alps and its glaciers. However this abundance is inequally located : the Rhône and its tributaries bring the main flow whereas the Mediterranean part , where Thau is located, may experience water shortages despite large water transfers.



Figure 1. Water agencies in France. The Thau territory is located in the Rhône district.

The Thau territory derived its name from the Thau lagoon on the Mediterranean seashore. It is located in the department of Hérault in the South of France, 20km South-West from Montpellier, the regional capital (see Figure 2)

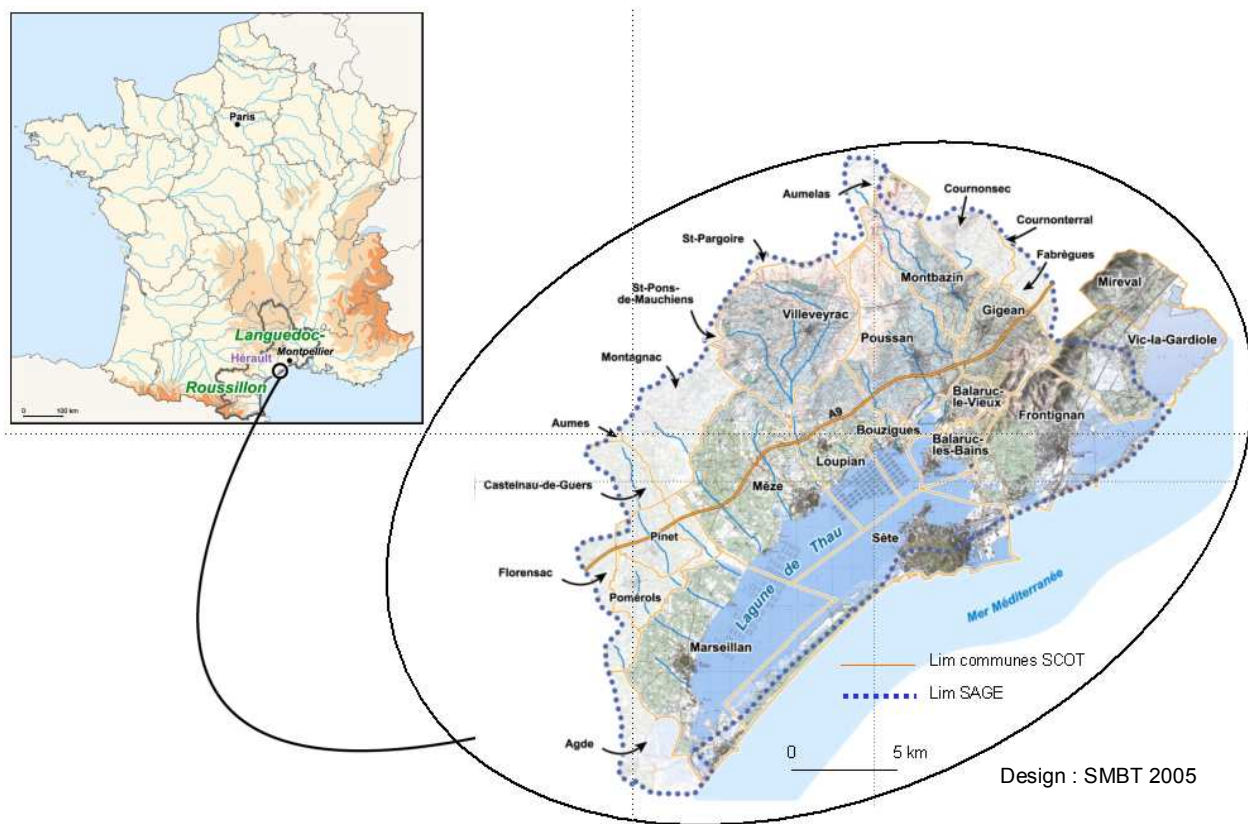


Figure 2. Location of the Thau territory within the Region Languedoc Roussillon and the Département Hérault.

Its catchment spreads over 44,300 hectares, of which 7,500 ha are brackish waters of the Thau lagoon. Its climate is Mediterranean. The land includes 30km of sea beach. Biodiversity and landscapes are acknowledged as extremely rich.

22 municipalities are located on the catchment but our case-study focuses on the 14 closest to the lagoon and gathered into two public-bodies for inter-municipal cooperation (EPCI) : the CABT (Communauté d'Agglomération du Bassin de Thau) in the South and the CCNBT (Communauté de Communes du Nord Bassin de Thau) in the North. The present population is 130,000 inhabitants and it nearly doubles during the summer season. Most of the drinking water resources are from the Herault River on the Western side of the Thau territory.

The main economic activities are related to the harbour of Sète, to shell farming and fishing, vineyard, tourism and spa. Industries and vineyards are nevertheless in crisis. In the Thau lagoon, shellfish farming activity (oysters and mussels) covers about 20% of the whole lagoon area and yearly produces about 15000 tons of shellfish providing work for approximately 2000 persons.

This Thau territory is very attractive for tourists and urban workers commuting to Beziers and Montpellier. It is accessible by highways A9 and A75. The future Montpellier TGV station is presently under discussion and could be located in the South West of Montpellier, close to the Thau area. Demography and the induced real estate market are growing extremely rapidly. Projections for 2030 predict Thau territory to have one of the most growing population in France. These current trends have resulted in the development of a so-called residential economy that appears to be competing

with the traditional economy. This also threatens existing natural ecosystems. Figure 3 shows the main economic activities of the Thau territory.

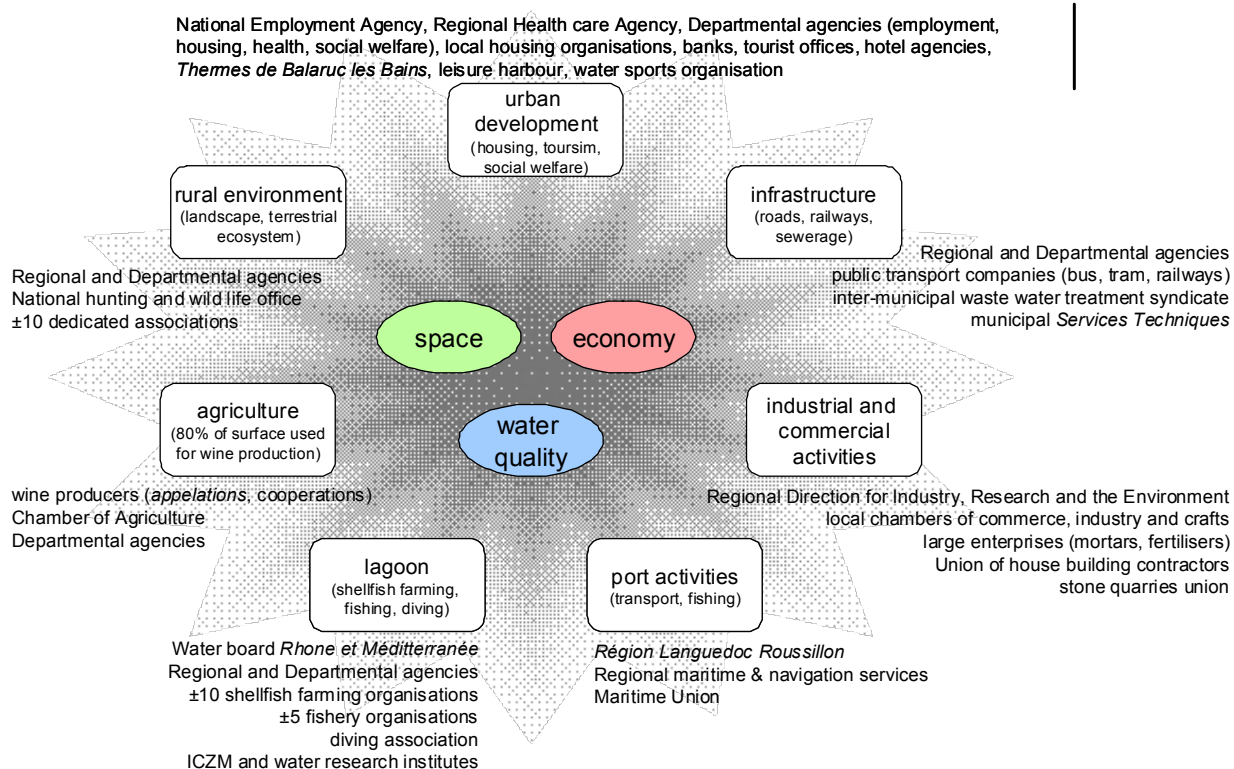


Figure 3. Activities and stakeholders on the Thau territory.

The lagoon production depends to a large extent on nutrient inputs into the ecosystem, supplied mainly from fresh water. Because of the weak tidal range, the residence time of water masses in the Thau lagoon mainly depends on wind and barometric effects and it has been estimated that the water renewal time is about 3 months.

Its catchment area is drained by numerous small streams with intermittent flows. The geology of this basin is very contrasted: the northeast is mainly formed by karstic limestone while clayey marls dominate the southwest. Anthropogenic pressure on the catchment area is due to agriculture (mainly vineyards), agro-food and fertilizer industries, and domestic sewage. Due to these pressures and to the low water exchange, the Thau lagoon has experienced, during several summers, acute eutrophication problems with anoxic crises (*malaïgue*). In august 1997, nearly one third of the annual oyster annual production was lost. It is also since 1998 under the influenced of harmful algae blooms (*Alexandrium*) with direct impact on shellfish production and commercialisation.

2 Historical background and present implementation of the WFD in France and in the Rhône-Méditerranée basin

“This chapter contextualises the case-study in a broader French history of water management. It revolves around two main sections. The first one presents what existed before the WFD enactment and what had to be changed to implement it. The second one explores how practically environmental objectives were set and programmes of measures were designed.”

2.1 Water institutions before the WFD

Four significant elements account for the current context of implementing the Water Framework Directive in France: the relations between the central State and local political entities, the lack of existing quality standard objectives for freshwater, pending prosecutions for insufficient enforcement of previous European directives and high expectations of the civil society. The following is a historical presentation of how these elements came into being.

2.1.1 Decision making structures and relations between governmental levels and political

2.1.1.1 Relations between governmental levels and political entities

France has a long tradition of centralization. The State gained legitimacy through military, colonial and economic power as it provided the French people with security and welfare. Scientific expertise and financial autonomy are primarily located at State level. Lords' privileges and property rights were abolished during the Revolution along with all property requirements for voting and all communities but the nation. Private property rights were reallocated among former tenants. The government divided the country into 100 *départements* and 36,000 *communes* (municipalities) ruled by executive boards elected through territorial representation. In addition, the government had State offices –with State employees - at the *départemental* and *régional* level to control territorial decisions and provides financial support to their projects.

Very recently, in 1982, the act on decentralisation established 22 *régions* with distinctive competences from *départements*. It also restricted the State control on territorial decisions to legal compliance but it did not suppress the tradition of cross-funding for territorial projects. The governance system is presented in Figure 4 and Figure 5.

In 1999 and 2000, new laws (Chevènement, Voynet, and SRU laws) encouraged cooperation at the local level between municipalities to foster more harmonious development. The corresponding structures are called Public Bodies for Inter-Municipal Cooperation (EPCI). They can take different legal forms according to their size and whether they get their own tax revenues or not.

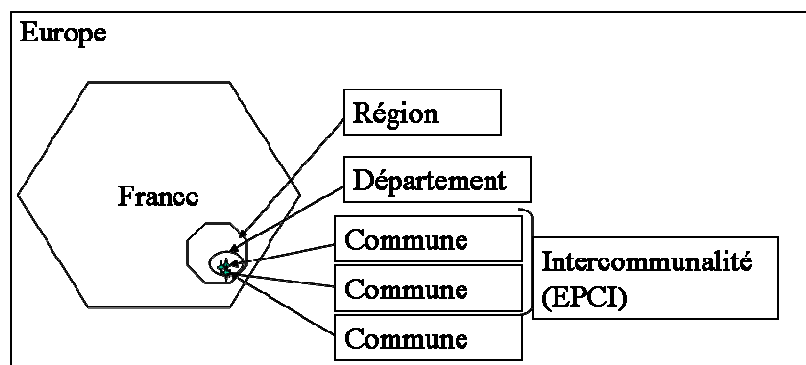


Figure 4. Territorial levels in France: projects at lower level often benefit from financial support from upper levels.

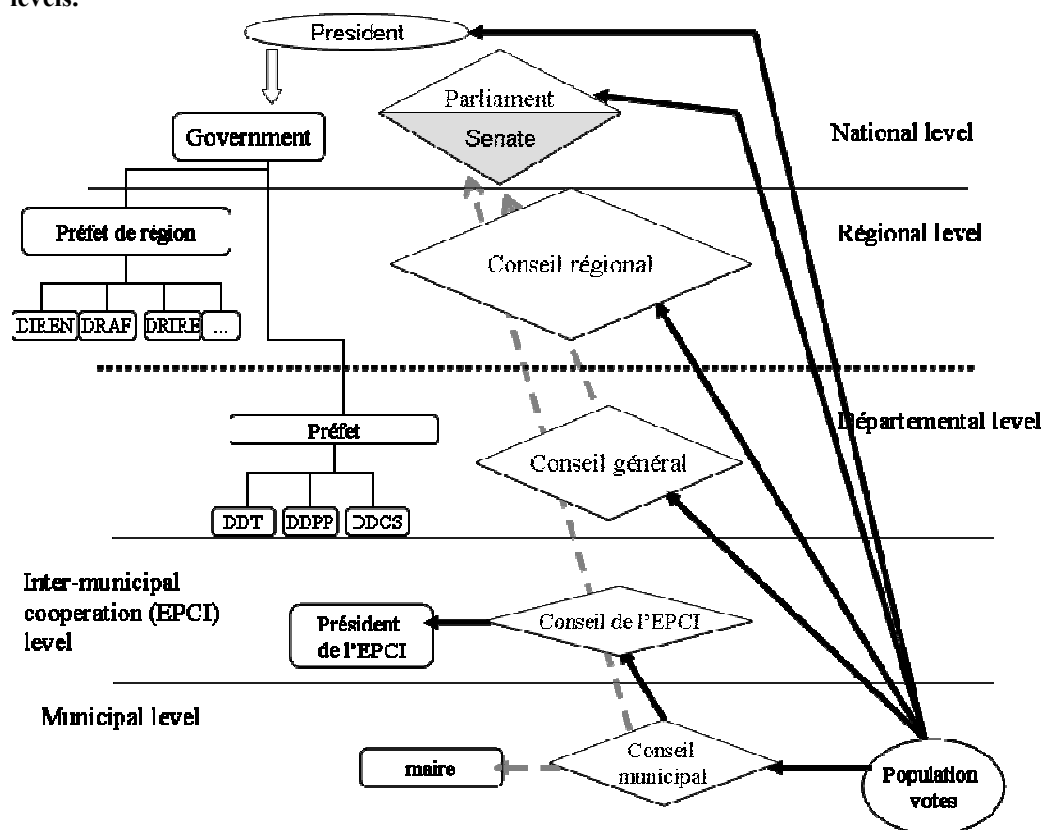


Figure 5. State administration and territorial political entities in France. People vote through common suffrage for territorial political entities (municipal, departmental, and regional boards) and for national parliament and president. The governmental administration has territorial divisions at all levels but municipal where mayors are supposed to implement some governmental policies. Territorial political entities have different competencies and no hierarchical relations.

A new step in the decentralisation process, called reform of local authorities, is currently engaged. The bill related to this reform will be analyzed by the senate from December 2009. This reform aims to simplify the French administrative puzzle by 2014. It will strengthen the power of the prefects, especially during a provisional period (2012-2013), to create, extend or merge EPCI, to merge existing inter-municipal syndicates in charge of public services (drinkable water supply, sanitation, transport, ...) or to disband them and transfer their activities to the EPCI. This reform will also encourage the emergence of metropolitan areas, either through formal structures with reinforced competences or through cooperation between existing EPCI. The draft text often makes reference to sustainable development issues (e.g. the ecological development is introduced as a new competence of the future metropolitan areas and raised at the same level as the economic development and land planning).

2.1.1.2 Competencies of institutions relevant in water management

Public domain

Water courses are divided into two categories: State rivers (*rivières domaniales*) which banks are public, and private rivers which banks belong to riparian owners. State rivers are mainly waterways, but small rivers can belong to the State when they used to be of national interest for shipping or log driving.

The public domain is ruled by the ministry of public works (recently joined the ministry of environment). Levees for flood protection are State property on the public domain but can be transferred to departmental assembly (*Conseil général*) for operation and maintenance. Waterways and water diversion for power generation are managed by private companies under State leasing.

Private domain

Associations of private owners (*associations syndicales*) may build and operate water infrastructures (levees, drainage, irrigation canals). If such infrastructures are acknowledged of public utility by the State, all beneficial owners are bound to pay charges to cover the building and operating cost according to their acreage and water use (*ASA associations syndicales autorisées*).

Environmental laws

The Ministry of Environment (*Ministère chargé de l'environnement*) states the national policy in the water domain (edict 2007-995 of 31 May 2007 and edict 2000-426 of 19 May 2000).

At governmental level, three directorates used to rule environmental issues: the directorate for the prevention of pollution and risks, the directorate for the protection of nature and the directorate of water (DE). In 2007, however, President Sarkozy decided to combine the ministry of equipment and the ministry of environment in one single ministry of ecology, energy, sustainable development and land planning. This decision resulted in a reorganization of directorates. The directorate of water and biodiversity emerged as one sub-unit of the directorate of land and environmental planning. This ministry controls the Water agencies.

State organization at regional and departmental level experienced similar restructurations: agricultural and urban policies are to be gathered in one departmental State office: Departmental Directions of land planning (*DDT Directions départementales du territoire*); industrial, land-use and environmental State offices issuing permits are already combined in regional State offices (*DREAL Directions régionales de l'environnement, de l'aménagement et du logement*).

At the basin level, the river basin coordinator (*préfet coordonnateur de bassin*) coordinates the actions of the prefects of the regions and the departments (Article R213-14 CE).

Maîtres d'ouvrages

The duty to decide on water-related projects (infrastructures), to initiate them and endorse the related responsibility is called *maîtrise d'ouvrage* and authorities exerting it are called *maîtres d'ouvrage*. This duty is legally distributed by sectors among different elected boards.

Command and control are mostly the duty of the State, but municipalities have some prerogatives in this respect for drinking and sanitation purposes.

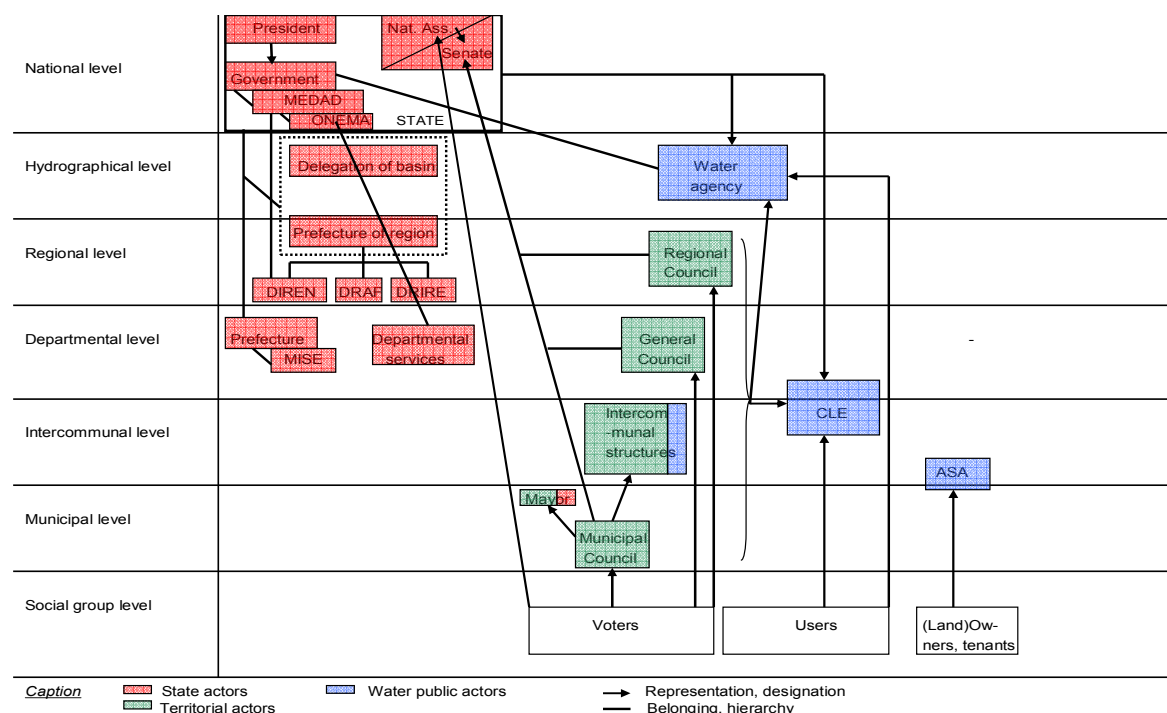


Figure 6. Water policy actors in France. 1/ Statuses

Water agencies

The 1964 water law established six water agencies (*agences de l'eau*) which boundaries follow basin logic with no consideration with former administrative limits (see Figure 8). The water agencies are under the co-responsibilities of the river basin coordinator (*Préfet coordonnateur de bassin* who is the State representative in charge of the largest region of the basin) and a *Comité de bassin* (basin committee) representing water users appointed by the river basin coordinator (Nicolazo 1993). They determined levies (ecotaxes) collected by Basin Agencies first based on oxygen demand then additional parameters. The water agencies cannot initiate projects for they are no *maîtres d'ouvrages* (see Figure 5 and 6). They deliver grants to fund projects initiated by industries and municipalities. Their financial support amounts typically to 20 to 50% of the total cost.

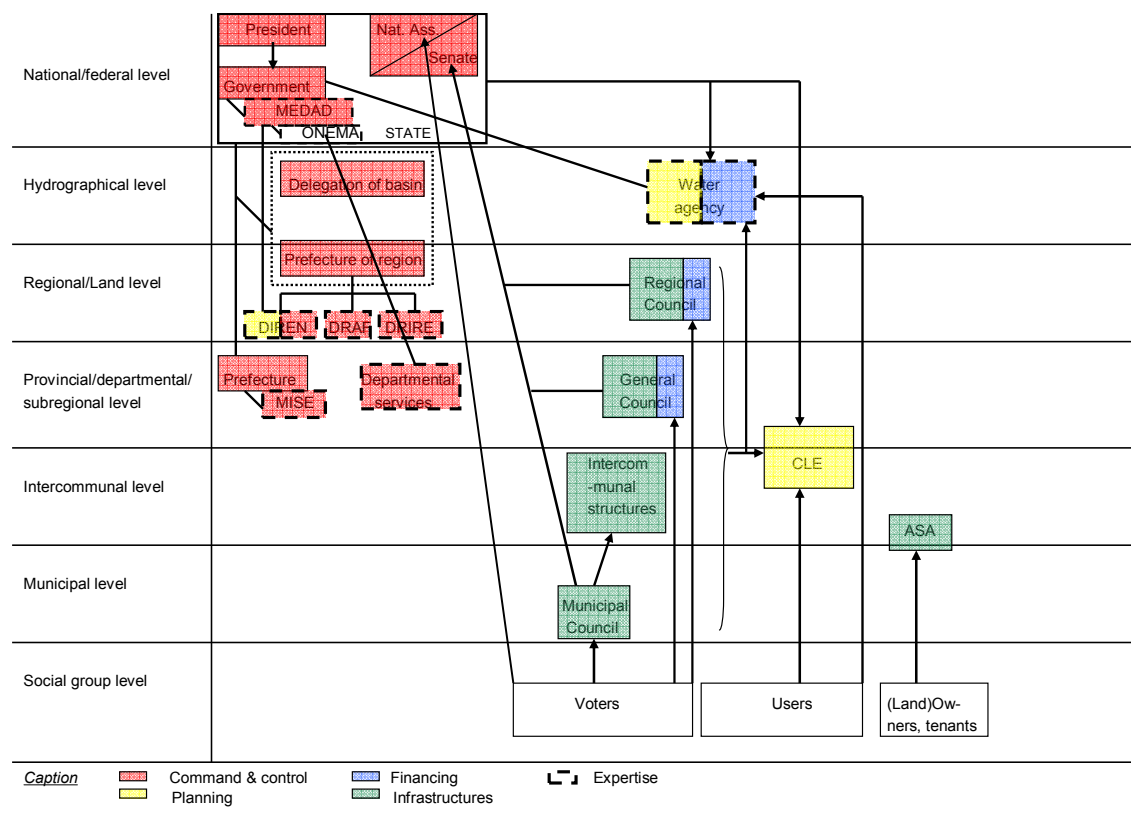


Figure 7. Water policy actors in France. 2/ Functions¹

Local authorities (*collectivités territoriales* or *collectivités locales*)

Local authorities (*collectivités territoriales*) are French political/administrative institutions/structures, separate from the State administration, which must support the interests of the population of a specific territory. Their definition and organisation is determined by the Constitution (Article 34 and Title XII), laws and decrees. These provisions are contained in the General code of Territorial authorities. A local authority is defined by three criteria:

- it has legal personality, enabling it to sue.
- it has specific jurisdiction, which is entrusted by the Parliament
- it has a decision power, exercised in a council of elected representatives. The decisions are then implemented by the local executive powers.

The main local authorities in France are municipalities, *Départements* (general Councils) and *Régions* (regional Councils). They are allowed to set up joint boards for specific competencies. Such joint boards are local authorities too.

The **commune** (municipality) is the oldest and the smallest political subdivision. It can be a small village with less than 100 inhabitants, a town or a large city like Paris. The organization of water supply, collection and treatment of wastewater and stormwater are under the responsibility of municipalities and their groupings. Each municipality also has the obligation to monitor non-collective

¹ DIREN, DRAF and DRIRE are in the process to merge. In some regions, DIREN have significant State funds to support flood mitigation measures.

wastewater treatment (septic tanks and land application). These skills are transferable to a public body for inter-municipal cooperation (EPCI such as: inter-municipal syndicate, mixed syndicate, district, and community of municipalities...). An on-going reform of local authorities plans to merge existing inter-municipal syndicates in charge of public services (drinkable water supply, sanitation, transport, ...) or to disband them and transfer their activities to the EPCI (see 2.1.1.).

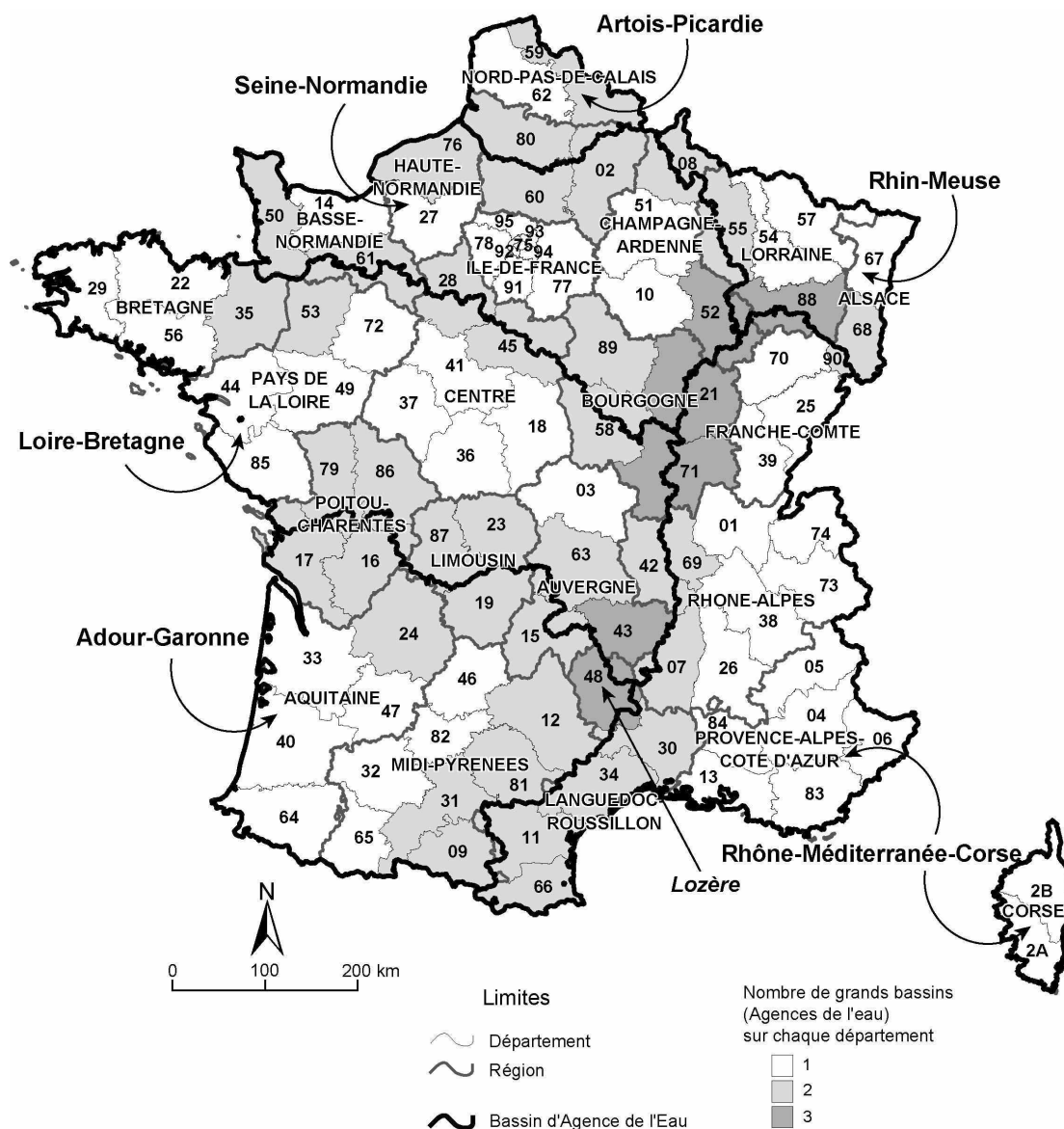


Figure 8. French water agencies were created in 1964 according basin limits which do not fit with administrative levels. Many departments (presented here by their numbers) are split among two or three different water basins. Regions (presented here by their names) are most generally in one basin but region Bourgogne and Poitou-Charentes for instance are also dealing with two agencies. Members of the comités de bassin are appointed by the river basin coordinator to represent political local entities (regions, departments, municipalities), water users and State offices.

The laws of decentralisation assigned compulsory jurisdiction in terms of water neither to the Regional governments nor to those at Departmental level. However, water is considered as a key issue in terms of local politics by most **Départements** and several **Régions**. With this in mind Departmental governments allocate a significant part of their revenue to water issues – on average 11,9 € per inhabitant (meeting of French Departments in 2003) – and seek from legislative bodies duly recognised competence and appropriate funding for it. The legitimacy of Departmental governments to act in the field of water is based on three factors: their financial and operational involvement (owner and initiator of the network, technical and administrative assistance to municipalities, dialogue structures), their democratic legitimacy to act on behalf of the public interest and finally the recognized requirement to manage water at local level (Grandgirard 2007).

Thus, Departmental Governments have remained the primary financers of water services, after the municipalities themselves, as a complement to the financing by the Water Agencies. The Water Agencies are making an increasing number of contracts with Departmental governments to define and harmonize action and to finance this type of investment.

Moreover, the Departmental Governments manage Accommodation Solidarity Funds (“FSL”) and particularly their aspects relating to water, thus introducing an element of social cohesion.

Some *Départements* have also implemented specific measures to finance the network renewal (Renaud et al., 2006).

Cooperation between municipalities and with/without other local authorities

Intercommunalité or inter-municipality

The term “*intercommunalité*” refers to different forms of cooperation between municipalities. This inter-municipality allows municipalities to join together in a public body for inter-municipal cooperation (EPCI). Unlike the local authorities, inter-municipal structures have only limited powers (principle of speciality). There are two types of inter-municipality:

- the associative or flexible form (known as “without own taxation system”), financed by contributions from municipalities that are members. It allows them to manage together activities or public services;
- the deeper or federal form (known as “with own taxation system”), characterized by the existence of both compulsory competencies and own taxation system.

Specific role of EPTBs² (River basin territorial public bodies)

EPTBs come within the scope of the 1964 Water Act which had thought about a coherent system based on three main types of stakeholders in the field of water:

- basin committees,
- agences financières de bassin (present water agencies),
- and public institutions that can be *maîtres d'ouvrages* for water related operations and projects throughout the catchments or sub-basin.

The law of 30 July 2003 on technological and natural hazards has recognised EPTBs as legitimate stakeholders in the management of rivers and flood prevention. The law of 23 February 2005 on the development of rural areas has clarified the role of EPTBs in terms of preservation and management of wetlands. Today many references to EPTBs are included in the code of the environment.

As seen previously, at river basin district level, water agencies have a limited duty of *maîtrise d'ouvrage* that applies only to water-related studies, but not to equipment works. At sub-basin level,

² *Etablissements publics territoriaux de bassin*

the Local Water Commissions³ (CLE) are not *maîtres d'ouvrages* for works and projects either. In order to fill this gap, the 2006 Act on water and aquatic environments encourages the emergence and the strengthening of institutions whose role is indeed to endorse this duty (*maîtrise d'ouvrage*) for all works. "In order facilitate, at river or river sub-basin level, the prevention of floods and a balanced management of the water resource and the preservation and management of wetlands, the concerned local authority and their groupings can work together within a River Basin Territorial Public Body ("EPTB")" (Article L213-12 of the CE).

Such an association presents the following advantage: "the Water Agency can charge, at the request of a River Basin Territorial Public Body and its own benefit, a tax introduced by this body for a provided service in application of article L. 211-7. The income from this tax is fully paid back to the budget of the River Basin Territorial Public Body, after deduction of management charges" (Article L213-9-2 of the CE).

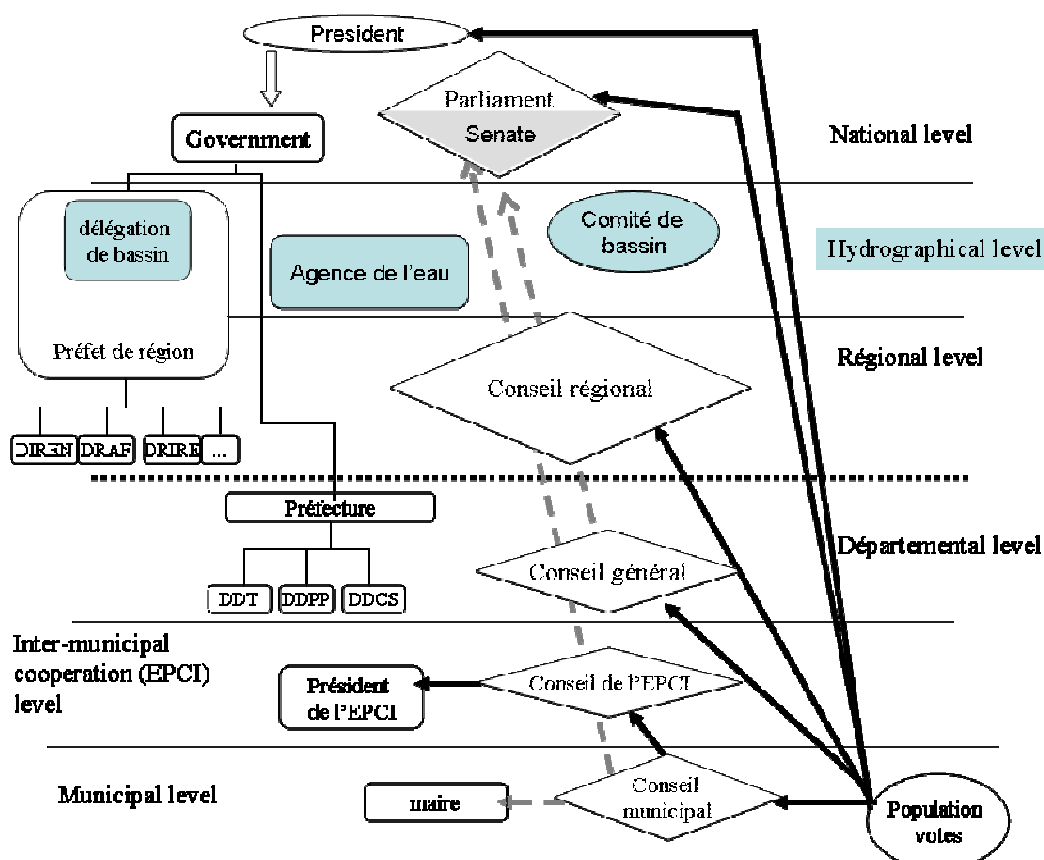


Figure 9. Governance of the basin level.

The préfet of the largest region in the basin district is appointed as river basin coordinator (*préfet coordonnateur de bassin*), and leads the dedicated State office named the *délégation de bassin*. He designates members of the *Comité de bassin* to represent water users according to State law. The *comité* votes levies and action plans under the control of Parliament and the water agency implements its decisions. The *SDAGE* is co-designed by the agency and the *délégation de bassin*, subject to public hearing and eventually approved by the river basin coordinator.

³ Some analysts consider that CLE correspond to local water parliaments. However members are not elected to seat in the CLE. Rather, they are appointed by the Prefect. Among them are some elected officials, whose election is territorial and not related to the CLE.

2.1.2 Specificities in knowledge infrastructures at national level

Since the 19th century, the State has set itself as a master to define “public utility”, advised by corps of engineers who have monopoly on public expertise (Thoenig 1973). Three technical corps of engineers manage water. The *corps des Mines* is traditionally in charge of industrial affairs and power generation, the *corps des Ponts et Chaussées* traditionally focuses on land-use and large public infrastructures (waterways, highways, cities, ...), the *corps of Génie Rural, Eaux et Forêts* rules agricultural issues and rural affairs. Unchallenged by civil society, strongly subjected to internal peer-review processes, each corps developed its one-best-way to manage water notably within specific public research institutes. Today, the implementation of the WFD largely relies on State experts coming from public research institutes (IFREMER, BRGM, Cemagref,...), *délégations de bassin* and water agencies (see 3.6.2.).

Until recently **regional, departmental and municipal boards** had little technical staff and heavily relied on State or private expertise but things are changing as the State reduces its labour force. The expertise is at State level but as we are going to see in the next section many decisions are to be taken by local elected boards.

Environmental associations are important actors which have been very efficient in raising public awareness on pollution and ecological crises since the 70s. However their status is weak which hampers their power. The law of 1901 on associations states that members of the executive board of the associations cannot be employed by the association. Only volunteers can lead associations in France, which considerably restricts their power. Such environmental NGOs are unevenly located in France. They have a greater power to influence politics in the North than in the South.

Therefore public participation is seen as a necessary challenge by both NGOs and experts.

2.1.3 Funding, cross-funding and cost-recovery

Water agencies never cover the total amount of investment costs of any project. Projects are partially supported by their initiators (*maîtres d'ouvrages*) and benefit from subsidies from water agencies and other institutions (Régions, Départements,...). Water agencies raise a total budget of 1,700 Million Euros per year which is entirely dedicated to water management. This budget complemented by cross-funding should cover the cost of the WFD implementation. It is allocated to projects according a 5-year programme approved by the *Comité de Bassin* and the State parliament. This programme is bound to become the Programme of Measures.

Local maîtres d'ouvrage (*communes, syndicats, départements and régions*) raise funds from water-related fees. The law of 1992 stipulates that “only water pays for water” which means that water users should cover 100% of the cost of municipal services including the ecotax charged by the water agency for environmental costs. This ecotax (*redevance*) is then used for water protection.

Nevertheless initial cost of water infrastructure often benefit from subsidies coming from upper levels. Local *maîtres d'ouvrage* often rely partially (up to 80%) on financial support from governance levels located above. Such a separation of powers poses a challenge to the State that is legally responsible for the implementation of the WFD but has to rely on other *maîtres d'ouvrage* to implement measures consisting of infrastructures.

The water system is not entirely **cost-recovery**. *Départements* and *Régions* support municipalities and intermunicipal boards for their water investments. This constitutes a financial transfer from taxpayers to water users (namely domestic users and industries connected to public networks). Households' contribution to water services (including environmental costs) exceeds that of the industry and the agriculture. According to the SDAGE Rhône Méditerranée (annual average 2003-2005), households' financial transfer to the industry (17.4 ME) and the agriculture (6.6 ME) reaches 24 Million Euros. In addition, households' contribution to the environment through the water bill amounts to almost 45 Million Euros (30.2 for environmental protection and 14.6 for the payments of environmental services). It is to be noted that households (along with farmers and industrials) benefit in return from a better environmental quality. Such figures amount for 14 million inhabitants located in the Rhône Méditerranée basin (130 000 km²)

In the Rhône Méditerranée district, the water-agency budget complemented by cross-funding amounts yearly to **4 Billion Euros**⁴ paid by the State, local authorities, farmers, industrials and consumers. The proportion of such transfers should not change in the coming years but the general budget is supposed to increase by 10%.

The measures' planning document of Rhône Méditerranée district displays basic (obligatory) measures in reference to WFD article 11.3. In addition, it proposed a thematic tool box for precise key measures in Rhône Méditerranée district. These key measures are classified by issues and coded. It also mentioned implementation means (legal, contract, or investment), the initiator (*maître d'ouvrage*) and the fund sources. Last, all the measures are localised by geographical commission and catchments.

As an example, after a general overview of main issues for geographical commission 17, a table gives pertinent key measures per catchment and ground water bodies.

Issues	Key measures
Develop local management	2A17: develop initiative of land control
Develop local management	3D16: follow pluri-annual wetlands management planning
Morphological degradation	3C14: restore aquatic habitats in rivers and lagoons
Morphological degradation	3C17: restore corridors and riparian vegetation
Modification hydraulic processes	5F31: study pressures and transfer processes
Domestic pollution and industrial pollution (except dangerous substances)	5E04: develop framework for urban runoff waters
Pesticides pollution	5F31: study pressures and transfer processes
Pesticides pollution	5D07: Implementation of dispositives to limit runoff and erosion
Pesticides pollution	5D01: Reduce the weeded zones and develop of the alternative techniques to chemical weedings
Dangerous substances except pesticides	5A41: improve the collect and treatment of harbour waters
Dangerous substances except pesticides	5A32: Control agreements of network connecting and settle the authorizations of discharges

⁴ Comité de bassin, press release, May 2008.

Table: key measures for Thau Catchment (AE RMC,2009)

The costs of measures program were presented at the district scale during a district assembly of 13th of december 2007 and submitted to consultation in 2009.

Measures	Estimated total cost 2010-2015 (Meuros)
To implement local territorial projects for sustainable development	90
Against domestic and industrial pollutions	500 (which 385 for measure 5E04)
Against eutrophication of hydrosystems	75
Against pollution by dangerous substances	200
Against pollution by pesticides	170 (which 55 for measure 5D01)
to assess and control risk for public health	130
to conserve or restore hydrosystems	475
to improve quantitative water resource management	220
Total	1 860

Table: Estimated costs synthesis (AE RMC,2009)

The total cost for all the measures was estimated to 1 860 for the period 2010-2015, i.e. 310 Million Euros per year. Some adjustments are identified for quantitative resource management and non point pollution reduction but the total should not change. Furthermore, these costs are presented as not redundant.

A repartition between users and pressures was presented. Environment sector means measures to conserve and restore hydrosystems, and measures related to risks for public health; in this case, initiators can be local authorities such as EPTB and local authorities, landowner, and water utility operators.

Pressure/user	Agriculture	Industry (included energy)	Local authorities (services and catchment management)	Local authorities (water supply and waste water)	Environment	Total
Pollution – toxic substances	170	195	20	500		885
Pollution – Eutrophication, public health	170		15		30	220
Hydrology (quantitative aspect)	60	75	95		15	250
Hydromorphology		65	30		405	505
Total	400	335	165	500	455	1860

Table 1: Costs per user and pressure (AE RMC 2009)

For the others aspects, non related to the program of measures, 600 Meuros are dedicated to flood risk management, 40 Meuros to provide water supply, 405 Meuros for wetlands management and 1 Meuros to integrate ecological aspects (fauna and flora) into water policies.

It is now possible to compare the cost estimation to financial fluxes. At present, the annual amount of financial fluxes is estimated at 4,250 Meuros split up into 1,350 Meuros for investment costs; 2,700 Meuros for operating costs; 90 Meuros for environment costs; and 110 Meuros for compensatory costs.

Aids and subsidies represent 733 Meuros split up into 425 Meuros from Water Agency, 210 Meuros from local authorities (*conseils généraux* and *conseils régionaux*), 70 Meuros from national or european funds (as *FEADER*, *FEDER*, *LIFE*, *Contrat de plan Etat-Région...*), 25 Meuros from TGAP (general tax on pollutant activities) and 3 Meuros from shipping tax (VNF tax). These aids and subsidies are mainly dedicated to investment.

The taxes to be collected in the 9th water agency program (2007-2013) represent a total of 1 600 Meuros (included 490 Meuros for hydrosystems, 120 for water resources and respectively 390, 130 and 230 Meuros for domestic, industrial and agricultural pollutions). The approach is to favour preventive actions and to implement public aids with ecocondition rules.

Hence, the costs of measures represent less than 10% of the all financial fluxes. These 10% are not necessarily "over costs" because some measures can be already paid with funds already identified. For example, measure 5E04 related to urban waters is already planned due to the implementation of Urban Water Framework (*DERU directive eaux résiduaires urbaines*). The water agency budget already includes provision for achieving the good status: the water taxes are quite comparable to the costs of measures. Some prevention at the source could also limit the costs of remediation. At present, the costs of the program of measures seem possible to cover from a macro-economic point of view. The main issue will be to display the financial fluxes between the different initiators and users.

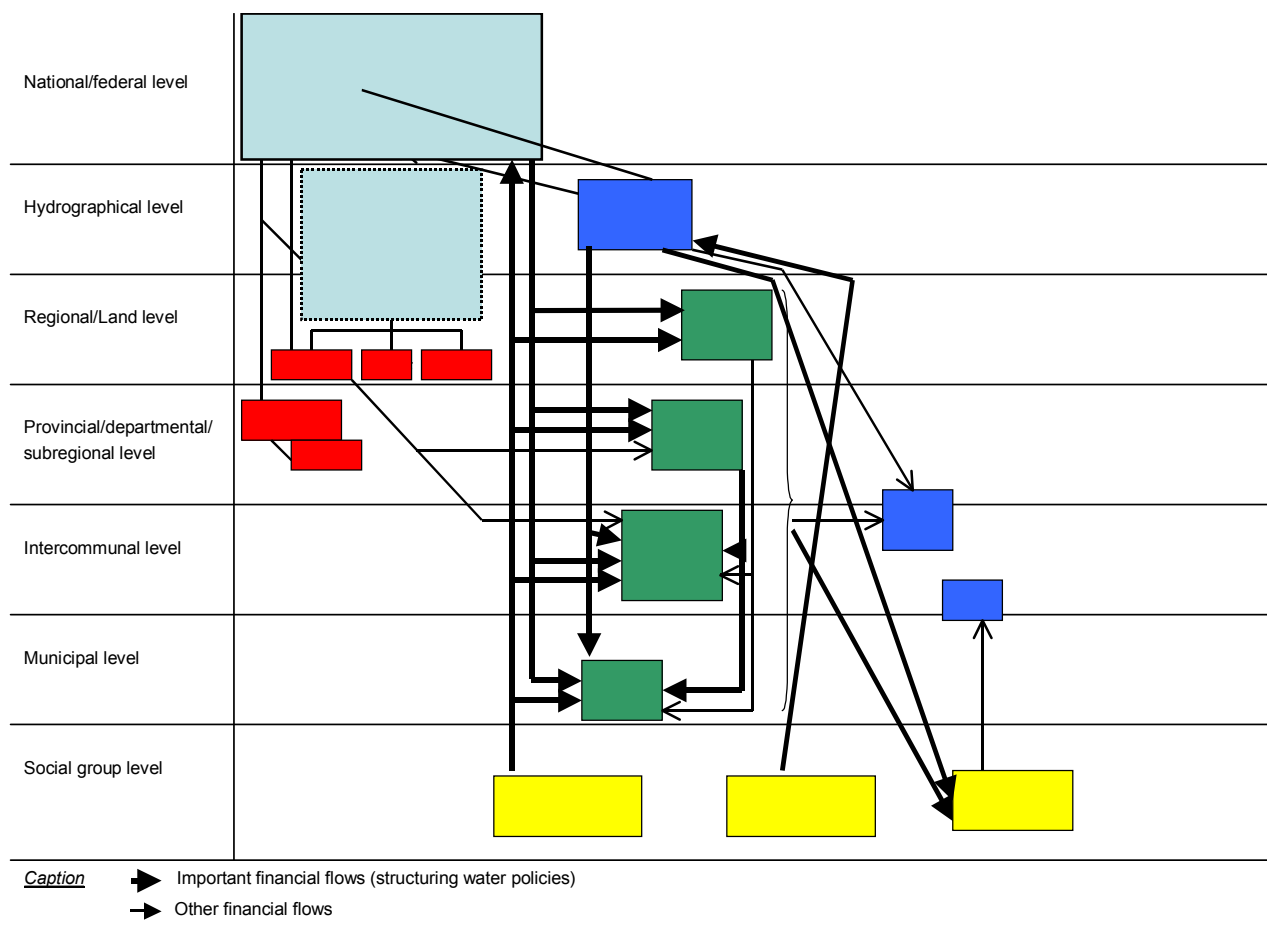


Figure 10. Financial flows of relevance

The WFD did not impose one method to evaluate the level of cost-recovery. The guidance document Waterco (European Commission 2002) presented in details the nature of costs to be taken into account (notably the capital opportunity cost), but said little about the method to be used in each district. This lack of unitary framework led to two different methods used in France to evaluate the production costs of services. One was drafted by Ernst & Young in 2004 to assess the level of cost-recovery of water services for drinking purposes and sanitation (domestic uses). Another method was developed by Cemagref in 2000 to assess the level of cost-recovery for irrigation services. The capital opportunity costs were included for irrigation services, not for urban water supply (Ernst & Young 2004; Ernst & Young 2007).

Although required by the WFD, water storage and water diversion for hydropower are not yet included in cost recovery assessment.

Uncertainties exist concerning the cost of investments; therefore high and low proxies are used to get an idea of the possible scope of values reflecting reality. The result in terms of cost-recovery per district for urban services is shown in Table 2.

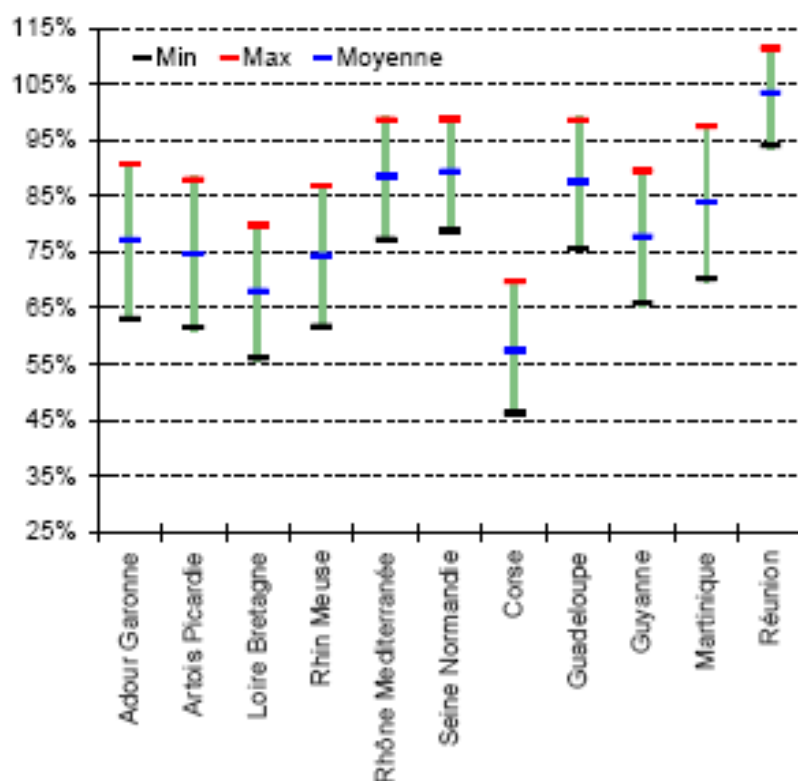


Figure 11. Scope of cost-recovery (excluding opportunity cost of capital and environmental costs) for water services (water supply and sanitation) in French districts (Loubier, Gleyses, forthcoming).

Receipts (en M€/yr)	Expenses (in M€/yr)
Invoices 2 579	Financial costs 163
Subsidies for operation 85	Operation costs 1866
Subsidies for investments 250	Capital erosion between 885 and 1 771
Total 2 914	Total between 2 914 and 3 800

Table 2. Financial balance of water services in the district of Rhône Méditerranée

First evaluation of cost recovery gives insights on how regular expenses are covered. Yet, such results would be very different if they included environmental and resource costs. Over-costs (due to the treatment of non-point pollution for example) are not assessed either at basin scale.

2.2 Institutional structure and changes for implementing the WFD

2.2.1 Transposition

The WFD was first transposed into French law by the order 2004-338, modifying the environmental code (*Code de l'environnement*). Then further transposition was decided under the new water act of 2006 called *Loi sur l'eau et les milieux aquatiques* (Lema).

The implementation of the WFD resulted in splitting the river basin "Rhine and Meuse" into two separate districts and the river basin "Rhône-Méditerranée-Corse" into one river basin "Rhône-Méditerranée" and one district for Corsica.

The water agency is the executive body for decisions taken by the river basin committee. The river basin committee (*comité de bassin*) drafts the RBMPs (replacing SDAGEs (Article L.212-1 CE), which require approval from the river basin coordinator (Article R213-4 CE). Under the responsibility of the river basin coordinator (*préfet coordonnateur de bassin*), programmes of measures (PoM) will be designed by water agencies and *délégations de bassin*, incorporating possible national measures undertaken at State level. PoM must consequently be approved by the river basin committee (Articles L212-2-1, R212-19, R212-20 and R212-21 CE).

2.2.2 Institutional changes

The WFD was the impetus for a push towards recentralisation of State water policies and expertise and more consistency between the strategies of State offices.

Under "*Lema*", the WFD implementation in French regulation was the impetus for the creation of a central office of freshwaters (*Office National de l'Eau et des Milieux Aquatiques*, ONEMA) gathering 800 State employees for monitoring and command and control policies on field and concentrating State expertise on fresh waters. It is financed by a portion of levies collected by water agencies. ONEMA takes the lead for setting procedures to implement the WFD nationwide, standardizing indicators and methods.

At basin level, water agencies and *délégations de bassin* take new actions (inventory of the state of the environment, pressures identification, definition of the program of measures and the river basin management plan) under the WFD and Lema, to comply with the WFD objectives. Together with ONEMA, they implement and operate the national network for monitoring the state of the water bodies.

Since basin coordinators (*délégués de bassin*) cannot initiate any project of their own, nor may water agencies, the main challenge for them is to convince local authorities and private users (*maîtres d'ouvrage*) to initiate the appropriate measures. State incentives are twofold: permits and subsidies. Before the WFD, such instruments were disparate.

At *départemental* and *régional* levels, State services issuing and controlling water permits (*police des eaux*) used to be divided into several units governed by different ministries. They were reorganised as a unique service in 2004. This service got new prerogatives through the 2006 water act. The role of MISE (State inter-ministerial body for water management at *départemental* level) was enhanced

towards more coordination between the service issuing permits and basin water planning services, aiming at implementing WFD priority objectives and measures of the PoM. Since 2007 onwards, MISE have to set up yearly strategic guidelines for action (*feuilles de route*).

The water directorate (DE) of the ministry stated priorities for water policing and planning services:

- Support for structuring the *maîtrise d'ouvrage* for implementing the measures planned in the PoM,
- preserving the quality and distribution of water: action plan for wetlands, sustainable management plans for abstraction areas of drinking water and of diffuse erosion, definition of perimeters of grouped authorizations for agricultural abstractions (article L211-3 of the environmental code)
- Sharing water among uses (including the ecological one), and preserving a minimal flow rate guaranteeing life, circulation and reproduction of fish species downstream from all works.
- Taking actions to restore both ecological and sediment continuities of the rivers.

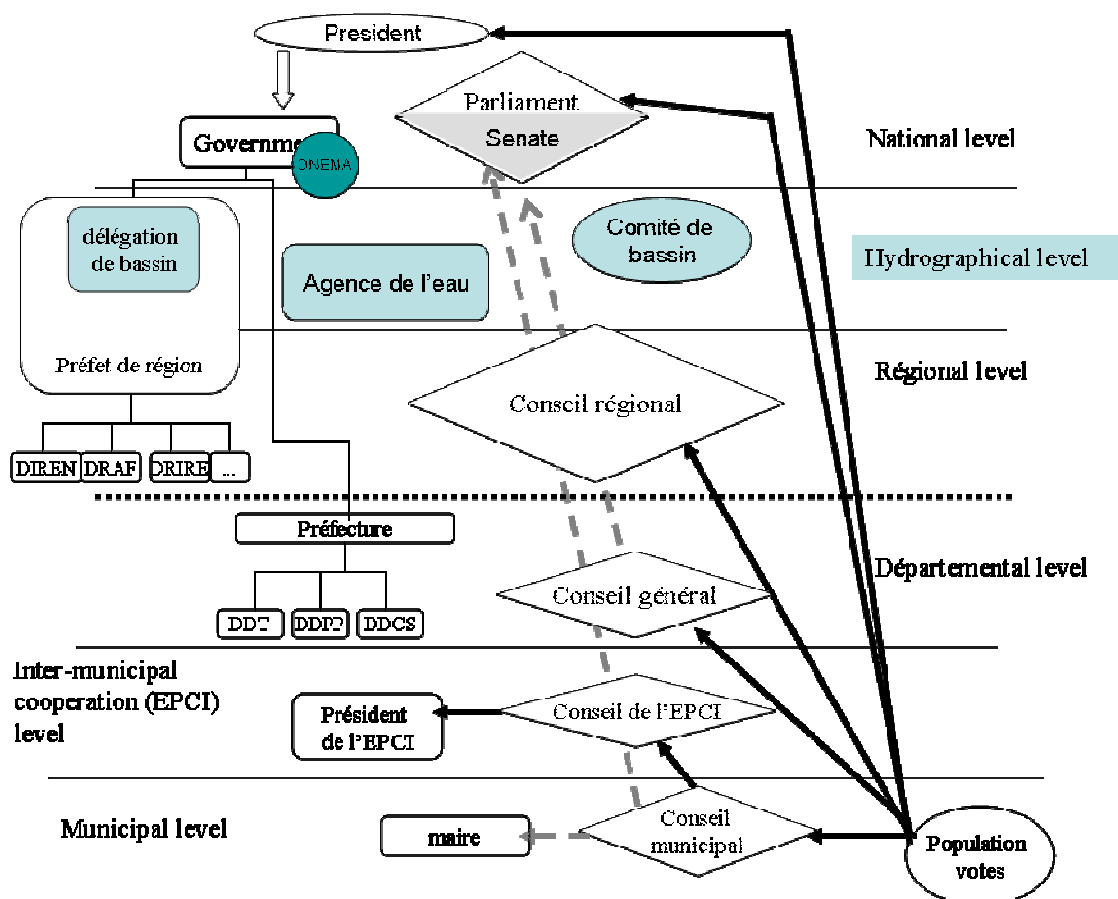


Figure 12. ONEMA was created to harmonize the WFD implementation at national level.

2.3 Setting objectives and selecting measures

2.3.1 Legal framework

2.3.1.1 Command and control policies

Prefects (*préfets*) supervise administrations in charge of water courses in each department and mayors do so at municipal level (Article L215-7 CE). State administration enforces the law at the departmental level (6 to 10 agents per department). Environmental associations perform as a suppletive administration for the environment as they voice out most habitat degradations and get subsidies from the Ministry of the Environment (Lascombes 1994). Mayors issue construction permits, and they control pollution at the local level.

2.3.1.2 Setting objectives

Despite legal provisions, river quality objectives were not designated before 1992 neither for all rivers nor all parameters. The administration in charge of river quality (*police de l'eau* under the authority of the *préfet*) would deliver pollution permits relying on its own expertise without assessing completely the cumulative effects of pollution and water diversions.

The water act of 1992 gave new competencies to water agencies. They became in charge of planning water uses, defining priorities in water allocation and setting general objectives for river restoration in basin master plans called *Schémas Directeurs d'Aménagement et de Gestion des Eaux* (SDAGE). Although their provisions remained vague, they became more and more binding.

The water act of 2006 establishes SDAGEs as the French equivalents for the River Basin Management Plans under the WFD (RBMPs) and imposes that land use plans at municipal (*PLU*) and inter-municipal (*SCOT*) level should comply with them.

In some areas, SDAGEs designate threatened water bodies where additional regulations should be negotiated locally. For this purpose a local commission is enacted (*Commission local de l'eau, CLE*) by the *préfet*. Members are State representatives (at most 25%), water users (at least 25%) and local elected representatives (at least 50%). The CLE has the duty to set up a local plan of water management (*Schéma d'Aménagement et de Gestion des Eaux, SAGE*) setting local objectives and appropriate regulations to meet the objectives.

2.3.2 Organisational framework for implementing the WFD

2.3.2.1 General framework in France

French organisation of water management is already river basin oriented. **Basin districts** in France mostly correspond to the boundaries of existing water agencies. Small adjustments occurred to distinguish between the Meuse and the Rhine basin, to separate coastal rivers on the Channel from the Scheldt catchment. In this geography, the Thau land is located in the Rhône-Méditerranée basin.

The competent authority reporting WFD implementation to the European Commission is the river basin coordinator (*préfet coordonnateur de bassin*⁵) supported by State employees of the *délégation de bassin* and employees of the water agency. For international districts, international commissions take the lead. In the Rhône-Méditerranée basin, the *délégation de bassin* is located in Lyon.

The Ministry of Environment initiated the **designation** of water bodies supported by Cemagref expertise on hydro-ecoregions. Then water agencies made some adjustments. Maps and reports are designed at basin level.

Experts in water agencies, sometimes supported by local working groups, drafted the report on the **characterisation** of water bodies (state and pressures). This draft was discussed in geographical commissions, a sub-set of the *comité de bassin* dealing specifically with a sub-basin of the district. The basin committee has institutionalised Geographical commissions since 1992⁶ for the purpose of drafting and discussing the first SDAGEs and 5-year programs of water agencies.

Then experts in water agencies proposed fundamental orientations for the **program**. They presented it to geographical commissions and got feedback. From 2007 onwards, experts are working on the programme of measures based on central expertise and/or models.

When they exist, SAGE designed at local level and approved by the *préfet de département* (art. L212-3 CE), should comply with SDAGE. They should set up rules in order to meet WFD objectives but the majority of non-State members of the CLE are not accountable for the WFD implementation. Only the State is. It is not clear yet what means the State may use to enforce the WFD. Possibly limitations of cross-funding may become a tangible threat in the coming years.

2.3.2.2 Specificities of the Rhône-Méditerranée & Corse Basin (RM&C)

The Rhône area has been a political locus for **regionalists** opposing the State hegemony for more than a century (Bethemont 1997; Haghe 1998; Pritchard 2004) and for ecologists since the 1980s (Michelot 1990). Local elected representatives have mixed feelings about the State definition of public utility. After the second oil crisis, the State initiated nuclear power facilities in the upper Rhône with correlated projects of hydropower plants. This reactivated the local resentment against State policies. Oppositions gained support. Ecological experts at the University of Lyon developed significant knowledge on fluvial ecology of the Rhône and eventually succeeded in opposing dam-building at Loyettes, a famous spot for recreational activities of urbanites (Bouleau 2007).

Many employees of the water agency in Lyon were educated by experts of the University of Lyon and are much more sensitive to biodiversity and ecological functioning than in other water agencies. Furthermore, **ecologists** invested the Basin committee itself to make their point. In the 80s and 90s, industrials and power producers could not ignore ecological stakes in the Rhone basin the way they might in other basin committees. Today this ecological power is decreasing. However, experts of the **water agency along with employees of DIREN**⁷ (regional State office for the environment) are steering actors for the implementation of the WFD. Some of them participate to European workshops and initiate international comparisons through internships.

⁵ décret du 30 mai 2005 codified in the code de l'environnement article R213-14 and others. (« The préfet coordonnateur de bassin is the competent authority mentioned in articles L. 212-2, L. 212-2-1, L. 212-2-2 et L. 212-2-3. »).

⁶ The LEMA (2006) institutionalizes the constitution of Territorial commissions.

⁷ Or DREAL

The RM&C basin resists standardization due to its **diversity** in landscapes and climates, with elevations from sea level to over 4000 above, and with combined influences, continental and Mediterranean, on temperatures and precipitations. The Mediterranean coast is a hotspot for aquatic biodiversity with high level of endemism which persisted during the last glaciations whereas other areas in Northern Europe lost most species during the same period. Marine habitats being very specific, they also give an opportunity for local experts to claim a certain level of discretion to rule their waters somehow differently.

Both factors, politics and diversity, have fostered an original procedure for setting objectives in the Rhône-Méditerranée district. Water agency experts have largely relied on **local experts** (although mainly public employees) to assess the risk for not achieving the good ecological status of waterbodies and to designate artificial, and heavily modified waterbodies. Similarly, they have largely relied on this bottom-up process to set objectives and measures.

2.3.3 Other factors influencing water management

2.3.3.1 Policies of upstream country

France is mostly located upstream. Nevertheless, the springs of the Rhône and the Garonne are impacted by foreign diversions in Switzerland and in Spain. On the Rhône, Swiss policies may hamper inflows in summer, in addition to all French diversions. As far as the Thau land is concerned, there is no foreign influence.

2.3.3.2 EU Pending sanctions: recentralization and ecological understatement

France is threatened by pending cases for lack of enforcement to EU water laws. The European Court of Justice declared ten cases were infringements to EU water laws and demanded quick compliance. The ECJ may pronounce sanctions in case of insufficient execution of its decisions by the French State (art. 228 of the treaty). Such sanctions have already been applied against France who breached EU fishing laws in the Atlantic. It cost 77 millions Euros to the French government and was deduced from the budget of State administration divisions who failed to enforce the related legislation.

This precedent dramatically changed the governmental attitude towards EU laws. The strategy now revolves around minimizing the risk of prosecution. It entails recentralisation as observed with the creation of ONEMA.

It also results in understating the status of water bodies. French officials worry that a site might be better ranked than it really is and might be downgraded when more information is available. Such a case could be interpreted as an infringement to the WFD which prohibits further degradation. By understating the status of water bodies, France may invest unnecessarily in restoration measures. The opposite strategy is adopted by the UK, where civil servants commonly use the term 'no gold plating' to prevent expensive measures from being undertaken on poor quality water bodies.

2.3.3.3 Ambiguities of the Grenelle

The Grenelle's process

During the presidential campaign of 2007, Nicolas Hulot, a TV program maker and political activist in ecology convinced the three main candidates to sign ecological commitments to be implemented during their mandate. As promised during his campaign, President N. Sarkozy and his ministry of ecology, J.L. Borloo set up a multi-stakeholders platform gathering governmental representatives, professionals and associations at the national level to take decisions in the field of the environment

and sustainable development. This process called the "Grenelle de l'environnement"⁸ started in July 2007. In October 2007 it resulted in a hundreds of proposals in many different fields that are to be translated into laws.

The process of the Grenelle was based on President Sarkozy's idea of "governance by five" which means associating five colleges:

- 1) NGOs
 - 2) State actors
 - 3) Employees (Unions)
 - 4) Economic sectors
 - 5) Local governmental bodies, elected people
- and sometimes additional "officials" for their specific concerns on the subject. See <http://www.legrenelle-environnement.fr/spip.php?rubrique2>

People were appointed by the Cabinet of the Minister of Ecology. Six working groups were created

1. climate change and energy;
2. biodiversity and natural resources
3. safe and healthy environment
4. sustainable production and consumption
5. ecological democracy
6. ecological development for employment and competition.

In each group, representatives of the five colleges were asked to propose names.

In the group biodiversity and natural resources, the president was a senator much involved in water issues. One of the State actors was the executive director of the basin agency Seine Normandie. Minutes of discussion are not available. Reports mentioned main propositions, detailed ones, and some of the disagreements.

Group 2 "biodiversity and natural resources" addressed water issues. The report stated "although water was discussed in our group, it was not considered to be addressed in depth. *Some participants feel that the way water was addressed in the Grenelle was **unsatisfactory**.* The group produced its report from written contributions coming partly from economic and administrative actors and partly from one NGO". Only the contribution of administrative actors is reproduced in appendix.

The Grenelle's conclusions

Conclusions of the Grenelle on water are ambiguous. It is not clear whether the target is to reach the good ecological status for 66% of surface water bodies by 2015 or to reach the objectives (good ecological status, or good potential or even lower objectives) for 66% of surface waters by 2015.

The report of the Grenelle group on "biodiversity and natural resources" proposes four large measures:

- (1) stop biodiversity losses everywhere
- (2) organize action promoting biodiversity
- (3) know better and let people know
- (4) make a difference abroad

Measure (1) includes a subsection dealing with fresh water: "to reach an ambitious objective for attaining **good ecological status by 2015 (2/3 of surface waterbodies)**" (page 5 of the report). However a parenthesis mentions (p.13) that the association of French Regions disagrees. In appendix written by water experts the ministry of ecology and water agencies, page 36 lists measures required to meet the general target of 66% of all water bodies to achieve the good status

⁸ Named in reference to the social agreement of Grenelle signed in May 1968

by 2015. The appendix page 39 considered that only one third of surface water bodies and even less ground water bodies would comply with WFD objectives by 2015 under a business as usual scenario. However, it concluded that 66% of all water bodies **could comply in 2015** and 90% in 2021 provided adequate water policy and budgeting.

Among possible actions, the report mentions that 20000ha of wetlands should be bought (not mentioning by whom). The Association of French Regions and the Federation of environmental NGO (FNE) are said to have asked for more.

Translation into law

The resulted new law (Grenelle 1 2009-967 August 3, 2009) introduced some additional changes. It stipulates that:

- The objective is to reach the good ecological status or the good potential. The State will not ask for extended deadlines for more than a third of water bodies (with no distinction between surface and groundwater);
- 238 specific programs will be set to restore drinking water quality in crucial sites for abstraction by 2012 ;
- National land acquisition for 20.000 ha of wetlands;
- Suppression of key obstacles for fish migration.

Translation by water agencies

In the Rhône-Méditerranée district, this strategy results in the following designation of water bodies (WB), heavily modified water bodies (HMWB) and artificial water bodies (AWB). The initial SDAGE project submitted to agreement to the assemblies set up the following objectives:

		Total WB	HMWB	AWB	comments
Surface water	River	2 684(a)	173 (b)		(a) representing 43 000 km, included 1937 very small rivers that represent 72% of the total length of the district rivers 1317 shall achieve good ecological status in 2015. 59 do not comply with good chemical status and will require an extended deadline (b)31 HMWB for Languedoc-Roussillon region. 1367 (51%) river waterbodies shall achieve good status by 2015.
	Canal Navigation	4(c)		4 (d)	(c) 2 canals shall achieve good status in 2015. (d) only 3 of them have got a detailed characterization at present (2008) (e) 3 canals are too small to be defined as water bodies
	Water transfer(e)				(g) 55 natural lakes with a surface superior to 10 ha are analysed, 36 are concerned by WFD. (h) dam's reservoirs directly located on rivers (i) pound, reservoirs, gravels area ; water come from water table, river derivation or runoff 23 shall achieve the good status by 2015.
	Lake(f) Natural	36(g)			
	Reservoir (h) Artificial (i)	45 22	45	22	
	Transition	39(j)	4 + 1(k)		(j) 3 for the Rhône River – 36 mediterranean lagoons (k) 1 (Etang de Berre) water body has to be more detailed 18 shall achieve the good status by 2015
	Coastal Water	32	6		26 shall achieve the good status by 2015
Total Surface Water		2 849	229(l)	26	(l) included Etang de Berre
Good ecological status in 2015					1435 shall achieve the good ecological status in 2015.
Ground Water		180			All groundwater bodies will achieve good quantitative status by 2015. 144 (80%) shall achieve the good status by 2015.
Total		3 029	229	26	
Good status in 2015					1579 (52%) waterbodies shall achieve the good status by 2015

Table 3. Designation of water bodies and environmental objectives in Rhône Méditerranée (source : SDAGE 2008).

Then an addenda was added to respond to comments raised during hearings, questionnaires and public consultation and to include adjustments according the Grenelle. To justify such changes the addenda mentions : « the situation of some targetted waterbodies was reviewed in depth in order to confirm characterization and to identify where more ambitious objectives could be set. This review mostly concerned very small water courses for which characterisation had been less studied (...) Taking into account environmental commitments of the Grenelle, 366 water bodies for which an extended deadline was previously asked, are now considered to achieve a good ecological status by 2015. Hence only one third of the water bodies (in numbers) will require an extended deadline to achieve the good ecological status. »

Hence 64% of all waterbodies (in number) shall achieve good ecological status in the Rhône Méditerranée district by 2015.

2.3.4 *Public involvement by districts*

In most basins the public was asked to answer a questionnaire sent to all inhabitants and focused on the main orientations given to the SDAGE. In Rhône-Méditerranée, the process of consultation was the following.

Date	Public event	Content
2003	Geographical commissions of the basin committee	information on natural waterbodies, WFD methodology through examples
	Basin Committee	validating the WFD organization for the characterization, designating natural waterbodies, information on protected areas
	On-line information	maps on water quality and pressures, evolution scenarios
	Technical meetings at regional level	sub-basin working groups on pressures, risk for not achieving the good status, confronting local experts judgements and basin data
2004	Basin Committee	validating the table of contents for characterization, discussing data on protected areas
	Sectorial working groups	collecting contributions for the evolution of activities by 2015 and for "important questions"
	Geographical commissions of the basin committee	discussing characterization
	Basin Committee	examining first draft of characterization, and cost-recovery report
	On-line information	register of protected areas
	Consulting local authorities	first draft of characterization
	On-line information	first draft of characterization
	Geographical commissions of the basin committee	appendix to characterization (maps, list of water bodies, local expertise)
	On-line information	appendix to characterization (maps, list of water bodies, local expertise)

2005	Basin Committee	Official approval of the characterization report
	Mailing	characterization report sent by ordinary mail to individuals on simple request
	Reporting	The State reported to the EC the synthesis of all characterization documents
	Public consultation	questionnaire sent to all inhabitants
	Technical meetings at regional level	method and definition of the programme of measures
2006	State notice	on fundamental orientations
	Geographical commissions of the basin committee	draft for fundamental orientations
	State decision	approving basin data and maps
	State decision	monitoring program
2007	Basin Committee	discussing SDAGE first draft
	Geographical commissions of the basin committee	discussing SDAGE first draft
	Basin Committee	discussing SDAGE second draft and Program of Measures
	Nationwide public consultation	basin-oriented questionnaire on fundamental orientations
2008		
2009	Consulting local authorities	SDAGE draft

3 Implementation of the WFD on the Thau basin

“This chapter presents in detail how the WFD was implemented in Thau and what were the specific challenges in this area. This chapter aims at answering the research questions set up in the inception report that were not addressed more broadly in the previous chapter dealing with the national and hydrological level. It is structured in six parts related to the six challenges identified in the inception report: institutional changes, coordination across scales, integration between sectors, public participation, appropriation and the role of expertise.”

3.1 Institutional structure and changes for implementing the WFD at local level

The “Lema⁹” strengthened the content of SAGEs. SAGEs have become the “ideal local tool” to combine WFD objectives and participative management of water resources:

- The role and responsibilities of the CLE have been enhanced:
 - The president of the CLE is responsible for the development and consultation processes of the SAGE and its implementation once the SAGE has been approved by the *préfet*;
 - The composition and functioning of the CLE are relaxed: new provisions (one entitled person with no substitute, but with a possibility of mandating an other member of the same college) replace the former system (one entitled person and a substitute, with no mandate possibility);
 - The CLE must be informed or consulted on many documents or projects which are in the scope of the SAGE. The SAGE is submitted to an environmental assessment (articles L.122-4 and R.122-17 of the Environment code). The CLE produces an environmental report that aims to identify, describe and assess the likely impacts of the implementation of the SAGE on the environment.
- The SAGE is now composed of two documents with maps:
 - A plan for development and sustainable management of water resources and aquatic environment (PAGD), binding upon administrative decisions, which generally corresponds to the report of former SAGE. It defines the objectives of SAGE and evaluates the cost of their implementation;
 - A regulation part opposable to third parties. Administrative decisions in the field of water must be consistent with it. This regulation is a significant strengthening of the legal scope of SAGE with the introduction of criminal sanctions for non-compliance

⁹ and its implementing decree No. 2007-1213 of August 10, 2007 (Article R.212-26 to R. 212-48 of the Code of Environment).

with the rules it lays down. Because of this opposability to third parties, the SAGE project is submitted before approval, to a public inquiry.

The CLE is responsible for the SAGE development. The State *in fine* approves the SAGE adopted by the CLE.

At the Thau level, the perimeter of the SAGE was officially approved by the Water Agency the 19th October 2006. Its design was entrusted to the *Syndicat Mixte du Bassin de Thau* (SMBT), a joint public-body between the two EPCI of the Thau territory (the CABT and the CCNBT – see 1.3.).

3.1.1 Environmental objectives

Environmental objectives are set in the SDAGE Rhône-Méditerranée (approved by the basin Committee in October 16, 2009¹⁰). They revolve around eight fundamental orientations:

- Prevention at the source
- No further degradation
- Integrating the social and the economic while implementing the environmental objectives
- Fostering integration with local management and land-use planning into sustainable territorial projects of development
- Limiting pollutions, notably toxic pollutions and threats on health
- Preserving and developing natural aquatic functionalities
- Better sharing of water resources and anticipating the future
- Managing flood risks with respect to the natural functioning of water courses

At the district level, environmental objectives for 2015 are that 66 % of superficial water bodies (in numbers) should achieve the good ecological status (subdivided as follow: rivers: 61 %; lakes: 82 %; coastal waters: 81 %; lagoons: 47 %) and 82 % of ground water bodies should achieve the good ecological status. To date, 54% of water bodies are already in good ecological status in the district¹¹.

This high level of ambition is mainly supported by State offices (DIREN and water agencies). Local institutions in charge of SAGE often endorse this ambition.

In Thau, 6 surface water bodies were designated (see section 3.6.1) among which 2 are artificial (shipping canals carrying most of pollutants to the lagoon) and one is heavily modified (harbour of Sète). Environmental objectives result of many interactions between State offices and local actors (see section 3.3.). Local actors had long agreed on the priority given to oyster production in the lagoon. In accordance with this priority, the SDAGE states that:

- the Vène (FRDR148), tributary of the lagoon, and the lagoon itself (FRDT10) should achieve the good ecological status by 2015;
- the Pallas (FRDR149), tributary of the lagoon, should achieve the good ecological status by 2021 due to existing chemical priority substances;
- the *canal du midi* (FRDR3109) and the *canal du Rhône à Sète* (FRDR3108b) should achieve the good potential only by 2027 due to priority substances and lack of data;
- the coastal zone between Frontignan and Sète (FRDCO2e), including the harbour, should achieve the good potential by 2015.

¹⁰ http://www.rhone-mediterranee.eaufrance.fr/docs/cab_6oct2009/SDAGE-CB-16102009.pdf

¹¹ Synthèse des observations recueillies lors de la consultation des assemblées réalisée du 16 janvier 2009 au 16 mai 2009 et propositions pour leur prise en compte

Thau is also located upon 3 groundwater bodies

- The alluvial plain of the Hérault river (North-West of the lagoon) has a satisfactory quantitative status, but is affected by pesticides. It should achieve the good status by 2021 given the technical feasibility (FR-DO-125)
- The Jurassic calcareous of West Montpellier (North and North-East of the lagoon) should achieve the good status by 2015 (FR-DO-124)
- The Astien sands (west of the lagoon) should achieve the good status by 2015 (FR-DO-224)

Neighbouring groundwater resources are already affected by over-pumping in summer due to the tourists' demand for drinking water (Orb plain and North Montpellier). Astien sands are threat by salt intrusion. Concerned municipalities shift 2/3 of their abstractions to the Orb basin. The programme of measures includes provisions to better manage water demands. Water suppliers however are reluctant to encourage lower consumption. The Region supports this supply-side policy by promoting the construction of a large aqueduct from the Rhône (Aqua Domitia).

The future SAGE will further articulate objectives and local regulatory measures to achieve such goals.

3.1.2 Programme of measures

Basic measures required by article 11.3 of the WFD are common to all French districts. The Direction of Water of the MEEDDM (Ministry of Ecology, Energy, Sustainable Development and Sea) listed them in the *national regulatory base*¹². Basic measures (European directives prior to the WFD) are to be implemented mainly through permits (issue and control). Under the new water act of 2006 called *Lema*, State authorities may list rivers significant for fish migration and sediment load issues. In listed rivers, water abstraction may be reduced with no compensation by 2014 (Environmental code, L 214-4).

Supplementary measures are mainly incentives and should be implemented through contracts. Should they not be efficient, policing action may take the lead. Experts of DIREN and water agencies devised and listed **supplementary measures** suitable for the district in a tool box and allocate them spatially. The program of measures distinguishes already agreed measures and additional measures.

In addition to the **4 billion euros** already spent yearly for water quality in the district (see section 2.1.3), district authorities consider that the program of measure will induce an **extra cost of 400 million euros** per year between 2010 and 2015 (not included the cost for implementing regulation and already planned measures).

For the Thau sub-basin, ten **supplementary measures** are identified among some are already implemented:

- to set up a participatory water management
- to restore river banks
- to find alternatives to chemical weeding
- to reduce point and non-point pollution
- to study polluting pressures and transfers
- to restore the riparian vegetation
- to restore riverbeds and habitats
- to design a master plan for run-off management

¹² For the Rhône-Méditerranée district, see http://www.consultation.rhone-mediterranee.eaufrance.fr/docs/dce/consult-public-2008/P-de-M/d3_socle-reglementaire.pdf

- to improve collection and treatment of waste water in harbours
- to control private connections to waste water systems

Specific measures target groundwater bodies to locate and control abstractions, improve effectiveness and security of drinking supplies.

The cost of the measures selected for the Thau basin is not available.

The programme of measures, including the tool-box and maps, was then submitted to public consultation¹³.

3.2 Coordination across scales

3.2.1 Coordination across basin scales

The SDAGE is elaborated and adopted by the basin committee, the program of measures being elaborated and adopted by the prefect of basin. In this process, local authorities, economic interests and the “civil society” have been consulted on a territorial basis. Taking local claims into account has been seen by the basin authorities as a way to facilitate the implementation of the SDAGE and the program of measures. The implementation of the *schéma directeur* and the program of measures is largely financed by the *Agence de l’eau* but it mainly depends on the action of the *maîtres d’ouvrages*, which are the different level of local authorities and water management structures (the *Agence de l’eau* is able to finance, but not to realise, infrastructures). More precisely, administrative decisions, SAGE and land use planning documents have to be consistent with the SDAGE. For “basic measures”, the State plays a regalian role by making sure that regulation is enforced, whereas for “supplementary measures”, the State cannot force the local authorities to act. In the latter case, the State administration and the *Agences de l’eau* can only provide incentives. That is why coordination between the basin level, in charge of command and control, large scale planning and financing, and the local levels, in charge of implementing water policies and smaller scale planning, is a major issue for the implementation of the WFD in France.

Local authorities and water management structures do not have much room for manoeuvre on the regulatory part. However they play a key-role in the implementation of the SDAGE and the program of measures. Through the CLE, they participate in the elaboration of the SAGE and they are the main *maîtres d’ouvrages* of water policy. State actors also play an important role in the coordination between the basin level and local levels. Experts of DIREN and water agencies directly participated in the elaboration of the SDAGE and the program of measures. They supply local authorities and water management structures with technical and legal information. At a departmental level, the MISE (State inter-ministerial bodies for water management) are steering actors in the implementation of the WFD. They adapt State priorities in each department in accordance with the SDAGE by setting up yearly strategic guidelines for action. Recently, they have been asked to elaborate territorial operational programs out of the program of measures for the *police des eaux* services.

3.2.2 Coordination across territorial scales

At a local level, the main issue is to bring together municipalities and intermunicipalities to make them work, discuss and deliberate on water issues on a basin scale. In Thau, as mentioned above,

¹³ For the Rhône-Méditerranée district, see <http://www.groupe.rhone-mediterranee.eaufrance.fr/docs/dce/com-geo-09-2007/programme%20de%20mesure.pdf>

the **SMBT** (syndicat mixte du bassin de Thau) was created by the two inter-municipal bodies (EPCI) of the Thau territory, the CABT (municipalities of the South of the Thau lagoon) and the CCNBT (municipalities of the North of the lagoon) for the design of several policy instruments including the SAGE. As far as water policy is concerned, the **Commission Locale de l'Eau (CLE)**, in charge of producing the SAGE, is territorially based on a basin scale. This instrument coordinates basin and territorial scales. It gathers actors from different levels (State, regional, departmental, intermunicipal and municipal). It is often¹⁴ compared to a "Water Parliament", because it is the place where water issues are debated and where water planning is locally decided. Last but not least, the **animateur de bassin** (see 4.1.) has a role of mediation between the different institutional actors involved which is quite important in the perspective of coordination between scales.

Beyond these features, the management of water issues in the Thau lagoon is difficult to understand without paying attention to politics. In particular, politicians addressed many projects of merging intermunicipal structures around the lagoon in the last years. These projects may have an influence on water management. *Montpellier Agglomération*, the neighbouring regional capital, wanted to merge with CABT and CCNBT. The CABT agreed in a first time, and then disagreed. Its president (left-wing), then became an opponent of the president of *Montpellier Agglomération*, who is also the president of the regional council (Georges Frêche, also left-wing). Even though CCNBT's president is a political ally of the president of *Montpellier Agglomération*/president of the regional council, CCNBT voted against the project too. Lately, the prefect pushed CABT, CCNBT, and CAHM (around Agde and Pézenas) to merge and failed.

These developments have not yet come to an end. We can wonder what would happen if the CCNBT integrated *Montpellier Agglomération* or if the CABT joined the CAHM, and especially what would become of the SMBT between competing agglomerations. If one of these scenarii became real, the SAGE would not disappear. It would be managed by the new intermunicipal structures. But a new (or several new) SCOT would have to be elaborated by the intermunicipal boards. In such an uncertain context, it is extremely difficult to anticipate what could be the impact of a reorganization of the Thau inter-municipal perimeters on water and land planning processes and on structures such as the SMBT.

A second question concerns the regional and the departmental levels. Departmental councils are major actors in water policy. They provide a large amount of cross-funding to the communes and inter-municipal structures. More generally, they intercede in favor of projects for access to financial resources. Most of their environmental expenses are dedicated to water issues. Regional councils are diversely involved in water issues¹⁵, even if they always play a role in cross-funding. They are responsible for elaborating the *Schémas régionaux d'aménagement et de développement du territoire* (regional planning documents). These planning documents determine general orientations in different fields (environmental protection, transport infrastructures and services, development of economic activities...). But they are not binding upon third parties. For all these reasons, the relationships between local *maîtres d'ouvrages* and the general and regional councils mainly depend on politics.

As far as the Thau lagoon is concerned, the Languedoc-Roussillon regional council and the Hérault general council are both involved in water management. These institutions are led by two political opponents (even if they both belonged, until recently, to the Socialist Party). The coordination between these two institutions is quite difficult and the conflict between them impacts the management of water issues. Small communes are sometimes asked to take position for or against one political leader (and his allies) or another. Having limited financial resources, they highly depend on the regional and the departmental councils to carry out their *maîtrise d'ouvrage* on water issues.

¹⁴ See footnote 3.

¹⁵ Regional councils of Brittany and Provence are much involved for example.

Projects of merging inter-municipal structures around the Thau lagoon make the situation even tenser, especially because the president of the regional council is also the president of the intermunicipal board of Montpellier. This is a structural feature of the French decentralized system. Cross-funding and multiple office-holding make this kind of situation particularly usual.

3.2.3 *Uncertainties of territorial authorities*

Beyond this local configuration, we have already mentioned that a territorial reform is being led at the national level. Its consequences on local authorities and policies could be very important. Two main aspects (among many others) are to be mentioned here. First, the main direct fiscal resource for local authorities (business tax) is being suppressed and replaced by taxes allocated through the State. Secondly, the rule allowing local authorities to act on every subject concerning their own level ("*clause générale de compétence*"), could also be suppressed (for *Régions* and *Départements*). Water being an optional competence for them, Regional councils and General councils might no longer support municipal and inter-municipal infrastructures, as they do today. Financing the programme of measures in such conditions may be a challenge. In this uncertain context, some *régions* and *départements* expressed their concerns when the SDAGE and the program of measures had to be approved. Some of them even voted negative resolutions against them.

However, we do not know yet what will finally emerge from the reform project. Even if the "*clause générale de compétence*" is actually suppressed for the *Départements* and the *Régions*, regional councils and general councils will certainly still be able to act in the field of water resources management through other competencies, like territorial planning or environmental policies.

3.3 Integration between sectors

3.3.1 *Normative context bearing integration between sectors, in particular on the coastal area*

In France, the first act of the decentralization process in 1982-1983 (see 2.1.1.1) forced governmental administrations in charge of land planning at the local level, previously all-powerful, to deal with the new local authorities and to share competences and decision-making power. The central government however retains considerable powers on the coastal area. The maritime public domain (DPM) is still State property, where the government develops specific policies to limit urban sprawl. Initiated in 1983, the coastal law voted in 1986 was already based on an integrated vision of coastal management and was endowed with an operational planning instrument, the Sea Exploitation Scheme Act (*Schéma de Mise en Valeur de la Mer* - SMVM).

At international level, the concept of sustainable development enabling integration really emerged with the Rio Declaration in 1992. The concept of ICZM (Integrated Coastal Zone Management) was included in its chapter 17. It led to a recommendation of the European Union in May 2002. France adopted this recommendation in 2003, then a National Council for the Coastal Area was created in 2005 and a national call for ICZM pilot project was launched by the DATAR (Délégation à l'Aménagement du Territoire et à l'Action Régionale).

In parallel, the 2nd decentralisation phase in 1999 and 2000 (see 2.1.1.1.) encouraged a co-operation by projects based on the principles of sustainable development using new instruments of more integrated planning (SCOT¹⁶, PLU¹⁷, ...).

3.3.2 Hierarchy between State policy instruments

The Act of April 21, 2004 which transposed the WFD into French law encouraged the alignment of land planning and water policies, giving priority to the last ones. Article L122-1 of the Urban Code related to the SCOT was amended to stipulate that the SCOT must now be compatible with the orientations of the SDAGE and with the protection objectives of the SAGE. Since municipal land-planning documents (PLU) have to be compatible with the ones at the inter-municipal (SCOT), PLU consequently have also to be compatible with the SDAGE and the SAGE. The SDAGE is adopted by the river basin committee and approved by the *Préfet coordonnateur de bassin* (articles L212-1 to L212-2-3 of the Environment Code). Contrary to the SAGE, the SDAGE is not subject to a public enquiry and therefore not opposable to third parties but only to administrative bodies.

3.3.3 Integration at the local level of the Thau territory

A specific geographic and historic context leading to multi-activities

Unlike other fringes of the Languedoc coast, the biogeographical characteristics of the Thau territory (lagoons, hot springs, Sète peninsula) allowed a variety of activities from immemorial time (fishing, vine growing, spa, harbour and river activities and in the last century, industry and shellfish farming). This context saved Thau from a development policy driven by the central government in Languedoc from 1963 (mission Racine) based exclusively on tourism and recreational boating that led to the creation of a dozen of resorts (Port Camargue, Grau du Roi, Grande Motte, Cap d'Agde, ...).

A chronic difficulty of the local actors to achieve on the Thau territory an institutional, geographical and sectorial integration

The rivalry between elected officials and political leadership issues are a dominant feature of the local politics life and more generally in the region. Several attempts to strengthen cooperation between municipalities failed, particularly in the late 90s when the Pays de Thau project dropped after a ten years inter-municipal charter "vineyards and lagoon". Nevertheless, two inter-municipal structures representing 14 municipalities were finally created in the early 2000s, their common boundary cutting the Thau lagoon in two. The CABT (*Communauté d'Agglomération du Bassin de Thau*) is located on the southern side of the lagoon and the CCNBT (*Communauté de Communes du Nord Bassin de Thau*) on the northern one. These two EPCI (Public Corporations for Cooperation between Communes) cover an area which corresponds approximately to the lagoon watershed. The main economic sectors with a wide spatial extension (fishing, shellfish) are characterized by communities with very strong identities but folded up on themselves, maintaining relationships often conflicting, including with other sectors (tourism, boating, industry).

Given this local context *a priori* unfavourable for an effective integration between sectors, we will now see the role played by the technocratic and scientific sphere.

¹⁶ SCOT: Schéma de Cohérence Territorial. A land-use planning document at the intermunicipal level

¹⁷ PLU: Plan Local d'Urbanisme. A land-use planning document at the municipal level

An integration imagined and fostered mostly by central government, engineers and researchers

After an intense period of tourism development on the Languedoc coast between 1960 and 1980, engineers of State services at départemental level felt dispossessed of their competences in land planning for the benefit of new local authorities. In the Hérault department, an informal group of engineers from various government administrations took the opportunity of the debate on the new Coastal Act of 1986 to try to imagine a new role of the State on the coastal area, more regulator and mediator. It results from this an in-depth collective learning process between several sectoral administrations to develop an operational vision of the integrated management of the littoral. Supported by their hierarchy, the Prefect and the government, all eager to illustrate the new law by an exemplary case, they developed from 1989 the first national SMVM for the Thau territory. Convinced from the very beginning of the need for preserving the quality of the lagoon and the diversity of activities, they set up a very open partnership process to work out the SMVM. They skilfully valued the traditional activities, which were the best warranty for environmental quality, to counterbalance the dominant vision at that period of an economy centred on tourism and boating (paradoxically initiated by the central government several years earlier). They took advantage in 1989 of a major sanitary crisis (crisis of salmonella) that endangers fishing and shellfish farming to overrate these activities when redefining the priorities of the lagoon. The SMVM which resulted from this process devoted priority to the traditional activities (and therefore to the protection of the lagoon quality) for 15 years (1995 to 2010).

This crisis of Salmonella also generated a state of emergency that led to a massive commitment and sustainable funding of the central government, Europe, the Water Agency and local authorities: three successive "lagoon contracts" are funded and implemented to improve the water treatment facilities of the area and the understanding of the ecosystem (1990-1995, 1995-2002 and 2002-2009). Given the urgency, the State administration, the Water Agency and the Department controlled in an authoritative way the first contract, which finally satisfied the municipalities and elected officials who have to assume neither the management, nor the political weight of the modernization of a failing sewage system. Conscious of the problem induced by a low political commitment and less and less able to ensure itself the *maîtrise d'ouvrage* because of decentralization, the State administration supported by the Water Agency asked the municipalities to be more involved. Elected officials rejected the idea of a mixed syndicate and obtain from the Prefect to create a simple association, Apogée. This association was chaired by the political leader of the time, the Deputy Mayor of Sète, himself a former fisherman. Several elements once again related on the local political context, but also on the profile of the director, the lack of means and inappropriate actions led to the failure of this structure of management.

Meanwhile, the 2 EPCI mentioned above were created. The State and the water agency then took the opportunity of the will of the new mayor of Sète and president of the CABT to federate the Thau territory to impose in 2005 the creation of a joint board between the two EPCI in exchange of financing the 3rd lagoon contract. To show that it was not a simple copy of the former Apogée association, the State used the innovations of the SRU law of 2000 and the WFD requirements to give the new syndicate (named *Syndicat Mixte du Bassin de Thau – SMBT*) the animation and the management of several instruments: the 3rd quality contract, the SCOT, the SAGE and later, a Natura 2000 procedure for the entire lagoon and the wetlands. Composed around a small team of 6 engineers, the SMBT becomes the technical partner expected so much by the State and the Water Agency. Its director, an ardent defender of ICZM approach, and the engineer in charge of the SCOT process successfully responded to the call for ICZM project launched by the DATAR at that time. The perimeters of the SCOT and the SAGE coincide in a nearly perfect way what constitutes an exception in France. One finds the same elected officials and the same participants in the various steering and technical groups. Encouraged by their technicians, the elected officials also took the decision to carry out an ambitious participatory process enrolling people from various sectors and

thus supporting cross-sectoral envisioning. The simultaneous implementation of SAGE and SCOT processes are currently allowing pooling their diagnosis. Very recently, the decision has been taken by the Prefect to replace the SMVM by a “volet maritime” of the SCOT. This decision, finally approved by the representatives of traditional activities which were the main beneficiaries of the SMVM, will strengthen even more the integration between sectors (here terrestrial and coastal ones). Last but not least, another form of integration has been intentionally sought after to bridge the gap between planning and action, respectively entrusted to SMBT for water and land planning and CABT and CCNBT for implementing the plans. To facilitate this integration, the president of the CABT and the SMBT took the decision to appoint the SMBT director as the executive director of the CABT and to displace the SMBT team to the CABT offices.

One current example of integrated planning

While the SAGE process is still in the diagnosis phase, a pre-project document has been produced in March 2009 for the SCOT and validated by the mayors of the 14 municipalities. Several measures are resulting from a mix approach of water and urban management in order to fulfil the main priority which is to protect the natural resources, vital for the local economy.

The most emblematic measure consists in adjusting population growth and urbanization according to the carrying capacity of the territory, strongly dependant on its environmental sensitivity. This growth will have to be lower than during the last years. Urbanization will be concentrated in the south of the catchment area at a place suitable for a high-performing public transportation service linked to the SNCF railway station which connects Sète to Montpellier. This will help reducing pollution generated by individual vehicles. Such a choice was also done to reduce the transfers in the lagoon and to preserve in the north of the territory both the environmental quality of natural areas and its agricultural vocation.

3.3.4 *A case which looks exemplary but with real difficulties of implementing an integrated approach*

Quasi ideal conditions thus seem to be met to make of Thau a successful example of ICZM. The SCOT, its “volet maritime” and the SAGE processes are still under development and it is too early to know if this approach will lead to a better management of the territory and the river basin. However several difficulties can be outlined. The mayors are facing serious difficulties to translate these complex technical processes into understandable visions and to put them on the political agenda. Local political rivalries, difficulties for certain mayors of positioning with respect to an emergent participative democracy and several abortive attempts to modify the inter-municipal perimeters explain only partly this situation. These local conditions should not mask more general limitations: the absence of direct universal suffrage in election for inter-municipal institutions weakens the engagement of the elected officials and those of citizens in building a shared and legitimate vision for the future at the scale of these inter-municipal territories. The technical instruments of planning and management which are mobilized remain sectoral. Their coordinated articulation leads to governance systems and costs of transaction that are prohibitory for the whole of the actors. The first concerned are the engineers who have to cope with participation fatigue. They must also find a balanced relationship with their elected officials to avoid their disengagement and to help them understanding this new territorial complexity.

Thus, it seems that this attempt of integrated management by coordinating various scales and sectoral policies with their own instruments is currently reaching its limits. It is likely that new paradigms and new instruments, fewer, simpler but intrinsically more integrative will have to be found in the future.

3.4 Public participation

Public participation at national level is addressed in section 2.2.3.3 in relation to the Grenelle of environment.

In the RMC district, the water agency chose to rely on local institutions for the implementation of the WFD, in particular for the public consultation, with the exception of a questionnaire on the main SDAGE orientations sent directly by the agency to all inhabitants. Various public meetings have been organised at the local level by local partners in charge of local procedures such as SAGE or river contracts.

At the scale of the Thau basin, the SMBT is the institution in charge of the participatory processes related to water planning and management. Thanks to the coordination between the SAGE and the SCOT procedures, the participatory processes on water issues have benefited from the tools and knowledge previously developed by the SMBT for the SCOT process.

3.4.1 *Organization of public participation to comply with the SCOT and the SAGE procedures*

Local public participation within the SCOT process is mandatory (article L300-2, Urban code). Therefore, public participation tools have been first experimented within the SCOT process, initiated quite early (in 2005) by the mayors represented in the SMBT. By doing so, mayors sought to create a common vision on the future of the territory. In this process all parties concerned by this spatial planning document should be included. An important decision was to give the lead to the SMBT for the diagnosis of the territory while in many SCOT processes the diagnosis is subcontracted to consulting companies. A charter of participation was signed in April 2007. It set up formal limits for the participation and outlined responsibilities between mayors and citizens, NGOs, etc... The *Charte de la Participation* clearly stated that the mayors hold the decision making power and that they do not commit themselves to the participation process results. It also tried to conciliate the democratic ideal of participation with the managerial expectations of mayors and technicians. Besides, the SMBT has created from the very beginning of the SCOT process a methodological group to support the implementation of the participatory process. In that group, Cemagref provides the SMBT with tools and ideas for the organisation of the process.

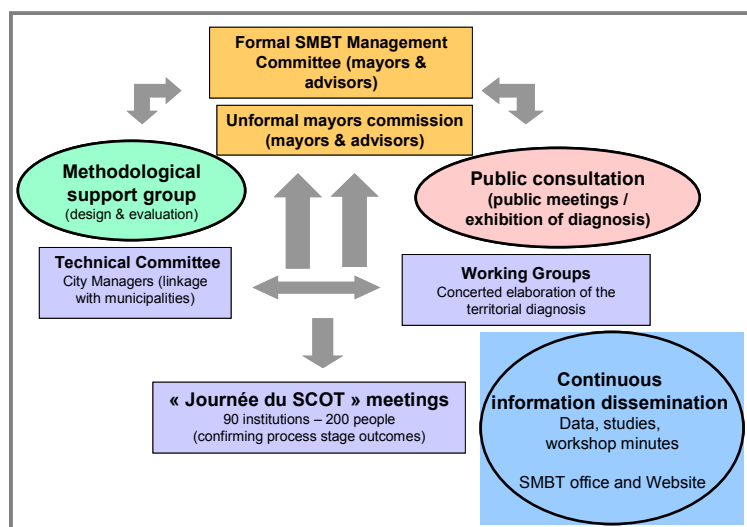


Figure 13. Organisation for the SCOT (Maurel 2008)

The SCOT participatory process has been evaluated at different periods (Van Duijn 2007; Maurel 2008). The participatory approach for the drafting of the SCOT included many participants from different organisations that were often not familiar with this kind of process. Moreover, they were not used to collaborate in projects and think at the scale of the whole Thau territory. This led to a multi-level participation process. Active involvement in working groups was limited to mayors, experts and concerned groups in a first stage. Then it was extended to local NGOs in a second stage in 2006. The general public has never been engaged at this level of participation but was regularly informed through different channels. An in-depth information and consultation phase of the local population has been organized in a third stage in 2007 through numerous public meetings and a two months itinerant open house exhibition. 1300 people have visited this exhibition (1% of the overall population of the basin).

SMBT created an actor network based on the snowball sampling procedure aiming at widening participation with an opened process. In total, 31% of the actors identified by the SMBT in October 2006 had not been invited before March 2007. Conversely, 36% of the actors who participated in the activities before March 2007 were not identified by the SMBT in October 2006 yet. This shows the strong dynamic of the actor network for the process (Van Djuin, op.cit).

The beginning of the SAGE procedure strengthened this involvement scheme with an active involvement of stakeholders and information and consultation of the public.

Level	Information	Consultation	Active involvement
Participants	Public and stakeholders	Public and stakeholders	Stake-holders in the CLE and the Working groups

3.4.2 Public information and consultation

Consultations revolving around water issues with the general public happened at two different levels with some interactions between them

- initiatives organized by the water agency in relation to article 14 of the WFD
- initiatives organized by the SMBT in relation to the SAGE.

Like other water agencies in France, the Rhône-Méditerranée Water Agency implemented article 14 of the WFD by mailing a questionnaire to water users of the district. This questionnaire submitted fundamental orientations of the SDAGE to the public (see 2.2.2.1). Feedbacks from this questionnaire (most people agreed on fundamental orientations) are difficult to interpret since most inhabitants poorly understand water issues. On the Seine district, surveys show that beyond general concern for water issues, water users have no idea of their impact and how to make a difference (Picard and Crédoc 2009).

Critics emerged from water experts. Experts widely criticised the method (mailing) and the content. « Unfortunately such exercise has something to do with conjuring. Indeed the implemented setting over-simplifies complex questions and almost forces people to agree with the SDAGE given the language of the questionnaire »¹⁸. Commentators considered this consultation was an alibi. No consultation is formally planned about the program of measures in contrast with the SDAGE. But in Languedoc Roussillon state actors and water agency plan to do it through the local river basin processes.

More events occurred in Thau. The SMBT presently have many tools available for public information: a Web site (www.smbt.fr), a SCOT travelling exhibition (map, 3D models,...) Rando'scot (a commented hike around the lagoon), the "journées de Thau", the Thau festival, science days, school animations. SMBT's partners (CPIE¹⁹,...) have also widely contributed to informational activities. The SMBT was frequently asked to make presentations during public meetings organized by the municipalities or local associations.



Figure 14. SMBT's tent at the Thau festival, July 09 (<http://www.festivaldethau.com/>)

¹⁸ [Marc Laimé](#), 2008, Eau : une grande consultation nationale qui ne servira à rien..., in Remous, 8 avril 2008

¹⁹ Centre Permanent d'Initiation à l'Environnement. Center for introduction to environment - <http://grainelr.org/papyrus.php?menu=410>

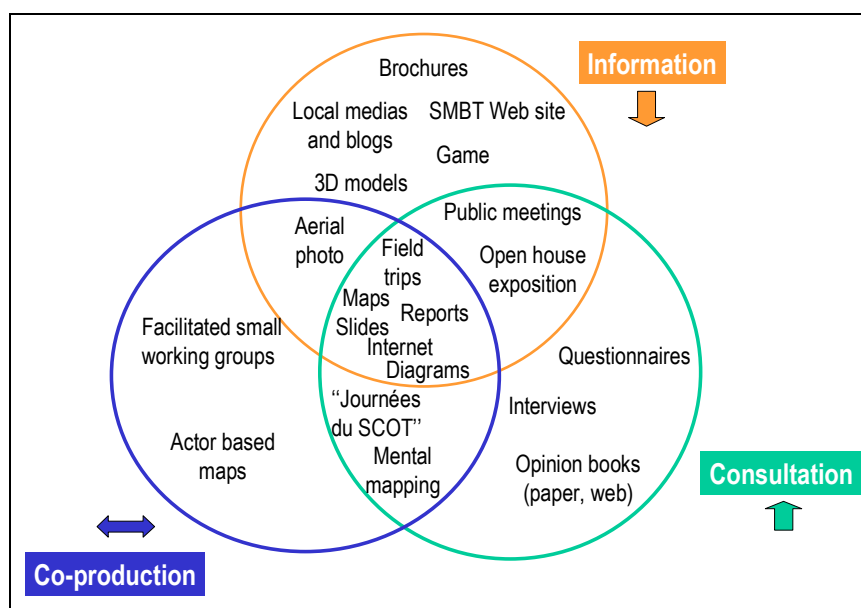


Figure 15. Tools and methods used to support the SCOT participatory process



Figure 16. SMBT tools and Randoscot (credit SMBT)

Despite abundance of information tools available to the public on SAGE issues, SMBT actually organized few consultations. In September 2008, SMBT set up a meeting supported by the Water Agency called « *Grand débat public sur l'eau et le territoire de Thau* » to get feedback from the local public on the SDAGE. It took place at the end of « *les journées de Thau* », a two-day annual event where inhabitants are invited to discover their territory²⁰. Although presented as a debate, it turned out to be mostly informative with little room for consultation. It also showed the gap between local issues and issues at stake in the SDAGE promoted by the water agency.

²⁰ http://www.smbt.fr/index.php?option=com_content&task=view&id=59&Itemid=191



Figure 17: « Grand débat public sur l'eau et le territoire de Thau » sept. 2008

This debate was combined with the consultation questionnaire drawn up by the Water Agency (mentioned above). Complementary inquiries have to be carried out on the specific results of the water agency questionnaire at the Thau basin level. The SAGE process will include other consultations to be carried out in particular during the final stages. In addition, as the leading institution of the Natura 2000 procedure in the Thau lagoon, the SMBT associated NGOs and professionals of the lagoon in the diagnosis phase, in particular to inventory and map the seagrass of the lagoon. In the same way, the SMBT coordinates the SAGE advisory committees which in practice only involve stakeholders.

3.4.3 Active involvement of stakeholders

The SAGE process is today in its first stage involving mayors, State representatives and concerned groups. Stakeholders and water specialists only are invited in the CLE (Local Water Committee) or in the working groups (WG). The CLE gathers 47 persons (see below). It is made up of local government members (56%), representatives of users, professional organizations and concerned associations (32%) and State representatives (12%). The low level of State representative and the strong representation of local stakeholders is noticeable compared to other SAGE. The users college is made of 5 representatives of professional fishermen or shelf farmers, 2 representatives of amateur fishermen, 1 representative of submarine sport association, one hunting association, one trade professional organism, 3 agriculture representatives, 2 environmental association representatives, a consumers association. 10 working groups gathering 200 persons contributed to the diagnosis of the SAGE. WG 1 and 11 for example dealt with water quality and aquatic environment. WG 2 dealt with drinking water. The table below shows the number of participants in each WG meeting. An experimental on line collaborative tool was experimented within WG 1 and 11 to make easier and strengthen stakeholders' participation.

	Elected represent atives	Municipality or inter-municipality agents	State services	Users or users representatives	Researchers	Total
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WG 1 and 11 meeting on line ²¹	0	3	4	0	1	8
WG 1 et 11 meeting	1	8	6	3	4	22
WG 2 meeting	3	8	3	0	1	16
CLE Members	28	0	6	16		50
CLE meeting june 09	20 members	19	4 members +1 associated	11 members +4 associated	4	

Table 4. Participation in the water local committee and in working groups

3.5 “Appropriation” of the WFD at the local level

The WFD and its transposition in State law give new assignments to official institutions. However the scope of the WFD spills over official institutions and targets a large set of practices likely to impact water quality. In this section we focus on such targets. We wonder whether local stakeholders show an interest for and act in favour of the implementation of the WFD. Do local actors promote the WFD principles or do they use them

3.5.1 *WFD: still far from inhabitants and stakeholders’ concerns*

The so-called public debate located in Balaruc showed the gap between inhabitants’ interests and relationships to the lagoon and WFD issues of integrated water management. During CLE meetings and working groups of the SAGE, few persons mention the WFD. Most of them are staff from the water agency and State offices addressing the WFD obligations. On occasion, the *animateur* of the SAGE plays also this role of WFD presentation.

However things are changing. Some local stakeholders seize the WFD constraints as opportunities. For instance a representative of oyster producers stressed the 2015 deadline for achieving the good status during a thematic meeting. By doing so, he translated his own interest for a better quality as an overriding obligation. In the same way, during the last CLE meeting of December 14 (2009), the elected official reporting the conclusions of thematic meetings referred to the WFD when speaking about ecosystems. Asking for more investment in coastal monitoring and knowledge, he further referred to the next European framework directive to come, the Marine Strategy Framework Directive. Hence, locally the WFD justifies new demands for further investigations. The SDAGE objectives have to be taken into account in the SAGE Strategy. The SAGE will be evaluated through the reach of the good water status objectives. At the same times these WFD objectives have to be combined with local objectives such as protecting economic activities. State actors worry about the gap between on the one hand the WFD vision of the territory through water bodies and the SDAGE’s objectives and on the other hand local issues.

²¹ Figures refer to the number of organizations that contribute in each categories. It is not possible to know how many people from the DREAL contributed to the DREAL’s statement.

3.5.2 *Lack of mayors involvement*

The analysis on process legitimacy shows that the involvement of the mayors is not carried out as expected in the resolutions. In the process organised for the elaboration of the diagnostic du SCOT de Thau, those involved have been invited by the government (SMBT) to participate in the definition of the problem agenda. Although the local politicians (the mayors) have also been invited, they have not really participated in the debate organised by the SMBT. Other politic groups, that often form the direct competition of the local mayors, have not been invited to participate so far.

Water as a political issue

The SAGE *animateur* also deplores the lack of mayors' involvement in the SAGE procedure and their lack of knowledge whereas they could be taken responsible for not reaching the good water status. Yet with pressure from nearby communalities to merge, some mayors are discovering the potential power given by the SAGE in the territory management. We can notice the high rate of participation of elected representatives in the CLE meeting of June 09 and in the thematic commission (fall 2009). Water is considered as a major political issue in the Thau territory.

Involvement in integrated water management

If water is a political issue there is still a gap between mobilisation and involvement in the implementation of integrated water management as demanded in the WFD. Inquiries on Thau lagoon (Claeys-Mekdade and Picon 2004) showed the difficulties of a sea professional representative (*Responsable professionnel des activités maritimes de l'étang de Thau*) to participate in the integrated water management proposed in the SMVM process because of his sector-based point of view. This 2004 study focuses on the learning of integrated water management. It shows difficulties linked to a sector-based or a local approach and the gap between IWRM and the local stakeholders dealing with water. Roda (2006) interviewed mayors on the relevance of the SMBT perimeter for territory and water management. She discussed the relevance of the combination between SCOT and SAGE but never linked it to WFD implementation. Projects of merging agglomerations (see 3.2.2.) raise many questions upon SMBT limits.

Interviews with mayors will give an actual insight on this issue.

3.5.3 *Facilitators for the “appropriation”*

Animateurs (see next chapter) and engineers of the SMBT appear to be mediators and facilitators in the implementation of WFD. They participate in the translation of WFD objectives and demands at the local scale. The June 09 CLE meeting gave the opportunity to present the local implementation of the WFD as one of the “great issues” of the SAGE. Others “great issues” were to enrol the SAGE in the territory integrated management, in the management of whole water resources and in the strategic response to the territory issues (demographic evolution, networks, drinking water demand, and future of agriculture). SMBT engineer play the role of river basin facilitators (Richard-Ferroudji 2008). The role of *animateurs* as mediators and facilitators is further articulated in chapter 4. We consider this role as the major innovation in implementing the WFD in Thau.

3.6 Role of expertise

The role of expertise at national level is addressed in section 2.2.3.3 in relation to the Grenelle of environment.

3.6.1 *The geography of expertise at district level*

Expertise used to implement the WFD was mainly State-supported expertise coming from the water agency and State subdivisions (DDEA, DIREN, ...). As mentioned previously (2.2.2.1) Cemagref performed the definition of water bodies according to hydro-ecoregions. The Water agencies had some room to adjust the number of waterbodies. “We reduced their number more than we added some, we worked on the main ones, since stakeholders were not familiar with such units (ne se reconnaissaient pas du tout dans cette analyse)”, a project manager of the water agency said. Then the definition of objectives and measures was the duty of water agency and delegation de bassin.

The water agency was responsible for gathering expertise for implementing the WFD. Geographical commissions have existed since 1992 to gather expertise and discuss were set up to gather expertise and comments from stakeholders and elected officials. Each commission addresses issues concerning several sub-areas.

The *comité de bassin* initially designated 10 geographical commissions subdivided into 29 homogeneous sub-areas, in 1993, for the implementation of the 1992 water act (see Figure 18) ²².

²² After the Lema (2006), 9 territorial commissions were instituted, on the basis of the previous geographical commissions. Thau territory is part of the “Côtiers Ouest” territorial commission.

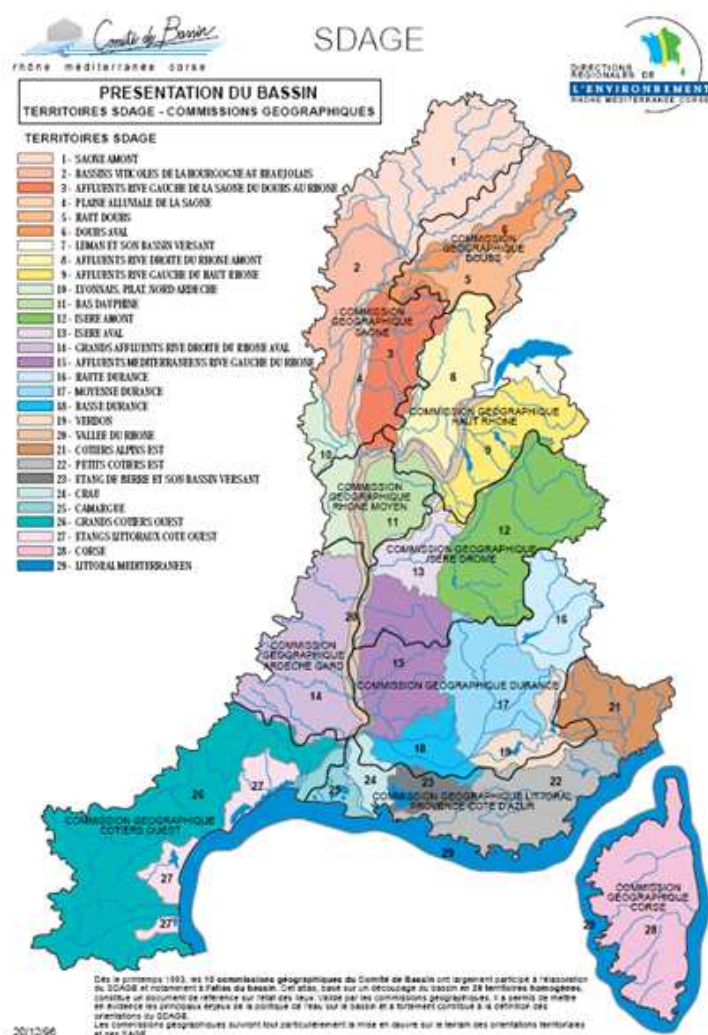


Figure 18. Geographical commissions defined in 1993 for implementing the 1992 water law (AERMC 1996).

At this period, Thau Basin belonged to the sub-area 27 “Etangs Littoraux Côte Ouest” with all Languedoc-Roussillon lagoon basins (Etangs Palavasiens, Etang de Salse Leucate etc...). Debates and collection of expertise were organised within the Commission géographique “Côtiers Ouest” gathering catchments from the Pyrénées to the right bank of the Rhône delta.

For implementing the WFD, the water agency revised the number of sub-areas twice. In 2003, for the diagnosis step (characterisation), the water agency recombined the previous 29 sub-areas into 18 “Territoires SDAGE-DCE” (see Figure 19). Thau basin became part of sub-area 17, “Côtiers ouest, lagunes et littoral” gathering previous sub-areas “Grands Côtiers Ouest” and “Etangs Littoraux Côte Ouest”, which covers the entire area of the “Commission Géographique Côtiers Ouest”.



Figure 19. New geographical units (territories SDAGE-DCE) used for characterisation under the WFD in 2003 (AERM&C 2003)

In 2005, such divisions were segmented again to distinguish coastal units and sub-basins. “Côtiers ouest, lagunes et littoral” was split up in 21 sub-basins and 4 coastal units. The sub-basin of Thau (CO_17_19) was composed by 3 water bodies: Vène River, Pallas River and Etang de Thau representing the main bodies of the area. In 2007 the water agency further identified 7 water bodies corresponding to very small rivers.

Such units of second and third basin level mismatch existing political or administrative divisions, even those of the SAGE. The SAGE of Thau includes 6 entire units (Thau basin (CO_17_19), Grand Bagnas (CO_17_05), Littoral cordon lagunaire unit and (CO_17_93) Cap d'Agde Unit (CO_17_92)) and partly overlaps with two others (Lez-Mosson-Etangs Palavasiens (CO_17_09) and Littoral Sableux Unit (CO_17_91))

When we look at the maps of SAGE describing water bodies and their objectives, these subareas do not appear.

In these units, three water bodies were designated as artificial or heavily modified. Two are artificial: “Canal du midi” and a subsection of “Canal Rhône à Sète” are two canals for shipping. One of stretch coastal water body, Sète - Frontignan (FRDC02e) due to the presence of port area, is designated as heavily modified.

3.6.2 A process driven by qualitative experts' opinions in Rhône Méditerranée

As expressed previously (2.2.2.2), politics and ecology in the Rhône basin resulted in several differences in water management.

A first specificity is the significance of water management at the sub-basin level (SAGE or Contrats de rivière) in the district. Institutions dedicated to watershed management cover more than 50% of the district area. The water agency encouraged such institutions as a mean to implement the 1992 water law. The State and Rhône Méditerranée Corse water agency initially highly subsidized the technical staff (*chargé de mission* or *animateur*) of such institutions (80%). The job of the *animateur de bassin* (basin organiser) emerged then. Support from the agency and the State later decreased.

Yet, the value of the experience had convinced some local authorities to secure the position of their *animateurs*.

Secondly, although most water agencies decided to rely on modelling to test possible measures and define quality objectives, the staff of the Rhône-Méditerranée agency was very reluctant to do so, arguing that uncertainties concerning discharges and pollution would make any model unreliable. The direction of programs and planning initiated a decentralised process. They organised workshops with State representatives, local experts, staff from local authorities, notably *animateurs*. Each workshop dealt with 10-12 waterbodies. Members of the water agency had their own discretion to decide which experts were invited and what was the agenda, no common doctrine was set yet. A project manager at the water agency said: “We relied on experts’ opinions. Experts were for example a researcher from IFREMER²³ or myself, since I know the place very well, DDE, DDA, Chamber of Commerce and Industry, the president of the Chamber of Agriculture, fishermen, a representative of the institution managing the Roussillon aquifer, ...At each step we had to raise consciousness (*sensibilisation*) and to educate (*formation*)”. Another project manager had a different experience: “in our workshops Chambers were not present. We had representatives of watershed institutions and the regional president of environmental NGOs, because of his own personality and his past as former staff in the water agency”. From the water agency point of view, this process was considered as an easy one in Thau: “Thau is nothing common. It is the star pupil”. It is much easier to have everyone joining the same table than for a much eutroficated lagoon”.

This process resulted in maps assessing the risk of not achieving the good status based on experts’ opinions.

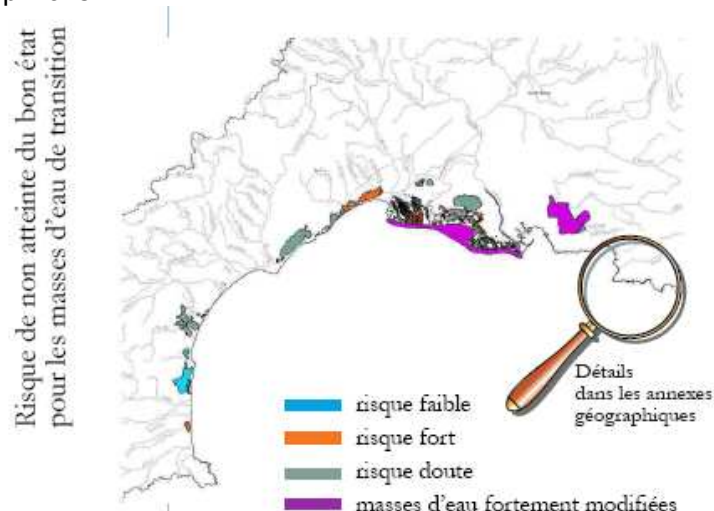


Figure 20. Mapping the risk of not achieving the good status for transitional water bodies based on experts’ opinions (AERM&C 2006)

Lay expertise has little opportunity to reach these arenas. However, *animateurs* act as brokers between three worlds: the technical world of water management, the political world of local development and the domestic world of the population with every-day use of water. In Thau, the SMBT only recently hired Gilles Brocard as a chargé de mission SAGE after water bodies had already been defined and characterised.

²³ Institut Français de Recherche sur la MER (French research institute on seas)

3.6.3 *From decentralisation to recentralisation of expertise*

The departemental experts of ONEMA had recorded their knowledge on pressures on Corine Land cover maps. This resulted in a first draft of objectives with many exemptions. Then, the water agency organised further workshops to discuss objectives and propose measures, focusing on water bodies with a risk of not achieving the good status (*Risque de Non Atteinte du Bon Etat*). In 2005 objectives were set for main water bodies. In 2006-2007 the same process occurred for very small water bodies (*petit chevelu*). A technician of the water agency remembered: “the watchword was not to use the 2027 extended deadline. At the end of the meetings we had to steer the process so that this postponed deadline was never mentioned”. As the process went on, less and less experts were able to attend the workshops. Technicians of the water agency working on ecological issues and measures took the last decision alone within few months. However, this process was disturbed by the Grenelle. The water agency had to rework all the designation in order to meet the political ambition of having 66% of all water bodies reaching the good status by 2015. As a technician said, “this was a desk-work (*travail en chambre*). We would select one water body arguing that some efforts could be done there. Most of the time we changed the ranking of very small water bodies since many of them do not support any activity. We played on those to reach 66%. Many had been poorly ranked because their sediments were polluted with pesticides. When the inter-calibration process resulted in ignoring sediment, we were able to rank them better.”

While local experts (technicians of the water agency, researchers and *animateurs* of watershed institutions) were encouraged to identify tailored measures adapted to local conditions, headquarters of the water agency and ONEMA were in favour of a national directory of measures. Eventually, the Comité de Bassin adopted a district directory of measures. Technicians of the water agency were asked to translate tailored measures into standardised ones. Some of them regret this recentralisation: “we lost a lot in the process”. Some others feel more at ease with classical measures: “We have discussed such impacts and measures for so long, local stakeholders know them, they have internalised them (*integer*)”, they spontaneously cite them during meetings, we manage to fill the grid”.

ONEMA and the ministry of environment jointly develop the water status evaluation system: SEEE. The SEEE (« *système d'évaluation de l'état des eaux* ») has two main objectives:

- supporting scientific institutes to elaborate a grid bringing together data and evaluation methodologies and to assist the State in the implementation of the WFD;
- allowing basin actors (Agences de l'eau, DIREN, local authorities, etc.) to evaluate the water bodies' statuses in accordance with the WFD.

SEEE is both a tool of simulation for scientists and a tool of evaluation for basin actors. The system will integrate the data coming from the WFD monitoring programs and from the local networks (if their data are banked at the national level). ONEMA is in charge of this project, which will be ready in 2010.

3.6.4 *Specific expertise in coastal areas*

In Languedoc-Roussillon, a specific center of expertise promotes water quality in lagoons. The Cepralmar (*Centre d'étude et de promotion des activités lagunaires et maritimes*, <http://www.cepralmar.com/statuts.php>) is a non-profit association of experts promoting marine activities. It was founded by marine professionals and politicians and largely supported by the Regional council. Since 2000, this center has coordinated a coastal research program (Syscolag

<http://www.ifremer.fr/syscolag/>) and operated a monitoring network on lagoons (*Réseau de suivi lagunaire*, <http://rsl.cepralmar.com/>) supported by the Regional Council, IFREMER and the water agency. Watershed institutions in charge of lagoons contract with Cepralmar for water quality monitoring. Each summer, water is sampled from June to August in the lagoons of the Region. An annual synthesis is published and presented to watershed institutions. Samples and analyses are free, provided management institutions agree to publicised results in direction of marine professionals (shell producers, fishermen). Good monitoring records perform like a label. Bad records are stigmatised.

Likewise, State administrations dealing with water in coastal areas have specific organisations.

3.6.5 Expertise and environmental activism

The water agency Rhône Méditerranée administration is organized with headquarters in Lyon and four regional offices (délégations). The regional office of Montpellier in Languedoc-Roussillon has a specific environmentalist hearsay. As a technician of the water agency in Montpellier put it: *"I worked in Besançon before. When I arrived in Montpellier, seven years ago, I was struck! They (colleagues there) had a real environmental approach which was not driven by infrastructures. It was a different set of mind. Montpellier is quite innovative."* A technician from another regional office agreed: *"the regional office of Montpellier is a forerunner in terms of promoting coordinated approaches between water and urban development. It is not always well-considered by other offices of the water agency. This is due to individuals, it requires time and energy."* Only the regional office of the water agency in Montpellier dedicates staff to coordinate with SCOT procedures.

4 Innovative instruments and institutions (I3) in Thau: the role of *animateur* of sub-basin

“This chapter is dedicated to the presentation of one key innovation for the implementation of the WFD in Thau, that is to say the role of the “animateur” of the sub-basin. This innovation addresses the challenge of integration between sectors at local scale. Moreover it supports coordination across scales and local appropriation. We present this new type of jobs developing in France, then we focus on the situation in Thau. Last we discuss the transplantability of such an innovation.”

4.1 An innovative job: *animateur* of sub-basin

This section draws upon Richard-Ferroudji's work (Richard-Ferroudji 2008) who made surveys among *animateurs* identified in France at that time through various networks and methods (interviews, observations, detailed questionnaire (45 answers)). Citations are drawn upon this material.

4.1.1 Professionals addressing the lack of sub-basin “appropriation”

Water has long been a political stake in France. The five large basins are entrenched in the territorial narrative of the Nation, and taught as such to all French pupils in high school. (Vanier 2008). Smaller catchments have also long been subject to social and political conflicts on water (Ghiotti 2007). However, dominant territorial discourses at the local scale are seldom based on water-related boundaries. One of the key challenges of the WFD is to reframe public policies at the basin or sub-basin level when political action is not basin-oriented. Indeed, hydrographical limits do not always match administrative boundaries or political territories. Most inhabitants ignore in which sub-basin they live. Not all politicians think in terms of water-related boundaries.

In many places, water issues are secondary concerns, and left to technicians. Technicians are familiar with this basin scale but they lack legitimacy to address the critical issues of integration between sectors. The challenge is therefore **to breathe social and political life into the basin scales**. The French water act of 1964 set up water agencies supervised by basin committees at district level. This was a valuable step in the process of making this scale visible and possibly influenced by stakeholders. However, integration between sectors is also a challenge at local scale. Many decisions at municipal and departmental level affect land-use planning and water uses. Someone has to take the reins to stimulate participation and integration at sub-basin level.

Municipalities first hired technicians with short term contracts to coordinate river contracts²⁴ or SAGE, to organize first inter-sector meetings, to write memos and reports. Then, little by little such positions got stabilized. It took time before municipalities agreed to set up joint boards dedicated to integration endeavors which were legitimate for hiring permanent staff as civil servant of local authorities. In January 2006, the website Gest'eau dedicated to local water management registered 200 contact informations for animateurs of SAGE or river contracts, and 300 in January 2010.

By then, a new job had emerged to carry out the SAGE processes or water local projects while fostering water stakeholders' coordination at sub-basin level. *Animateurs* initiate and monitor assessment studies or technical development plans related to water management. Employed by water institutions (EPCI, EPTB, see 2.1.1.2), they assist elected officials in administrative and financial tasks for projects dealing with water at basin or sub-basin level. Moreover they take charge of public participation processes, stakeholders' involvement, and communication endeavors. They organise meetings. Such position were initially supported by the ministry in charge of environment (since 1997 as part of a positive action towards youth employment) and became later co-funded by water agencies, until institutions supporting water issues got settled and willing to support the full cost of it. This job was given different titles in different contexts: *animateur* of SAGE, or *animateur* of river contract, or director of water institutions or "*chargé de mission-coordination-animation*" for the global management of the aquatic environment²⁵. We choose the general title of *animateur* to qualify this new job which in French which come from the latin *animatio* and means to give birth to something. It may be noticed that "Animation" is promoted as a new governance tool in other public policies. Then the *animateur* is the person facilitating a collective discussion. Some elected officials act as *animateurs* to get legitimacy (Ségas 2007). *Animateurs de bassin* make the link between water users and by doing so they build a **water network** in which they promote common principles.

« In our job, we are bound to the water management at the crossroad of everybody. »

Such jobs belong to what Jeannot calls « blurred jobs » (Jeannot 2005). They cannot be reduced to a fonctionalist analysis of tasks to be completed. People in this position have to compose their job in relation to the water basin.

« The position and functions we have are very blurred for most of our partners and local actors. Some wonder what we are really doing to be so busy. Others don't understand how we manage to be everywhere and they wonder whether the multiplicity of places and functions may not disperse the job. »

4.1.2 Competencies of the animateurs: between the two fires of technique and politics

What competencies does it require to breathe life into a water community? While administrative and social tasks prevail in their everyday work, *animateurs* are mostly selected for their technical knowledge. *Animateurs* combine scientific skills with social and political competencies to fulfil their

²⁴ Under this scheme, both government and private-sector players commit themselves by means of a contract to implement a consensus action programme to restore the river and its drainage basin's water resources.

²⁵ DIREN PACA, « kit PPeau : un outil d'appui à la gestion des procédures de contrats ou de SAGE » (2005)

missions. The ideal type of *animateur* is a young²⁶ graduate in technical masters, male or female, highly motivated by human relations, concerned by wise water management and caring for sub-basin participants.

Job offers for „*animateurs*“ of SAGE or sub-basin institutions typically ask for graduate candidates with **masters in environmental management**, water management, hydrogeology, or aquatic ecology, depending on the key issues of the sub-basin. Many *animateurs* present themselves as technicians or experts in water management. However this “presentation of self (Goffman 1967) must be understood as a way to differentiate their position from that of politicians under the supervision of whom they work. Actually, such a bureaucratic division of work between technicians and politicians often gives way to more overlapping. In some situations, *animateurs* may frame discussions, propose agenda and influence decisions while politicians step back.

An animateur says that his/her position is « *a tricky role, half way between technics and politics* »

Common trust and communication between politicians and *animateurs* is therefore crucial. Positions of *animateurs* require good skills in human relationships. Interestingly though, sociological or political science knowledge is poorly valued by employers. Symmetrically, practical knowledge in technical issues is not considered valid enough for the job. Employers would rather choose an academic background in water sciences with practical experiences in human relations. *Animateurs* selected according such criteria generally agree on their relevance for the job.

Animateurs are actually bound to spill over their technician skills into political issues. Their job include one of **translation from sectors to territory and vice versa**. For instance, an *animateur* has to explain the physical phenomenon of erosion and sediment load in order to foster a political decision on river banks maintenance. For this purpose he/she may design slides or physical model and endorse a pedagogic role.

«*During all these meetings and travels, I always took the opportunity to explain somehow what water course management was, what we should do and what we should not, why we did not intervene as before, why we didn't dredge, why dikes were bad, why riparian forests should not be suppressed.* »

The job also consists of translating points of view to make them intelligible to one another. The translation is done between experts and lay people, between scientific experts from various fields between stakeholders to make understand each other stakes ...

« *I bring technical skills on one issue (including the ability to make the link between specialists of different disciplines) if the situation is edgy on technical issues* » ,

Animateurs cannot ignore the politics behind technical stakes. Beyond translation, *animateurs* must find proper words to make explicit otherwise tacit stakes and to reframe them into political choices. By doing so, they deeply influence local management. This, in turn, raises ethical questions in their mind.

²⁶ Mean age of interviewees by questionnaire : 31 years. Gender equity among the 300 *animateurs* registered in Gest'eau.

4.1.3 *Taking charge of the sub-basin: a vocation*

« Clearly, they all consider that my role is not technical : I build on everyone's competences ; my role is one of a mediator, of a steward, but definitively not an expert ! »

Scholars generally conceive public participation in procedural terms. In that sense *Animateurs* perform as mediators, collecting people's voices and reformulating them in adequate arenas.

« As local actors get related, they learn to know each other. Existing tensions or misunderstandings fade away or resolve.»

« Since our mission is global on the basin, we are less directly engaged in municipal issues, this helps sometime to unblock situations that were stuck for reasons far from the aquatic environment »

However to overcome mistrust and defiance between actors from different sectors requires more than transparency and protocols. *Animateurs* have to develop local social networks and knowledge around water issues. More than often *animateurs* travel to meet water users or inhabitants in their home or on fields. For instance, an *animateur* would bring politicians on field to convince them that some works were of extreme relevance. Coming back from a meeting with State officials, another *animateur* would drive them to see erosion evidences in order to discuss whether a prosecution against gravel mining is needed.

« A misunderstanding between two partners got resolved during a confidential meeting. Hence, the project was able to proceed. »

Animateurs deal with personalities and fragile trade-offs. They need to express **feelings of sympathy** towards members of the water community they intend to build and towards the environment itself.

« To hire a consultant is suitable when you are looking for somebody free of any tie, able to objectify. Then you have to reconnect everything, to make the link with the local, to compromise. Local democracy requires this link. Otherwise people don't know you. They will not speak unless they are in confidential commissions in which everyone knows each other. There, they will be able to speak up entirely. »

However such concerns never lead to sharing confidences. *Animateurs* do not consider themselves as confidant of anyone. Their role is rather to make things public, to translate peculiarities into generalities. Listening with care to singularities, they seek to report them in universal terms.

« We are hydropsychosociologists..... »

Understanding people's attachments, they try to take them into account in public discussions with some distance and objectivity. *Animateurs* **communicate** to build a common ground. The *animateur* promotes a basin public interest vis-à-vis more local claims.

« The elected official sometimes must satisfy workable and visible things in the short term (in relation to the electoral mandate) and this does not always fit the public interest.»

The *animateur* may also voice environmental protection stakes.

« Politicians may take decisions conflicting with environmental interests in regards to other criteria, for instance economic or political. ».

In such cases, *animateurs* may feel that they go « beyond their role » due to their engagement and their influence on decisions. Such an engagement may be criticised as a technocratic bias, but most of the time elected officials and stakeholders trust *animateurs* they are working with. Often *Animateur* is not merely considered a job, but a “**vocation**”. Time, availability, open-mindedness and perseverance are key elements for success. Some *animateurs* are likely to visit “their” catchment or to give talks during week-ends, blurring the limits between private and public life. For some interviewees being *animateur* of sub-basin is a cause giving a meaning to one’s life. One said: “describing our job, you missed the main thing: **faith** is what we need in order to cope with many disillusion we experience”. This cause helps coping with difficult conditions (limited staff, limited budget).

Animateurs prove to be able to perform different skills in one person: expertise, translation, mediation, negotiation, project management, communication between private experiences and common resources. Unlike State civil servants, they exert no command and control. Their legitimacy is rooted in a combination of expertise and locality.

4.2 In the Thau basin, four *animateurs* collaborate

On the Thau lagoon, the Prefect pushed for combining SCOT and SAGE procedures. However, the SCOT started first in 2005. A SCOT *animateur*, was hired then. To steer the SAGE procedure, the SMBT later published a job offer for an *animateur* of SAGE in 2007. The director of SMBT was looking for a facilitator rather than a water specialist. The present *animateur* of the SAGE graduated in geography got the job in 2007. Two other project managers were also hired, one to take charge of the lagoon contract and the other one for a Natura 2000 project covering the whole Thau lagoon and surrounding wetlands.

SMBT aims at an integrated management of coastal areas as claimed by his headmaster. It succeeded in providing a peculiar situation where the *animateurs* of SCOT, SAGE, Natura 2000 and lagoon contract are hired by the same structure located in the same building, in very close offices. They perform similar activities collecting information about the same area, analyzing them, understanding and organizing them, making syntheses for different publics. They are bound to exchange elements and share views on the characterization of the site. They share the organization of events such as the public debate on WFD (see 3.4.2). They play symmetric of intermediate actors between the water sector and the territory of Thau. They bridge the gap between territorial representatives and water or land-use specialists. Thanks to their mediation, generalists from the territory may speak up in water-related arenas while water specialists can be heard when speaking about land-use planning. They translate statements coming from actors with different interests and representations into a common discourse. The common vision contains multiple and possible conflicting goals. However the SAGE and the SCOT have to make sense for all. One participant of the SAGE said:

“The animateur is a good speaker. He articulates well, he makes good syntheses, he leads the process. This requires hard work behind: to listen, to translate, to integrate. It makes people willing to participate.”

People appreciate his efforts to include everybody. They are thankful for his care and support to foster participation. It requires constant information and time so that everyone can make a relevant contribution. The sub-basin characterization, the first phase of the SAGE, benefits from this process. It is claimed to be a living document, likely to evolve. He makes the SAGE alive, for example saying : "The SAGE says".

Given rivalries between politicians of SMBT, CABT and CCNBT (see 3.2.2), consensus shall not be taken for granted. The legitimacy of *animateurs* comes from the networks they built around water professionals, scientists, private consultancies, state offices, local authorities and their services, elected officials, fishermen and oyster producers, NGOs, schools, journalists and large public.

The *animateur* does not rely on his own expertise but rather seeks to benefit from others' competencies, to have other people commit in the process, and to accompany them in order to include them. Very keen on promoting environmental outreach, he seeks partnerships with NGOs to develop actions towards schools and large public. A specific working group of the SAGE is dedicated to information, communication and outreach in environmental issues. Another one hosts interactions between the SAGE and research and innovation. Proximity with research institutes and universities in the city of Montpellier creates opportunities often seized by *animateurs* to improve expertise on the river basin.

4.3 Relation between *animateurs* and challenges of the WFD implementation

The most value of *animateurs* consists of their integration capacity, their support to public participation and their endeavor for more local appropriation. *Animateurs* make integration between sectors at the local level of the SAGE perimeter. *Animateurs* make such a difference in WFD implementation that Water Agencies speak of **orphan water bodies** for those without concerted approach or *animateur*. However they also contribute to other challenges of the WFD implementation in terms of coordination across scales and expertise.

Animateurs in Thau are concerned with **coordination across scales** since the Thau catchment flows from its sources into the lagoon and the sea with connections with other sub-basin. There are some interdependencies with groundwaters used by other inter-municipal bodies than the ones gathered in SMBT and among them Montpellier agglomération. *Animateurs* from different sub-basins make the link with each other in an interSAGE process. They meet each others and exchange informations to harmonise their water plans. Large projects of significance for the whole district like the Rhone aqueduct (Aqua Domitia) are also discussed locally by *animateurs*. During thematic commissions and unformal meeting or phone calls, *animateurs* frequently interact with technicians from the Conseil Général, from the local delegation of the Agence de l'eau and from the DREAL. Professional associations of *animateurs* perform as epistemic communities at district or national scale to address what is within and beyond the scope of *animateurs*' action.

By collecting data, reporting and networking, *animateurs* are key experts for local **definition of environmental objectives and measures**. The Water Agency Rhône Méditerranée relied heavily on their expertise to design objectives and the programme of measures. They consulted *animateurs* for qualifying the water bodies. In Languedoc, almost every lagoon was concerned with a lagoon contract or a SAGE in 2003, that is to say that even if a full-time *animateur* might not be in place, at

least a project manager was in charge of integrated water management. He could be mobilised for the WFD implementation.

One challenge of the WFD is that local stakes are very different from one place to another. The reason why water management and other policies are not integrated to each other is always a different story. No systematic approach can be written in guidance document. *Animateurs* work precisely on what locally resists integration and river basin management. Such jobs cannot be reduced to standards. They depend on local stakes and require adjustments according to the evolutions of issues. Their value is precisely their flexibility and adaptation to local situation.

4.4 Discussing transplantability

4.4.1 *Is Thau so specific?*

Thau is often presented as a singular success story where economic development and ecological objectives amazingly followed the same path in peace, thanks to the economic significance of oyster production and the overwhelming power of State services. Were these singularities confirmed, it would definitely hamper the potential transplantability of innovations observed here. In reality however, ecology and economy did not spontaneously and harmoniously coevolve.

Oyster production never represented the main activity of the area. Among the 130,000 inhabitants of the sub-basin, only 2,000 directly work for this sector and 2,000 indirectly. Professional fishermen only represent 300 additional jobs. Tourism, harbour industries, and dwelling construction are much more significant for the local development and employment. Potential impacts of such activities on the water quality are huge. It is likely that the decreasing activity of the harbour combined with the wine crisis weakened agricultural and industrial sectors. However sectors in crisis may not be more willing to make environmental trade-offs than prosperous one. Moreover projects for tourist development like marinas or resorts still abound. Montpellier building industry and its politicians lust for the land of Thau which represents a frontier for new development. Making water quality the priority of the area is an **on-going political struggle**.

State services have indeed a large influence on Thau. However the “mission Racine” responsible for building tourist resorts south of Montpellier was also a State service. Before decentralization the harbour was under State supervision too. State power does not preclude heavy modifications of environmental systems. Several private and public political parties committed themselves to set water quality as the first priority in the area. The salmonella crisis of 1989 was probably instrumental in this process but cannot be interpreted as a deterministic cause. The SMVM had been launched before the crisis. Environmentalists enrolled oyster producers (and vice-versa) but their alliance is fragile. For instance, since pollutants from the Rhône-Sète canal do not affect oysters, it does not become a main concern for shellfish producers.

There is no structural cause explaining the environmental protection of Thau. It results from a series of political engagements. The discourse on quality (nice landscape, water quality, oyster production, vineyard environmental-friendly practices) is part of a territorial narrative supported by SMBT *animateurs*, environmental state services, environmental associations (i.e. CPIE) and some politicians. It appeals to long-settled inhabitants who have family bonds with shellfish farmers. It also fits with urban new-comers' expectations, looking for quiet, sonny, nature-like places. Nevertheless, it remains fragile when confronted to alternative discourses on infrastructures' development.

In conclusion we argue that what is specific in Thau is the political commitment of a wide range of actors in favor of water quality which makes sense for them despite their diverging interests. Thau is nationally recognized as a model in terms of integrated management of coastal area. *Animateurs*²⁷ played an important role in this story. Ironically, although many agree today on their role in implementing the WFD, their position would not probably have been sustained if water users had to bear the cost in accordance to the WFD cost-recovery principle.

4.4.2 Favourable conditions for “animateurs”

Many French river basin organisations hired *animateurs* elsewhere than in Thau. Such places do not share the same stakes nor specific environmentalist pressures. Rather, their common history is one of **motivation of some elected officials for water** issues (water politicians), water state services and water agencies that was crucial for setting up basin organisations able to invest in permanent jobs. This raises the question of their sustainability. Indeed, as reforms threaten the financial support such organizations got from local authorities (conseil general, conseil regional), river basin organisations fear they could disappear. If the water agency supports such structures (see 4th fundamental orientation of the RMC SDAGE) financing rules are seldom clear. We can notice that a result of the 2008 consultation on the SDAGE was expressed concerns about financing and the reluctance of conseil general and conseil regional to be identified as financial supporters. Basin structures are threatened by the future reform of local authorities which aims at simplifying local collectivities number and competencies. The SMBT itself expresses some doubts concerning the future. Territorial river basin public bodies (EPTB) initially set up to initiate large water infrastructures (dams, dikes, irrigation schemes) seem to benefit from a more sustainable status. The water law of 2006 allows water agencies to raise additional ecotaxes for the benefit of EPTB. Some river basin organizations claim the recognition of a new status of “EPAGE²⁸” for sub basin operational structure whereas EPTB should be dedicated to the basin level. For them it may simplify the organisation of water management at the local level and consolidate sub-basin structures such as SMBT. The issue at stake is to implement a subsidiarity principle for water management. An amendment to the environment code was rejected by French senate at the end of 2009 arguing that the reform of local collectivities will bring solutions.

France is not the only country experiencing the need for professionals acting like ambassadors for the sake of water quality (See Netherlands Report section on water ambassador missions played by civil servants as a part time job). Organizing integration between sectors, supporting public participation, fostering “appropriation” is all the more important since water spills over sectors and aquatic systems resist standardization. *Animateurs* are needed wherever water quality improvement requires more than command and control policies, but a large commitment of the population. Yet investment on such function is different among European countries.

Animateurs perform their role in the long term run and beyond any specific sector. Their added-value cannot be assessed *a priori*. Some public body or non-profit organization must hire them. What can be learnt from France is the strong dependency between an *animateur* and the organisation that supports his/her position. Although *animateurs* may be employed by non-basin organisations, their legitimacy to integrate policies and actions at basin-level is challenged everyday when they are not supported by adequate basin-organizations (*structures porteuses*). However, to perform their mediation role, they should not appear as too powerful. In France, the intermediate level of inter-municipality is appropriate for this, although it seems a fragile crafting.

²⁷ SMBT animateurs are often asked to account and share their experience during meetings.

²⁸ Etablissement Public d’Aménagement et de Gestion des Eaux.

To transplant this innovative job in other countries, one has to think about similar profiles and roles in the country of adoption. The term *animateur* in French echoes the role played by community organizers in youth organizations as well as the role of project manager in engineering. Neither animator, nor community organizer nor project manager may be the right terms in another context. In France, some organizations tend to prefer the word *coordinateur* rather than *animateur*. Moreover a better term may be found abroad that would better embrace all the meanings of this job, and may provide a useful feedback in the French lexicon. There is no need for a unique word and a unique profile.

5 Conclusion and discussion of Results

“This chapter summarizes the main results of the report. It points out key findings on the WFD implementation in Thau. Then it addresses issues concerning the implementation of the WFD that can be generalised from the Thau basin to other sites.”

5.1 Key findings on the WFD implementation in Thau

The WFD implementation in France first occurs at national level. Transposition led to a recentralisation of water management. The new water act transposing the directive creates a new agency (ONEMA) for standardising research, monitoring methods and reporting on water. The government also took the opportunity of the WFD to include this issue in a national debate on sustainable development in 2007, the Grenelle de l'environnement. This debate framed the level of the environmental objectives in all districts. Despite these innovations, implementation much relied on recycling previous tools.

Water agencies and State offices organised experts meeting to set environmental objectives and to design measures. Financial provisions and transfers already exist to finance such programmes. Since 1968 in France, water agencies have coordinated water transfers for water management. Their last plans were not so different from the one expected under WFD. The programme of measures should be 10% more expensive than previous programmes. Uncertainties remain on this assessment. Moreover, how this cost will be shared among users might change. For this reason many local authorities refused to validate the document. More broadly the implementation of measures relies on “maîtres d'ouvrages”, that is to say public or private initiators of projects. No binding legislation forces them to invest for water. Water agencies try to convince them to act through incentives and by supporting “*animateurs de bassin*”.

The job of *animateur de bassin* emerged in France more than twenty years ago. First employees were short term project managers coordinating river contracts. The profession is still in the process of institutionalization. Staff working in this position gets structured in professional associations. From this young history we are able to draw some learning about the favourable conditions for this I3 and how it makes a difference in WFD implementation.

The existence of sustainable local authorities in charge of water issues is a **favourable condition** to stabilise such jobs. To perform the required integration between actors and sectors, animateurs rely on different capacities: technical knowledge and skills in human relationships.

Animateurs make such a difference in WFD implementation that water agencies speak of **orphan water bodies** for those having no animateur. While competition between sectors and actors challenges the consistency of local planning, animateurs embody in one person integration between sectors, local appropriation, and public participation. In Addition, the Thau basin is specific in that the same local authority employs four *animateurs*, one dedicated to the SAGE (the French procedure for planning water uses at local scale), one dedicated to the SCOT (the French procedure for planning

land-uses at local scale), another one to the lagoon contract and the last one to the Natura 2000 project. Moreover perimeters of SAGE and SCOT on Thau almost coincide.

5.2 Issues raised by the WFD implementation

Focusing at local level, we are able to point out two main issues raised by the WFD implementation that are not so often addressed in the literature: the uncertainties regarding the political risk of the WFD, and the required workforce to implement the WFD at the local level. Then zooming back to the national and international level, we address the lack of integration at top level.

The first difficulty concerning the local implementation of the WFD refers to **uncertainties**. While uncertainties concerning the future of waterbodies, as well as legal and political uncertainties are generally well addressed in the literature, interaction between physical features and political risks are scarcely expressed. What is important to highlight is that such uncertainties are strategically used by different actors and the resulting picture escapes public debate.

Our case-study reveals that the **commensuration** required for public debate is still missing in the WFD implementation process. The WFD provides so many categories of water bodies, of objectives, of exemptions, ... that politicians and decision makers experience hard time to grasp the level of ambition that is to be set at their level and what are the risk to set such an ambition.

In the case of France, the level of ambition was initially set by local experts, but during the bottom-up aggregation this process meets the national agenda on the environment. The bottom-up aggregation overlooked the national sovereignty of the government and the parliament to set policy objectives. To hold back the reins of the decisions, the government proposed a general target of 66% of all waterbodies to achieve the good ecological status by 2015. While this target was presented as a general ambition for implementing the WFD, it actually says nothing about the chemical status. It minimizes the discrepancies between waterbodies, summing up waterbodies of very different size and very different type (groundwater, river, coastal zones, etc...). Whereas the WFD expresses the need for public participation it offers strategic discursive resources to decision makers to blur the limits of the objectives to be discussed.

Strategic interpretation of the risks related to the WFD goes beyond commensuration. In our case-study we notice that decision makers and experts framed the public debate by focussing on some uncertainties and avoiding others. In France, the risk of not being able to justify derogations was amplified whereas the risk of setting binding objectives that could not be met and the risk of spending too much money without significant results were little addressed.

The second difficulty concerning the local implementation of the WFD is that it requires measures that fall under the competence of local organisations. The **local appropriation** of the WFD is crucial for this process. As presented in our case-study, this appropriation shall not be taken for granted. It requires specific staff dedicated to the integration endeavour and making the river basin a living experience. Our case-study develops an in-depth analysis of the role of river basin *animateurs* in this respect. However such jobs require funding to secure the corresponding manpower. Here we find a fundamental contradiction in the WFD. By promoting the total cost recovery of water services, the WFD says nothing about the transaction costs for planning and sectorial integration. Had such costs to be imputed to different services, it would have hampered the very concept of integration. In France, river basin animateurs and river basin organisations emerged thanks to territorial subsidies. Although general taxes paid for cross-scale and sectorial integration, today such funding is challenged by the **cost-recovery principle**.

The last difficulty we noticed in implementing the WFD is the lack of integration at higher levels. In France, during the Grenelle process commitments were achieved to improve the environmental quality. However, only the first sets of legislative pieces came into being. Other decisions are postponed. In sectors like agriculture, land-planning or transportation, later national decisions will impact water objectives. In such domains, decisions at EU level are crucial, although not integrated.

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Appendix

List of research questions and their answers in the report

Chapt. Inception report	Question	Section dealing with this question
	Institutional background	
1.1	Were environmental objectives set before and, if so, by whom? Were they binding?	2.2.1.2
1.2	Who had to take measures and who had to pay for them? What is the situation now?	. 2.1.1.2. + Figure 6. Water policy actors in France. 2/ Functions + 3.1.4.
1.3	Was there cost recovery for water services or were there other financial transfers between water users and water services providers (including for ecological services)? What is the situation presently?	2.1.3.
1.4	What was the organizational structure for water management and other relevant policy sectors? What is it now?	2.1.1.2 + 3.1.+ cf Fig 5 fig 6.
1.5	For how long have important institutions been in place? If they are recent, what existed before (only in the postwar period)?	2.1
	Transposition of the WFD	
2.1	How many water bodies have been designated as artificial or heavily modified?	2.2.3.3. + 3. 6. 1.
2.2	How many river basin districts have been identified and have they been split up in subareas? Do they match existing administrative or political areas or not?	2.1.1.2. + 3.1.1
2.3	Who has been designated as competent authority and what are its tasks and relations with other government bodies?	2.2.2.1
2.4	Has pollution control changed?	3.1.1 + 3.1.2
	Brokers	
3.1	Which actors (individuals or organizations) steer changes induced by the WFD?	3.1.1 + 2.2.2.2
3.2	Whose duty is it to comply with the WFD at local scale?	2.1.1.2
3.3	What links do steering actors have with international arenas?	2.2.2.2
3.4	What are the veto points (constitutional rules opening opportunity for vetos) and who are the veto players (actors having the power to oppose a measure or a plan) (Caporaso et al., 2001 ; Dolowitz et al., 2000; Tsebelis, 2002)?	None was identified
3.5	Who are the actors acting as brokers (in a continuum between gate-keepers and facilitators)?	Animateurs see 3.2., 3.3 and 3.6.3
4.3	Coordination across scales	
4.3.1.	Which water management organizations at which scales are involved in the decisionmaking process regarding the environmental objectives and the measures (who decides on what) and how is their interaction organized?	2.2.1.2 and 2.2.2 and 3.1.

4.3.2.	What has changed as a result of the implementation of the WFD? How have environmental objectives and cost-effective sets of measures been identified in practice for the first RBMP (including possible use of the exemptions), what are the main challenges addressed by these changes, and which challenges remain, if any?	3.6 and 2.1.1.2
4.3.3.	Does the financial set-up of the water management institutions correspond to their obligations to implement measures?	3.2. and 3.2.3
4.3.4.	How are the definition of environmental objectives and the selection and implementation of measures (including exemptions) organized across scales ? Which factors and actors play a role? How are different approaches agreed upon at higher levels communicated to lower levels, and how are they implemented? What are related challenges and potential solutions?	3.2
4.3.5.	What is the role of financing and especially of restrictions concerning financing possibilities? To what extent are the available budgets known and to what extent do the costs of measures play a role in the planning process? What are the financially secured budgets? Are there alternative sources for financing measures? According to which criteria is the revenue of the Wasserpfennig (an environmental tax on water abstractions) distributed/ used? (The draft RBMP will be used here as a first basis of our work.)	2.1.3
4.3.6.	What would be needed (and under which circumstances) for optimizing the process of selecting cost-effective sets of measures, so that information/ knowledge at the lower administrative levels is used but at the same time an integrated planning at a higher scale is possible? How can financial restrictions at all levels be taken into account better in the planning process?	2.1.3
4.4.2	Integration between sectors	
1.1	How is territorial management organized at different government levels? Which sectors deal with "territorial management" and what is the place of the "water sector" in this?	3.3
1.2	What are the major differences between the different sectors (policies, laws, responsible organizations, mismatch in boundaries at different scales)?	3.3
1.3	Do the geographical boundaries match with each other and with the boundaries of river basins and water bodies?	3.3
2.1	Have any specific institutions and instruments been created or adapted for promoting cross-sectoral governance that includes the water sector (new administrative bodies, new procedures, commissions, specific cooperation processes, ...)?	3.3.2. + 4
2.2	To which extent have local contextual factors, such as good relations, cultural factors or individual "leaders", facilitated or hampered cross-sectoral governance?	4.
3.1	Has the WFD changed the organization of territorial management?	Not directly, see 3.2 + 3.3.
3.2	To which extent does the WFD currently influence the (cross-sectoral) decision making process, the level of public participation, the content of planning documents and list of actions of other sectoral policies implemented on the same territory?	3.4.2
4	When cross-sectoral policies are implemented, is there a legal hierarchy between public policy instruments and if so, what is the place of those related to the WFD?	2.2.1.2+ 3.3 + 3.3.1.+ 3.3.2
5	To what extent does trans-sectoral knowledge integration and collective learning take place to develop a more holistic understanding of territorial complexity and interdependencies between sectors, including the water sector? Are there any specific IC Tools, research projects, research traditions or intermediaries that may facilitate or have facilitated this?	3.6
4.5.2	Participation analyzed	2.2.4 + 3.4.

1.	<i>At which (administrative) levels and how does participation take place?</i>	3.4
1.1	Who are the target groups at different administrative levels?	3.4
1.2	How are the different target groups informed of the possibility to participate?	3.4
1.3	What is the degree or level of participation?	3.4
1.4	Which means (instruments/ methods/ tools) are used to reach the target group or groups?	3.4
1.5	How formal or informal are the tools and methods used?	3.4
1.6	How many people participated at which phase of the process, and what role(s) did they play? If they represented groups or organizations: did they continuously represent their group or organization or did the representatives change?	3.4
1.7	What were their resources (time, knowledge, ...)?	3.4.
1.8	Are there any known conflicts between the participants? Did the participatory process influence the conflict and in what way?	3.4.
2	<i>How are the outcomes of participation considered in decision-making?</i>	3.4
2.1	For which phase of the implementation of the WFD was participation organized and how?	3.4
2.2	How are the outcomes of participation integrated into decision-making? Are there legal requirements to take the outcomes into account or are the outcomes purely informative for the authorities, who have discretionary powers to decide what to do with the outcomes? What informal rules are followed in practice, what is politically accepted and what not? Is there a requirement to give feedback to participants concerning the use made of the outcomes, is this common practice, and how is feedback given, if at all?	3.4.1.
2.3	Are the participants satisfied with their involvement? What are or were the expectations of the participants and in how far were they met?	3.4
2.4	Do people see scope for improvement, where and how?	3.4.
2.5	How can the effectiveness of the participation that was carried be measured? Were criteria and indicators developed beforehand? Did ideas/ plans exist to undertake an assessment/ evaluation? Examples of quantifiable indicators include: · How many stakeholders participated? · How many different items (pieces of information, wishes, proposals, ...) were suggested by the participants and what percentage was taken over by the authorities and incorporated in subsequent decisions? · Are participants mobilizing their own resources (how much) and contributing to the project materially? Examples of qualitative indicators are: · Did the participants show any behavioural changes? · Are they “empowered”? Do they achieve increased self-reliance and control?	3.4
2.6	Are there any factors that make the participation process unique for the specific situation?	4
4.6.1	Appropriation	
1.1	Beside official institutions responsible for the implementation of the WFD, what local organizations show an interest for the implementation of the WFD and what are their interests? Which local interests are translated in terms of the WFD? Who supports the objectives of the WFD? Are there conflicting interests? Do local people accept the risk of not reaching a good water status?	3.5 for all basic and detailed questions

4.7.3	Expertise	
1.	What information do the stakeholders get and is their local expertise used in the implementation process? This question will also get attention in the evaluation of the public participation process in each case (see section 4.5).	3.6
2.	What collaboration has there been between the technical experts and the staff involved in setting environmental objectives and developing and implementing measures? What expertise is actually used? For practical purposes, the case studies may focus on one or two of the most important research projects or on the role of a central working group dealing with research.	3.6
3.	Is expertise actually used in decision-making at the political level? We will have access to the draft and the final river basin management plans, to media reports and some other public documents, such as (in the Dutch case) minutes of the discussions in Parliament on the WFD. Moreover, some interviews may be held, either directly with stakeholders at the political level, or with their advisors.	3.6
4.	Are there any special tools used in the implementation process? Only the tools will be discussed	3.6.3

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Glossary of key terms, acronyms and abbreviations

This glossary explains all acronyms and abbreviations used in the project, as well as a number of key terms. Key terms included are those that a) are not used in ordinary language, or b) may cause confusion because they are used in a "technical" sense that differs from ordinary usage or because different authors use them in different ways. In some cases the meaning of a term cannot be understood without knowing something of the theory in which it figures, and in those cases the essence of the theory in as far as relevant for the term has been summarized in a few sentences. These summaries do not do full justice to the theory and should be seen as a first introduction and an *aide-mémoire* only.

As a general rule, the i-Five project uses terms in their broadest sense. If a more narrow sense is meant, this is indicated by adding an adjective or an explanatory phrase or by using a different term with a more narrow meaning.

Readers are advised that the English terms used do not always correspond completely with related terms in other languages and that these terms may have somewhat different connotations.

The glossary is also available on <http://www.i-five.eu>, including hyperlinks to related terms and to articles from the WFD. Updates will be made available on line only.

Term	Definition
Active involvement	◀ Term from WFD art. 14. Active involvement refers to any level of <i>public participation</i> above <i>consultation</i> . Active involvement implies that the interested parties participate actively in the implementation of the WFD by discussing issues and contributing to their solution (Drafting Group, 2002; Ridder et al., 2005).
Agence de l'eau	◀ French organization at the district level in charge of (1) co-financing investments for an integrated water management (since the water act of 1964) and (2) planning water uses for a better protection of aquatic ecosystems (since the water act of 1992). The agence de l'eau collects taxes on polluting discharge and water uptakes and supports water users' project for a better water management. Since 2006, Its five-year and annual program has been subjected to Senate and Legislature's approval. The Agence de l'eau is directed by a "comité de bassin" (basin committee) of water users, administrative officials and elected representatives, appointed by the Préfet.
Animateur de bassin	◀ Community organizer at the scale of a sub-basin (see 4.1) supporting the stewardship of the sub-basin.
Artificial water body	a) "A body of surface water created by human activity" (WFD art. 2.8) b) A body of water created by human activity that is designated as an "artificial water body." Several additional requirements apply for designating a water body as "artificial" (WFD art. 4.3, see section 2.2.1)
Broad public	◀ See <i>General public</i>
Certified expert	◀ See <i>Expert</i>

Collaboration	<p>From Latin “collaborare”, meaning literally working together. Collaboration can be analysed in terms of three phases. First, potential participants need to come together and commit themselves to collaborate (“convening”). Secondly, they need to agree on the goals for the collaboration and the measures to take (“direction setting”). Thirdly, this agreements needs to be implemented (“implementation”; Gray 1989). As used here, collaboration includes different forms of negotiation. Moreover, it is used as a descriptive and not as a prescriptive term. It takes a lot of time and effort and should only be embarked upon if the issue is important enough and there is a good chance of success (Huxham & Vangen, 2005).</p>
Communication	<p>Social interaction through messages(Fiske 1996). Communication is not limited to exchanging or disseminating information and may involve establishing or conforming social relations, identities and communities, giving orders, asking questions, influencing other people, self-expression, etc.</p>
Competent authority	<p>National (or international: WFD art. 3.5) authority that Member States have to identify or newly establish as part of the “administrative arrangements” that they have to make for implementing the WFD on their territory (WFD art. 3.3 and WFD art. 3.5).</p>
Consultation	<p>Level of <i>public participation</i>. It implies that the public can react to plans or ideas of government, either in writing or at a hearing, or that government actively seeks the comments and opinions of the public through for instance surveys and interviews. Art. 14 of the WFD refers to written consultation only, but WFD Preamble (14) and WFD Preamble (16) refer to consultation more generally (Drafting Group, 2002; Ridder et al., 2005).</p>
Cooperation	<p>Used as synonym for <i>Collaboration</i></p>
Cost recovery	<p>See WFD art. 9. Member States have to “take account of the principle of recovery of the costs of water services, including environmental and resource costs”.</p>
Environmental objectives	<p>The environmental objectives from WFD art. 4 (see section 2.2.1 and 2.2.3)</p>
EPAGE	<p>River sub-basin territorial public bodies (Etablissements publics d’Aménagement et de Gestion des Eaux)</p>
EPCI	<p>Local Authorities in France corresponding to inter-municipal joint-board bodies (Etablissements publics de coopération intercommunale)</p>
EPTB	<p>River basin territorial public bodies (Etablissements publics territoriaux de bassin)</p>
Expert	<p>Person possessing <i>expertise</i>. This includes the “certified experts” with formal qualifications, usually within a specific scientific discipline, and “lay” or “local experts”, who lack formal qualifications but still possess special skills and information. In this report “experts” is used to refer to certified experts; the non-certified experts are always referred to as “lay” or “local experts”.</p>
Expertise	<p>a) Special skills and information that are considered relevant for a specific issue (“expertise in...”). b) The products of expertise, such as research reports and advices.</p>
General public	<p>Individual citizens. In WFD Preamble (46) the term is used loosely and seems to refer to the individual citizens and organized stakeholders.</p>
Good chemical status	<p>See section 2.2.1.</p>
Good ecological potential	<p>See section 2.2.1.</p>

Good ecological status	◀ See section 2.2.1.
Good quantitative status	◀ See section 2.2.1.
Good water status	◀ See section 2.2.1.
Groundwater body	◀ "A distinct volume of groundwater within an aquifer or aquifers" (WFD art. 2.12)
Harmonization	◀ Operation securing consistency within a group
Heavily modified water body	◀ a) A surface water body that "as a result of physical alterations by human activity is substantially changed in character" (WFD art. 2.9) b) Such a body of water that has been designated as a "heavily modified water body". Several additional requirements apply for designating a water body as "heavily modified" (WFD art. 4.3, see section 2.2.1)
I-3	◀ Innovative instruments and institutions for implementing the WFD. I-3s may a) be designed purposely to help the implementation, b) emerge in the implementation process without being purposely designed, or c) be "transplanted" from elsewhere. The i-3s studies in the i-Five project fall in category a) and b), but their "transplantability" will be assessed.
Implementation	◀ (European directives) Transposition in national law, followed by the application in practice.
Information and communication tool	◀ Material artefact, device or software to support communication and/or collaboration (Craps & Maurel, 2003; Ridder et al., 2005).
Infringement procedure	◀ Procedure that the European Commission can start if it thinks that a Member States has not implemented a directive correctly. Ultimately, the European Court of Justice may impose hefty fines and penalties. (art. 226-228 EC Treaty, see section 2.3.1)
Innovation (innovative)	◀ Practical application of new and original solutions. Innovation is therefore not the same as invention. Moreover, the innovative character of solutions is relative: what is new and original in one country or one basin, may be standard practice in another. The term innovation has positive connotations, and indeed learning is not possible without innovation. However, innovation implies specific goals to achieved and is therefore not neutral, and innovation is not necessarily effective for reaching these goals.
Institution	◀ All "humanly devised constraints that structure human interaction. They are made up of formal constraints (rules, laws, constitutions), informal constraints (norms of behaviour, conventions and self-imposed codes of conduct), and their enforcement characteristics" (North, 1990). Other authors use the term to refer to formal institutions or to organizations only.
Instrument	◀ Artefact crafted by humans in order to achieve specific goals.
Integration	◀ 1. To make into a whole by bringing all parts together; unify. This operation may require mutual adjustment so as to overcome contradictions between parts and to reach harmonization. 2a. To join with something else; unite. 2b. To make part of a larger unit: integrate the new procedures into the work routine (www.answers.com).
Interested party	◀ Term used in WFD, art. 14. Considered to be synonymous with <i>stakeholder</i> , first meaning.
Lay expert	◀ See <i>Expert</i>
Local expert	◀ See <i>Expert</i>

Maître d'ouvrage	◀ A political body responsible for initiating and financially supporting (at least partially) a project (measure, study, infrastructure).
Maîtrise d'ouvrage	◀ The responsibility of a maître d'ouvrage.
Measures (WFD)	◀ "Basic measures" that are required under existing directives (WFD art. 11.3) and "supplementary measures" that may be needed for achieving the environmental objectives of the Directive (WFD art. 11.3). Together, they make up the "programme of measures" (WFD art. 11.2). According to WFD Annex III(b), Member States have to select the most cost-effective combination of measures, based on the economic analysis of water uses, but the basic measures have to be included in the programme of measures in any case.
MEEDM	◀ French Ministry of ecology, energy, sustainable development and sea (Ministère de l'écologie, de l'énergie, du développement durable et de la mer)
NGO	◀ Non-governmental organization
Political uncertainty	◀ <i>Uncertainty</i> concerning the future behaviour and decisions of political decision-makers, such as elected representatives and ministers, that may result from the difficulty of involving and gaining commitment from them early in the policy process and from political changes that may take place later on.
PP	◀ <i>Public participation</i>
Programme of measures	◀ See <i>Measures</i>
Public	◀ "One or more natural or legal persons and (...) their associations, organisations or groups" (Aarhus Convention, SEA Directive (2001/42/EC)). Cf. <i>Stakeholder</i> . Government bodies are usually not considered to be part of the "public".
Public involvement	◀ See <i>Public participation</i>
Public participation	◀ Direct participation in decision-making by non-governmental stakeholders (the general public, individual companies and organized interest groups). It requires but goes beyond providing access to and actively disseminating information, and may include consultation and different forms of active involvement of the public (Ridder et al., 2005). Other authors reserve the term for participation by the general public only and contrast it with "stakeholder participation": participation by organized stakeholders. Still other authors use "(public) participation" as one form of "public involvement", together with "consultation". In this case "(public) participation" refers to any level of public participation (in our sense) above consultation.
RBMP	◀ <i>River basin management plan</i>
Reference conditions	◀ The natural or near-natural conditions of a specific type of water body. They form the basis for determining the "good ecological status" (WFD Annex V, see section 2.2.2)
Reference site	◀ Site with natural or near-natural conditions used for determining the reference conditions for a specific type of water body.
River basin	◀ "The area of land from which all surface run-off flows (...) into the sea at a single river mouth, estuary or delta" (WFD art. 2.13). In practice, this term is often used to refer to the main management unit for implementing the WFD: the <i>river basin district</i> .
River basin district	◀ Main management unit for implementing the WFD, consisting of one or more adjacent <i>river basins</i> , including coastal waters and the groundwaters assigned to the district (WFD art. 2.13 and WFD art. 3.1).
River basin management plan	◀ Plans required by WFD art. 13, following the procedure of WFD art. 14.1.

SAGE	<p>◀ Schéma d'Aménagement et de Gestion des Eaux. French instrument created by the French water act of 1992. This binding planning document determines objectives and rules required to reach a integrated water management at the scale of the sub-basin. Should be in accordance with the <i>SDAGE</i>. The SAGE is developed by a local commission of water (Commission locale de l'eau) which members are appointed by the Préfet among administrative officials, elected representatives and NGO.</p>
SDAGE	<p>◀ Schéma Directeur d'Aménagement et de Gestion des Eaux. French instrument created by the French water act of 1992. This binding planning document determines objectives and principles required to reach a integrated water management at the scale of the district. The SDAGE is co-developed by the Agence de l'eau and the state office in charge of the environment at the district level, under the responsibility of the Préfet coordonnateur de bassin. It is subjected to public inquiry and Préfet's approval.</p>
Stakeholder	<p>◀ Any person, group or organization with an interest or "stake" in an issue, either because they may be affected by the issue or because they may have some influence on its outcome (cf. Freeman, 1984). Stakeholder in this sense includes authorities, experts, the "general public" and organized interest groups. Other authors reserve the term for organized interest groups only.</p>
Stakeholder participation	<p>◀ See <i>Public participation</i>.</p>
Structure porteuse	<p>◀ Basin-organisation supporting an integrated water management plan (see 4.2.2)</p>
Surface water body	<p>◀ "A discrete and significant element of surface water such as a lake, a reservoir, a stream, river or canal, part of a stream, river or canal, a transitional water or a stretch of coastal water" (WFD art. 2.10, WFD Annex II; see section 2.2.3)</p>
Technical expert	<p>◀ A <i>Certified expert</i> with formal qualifications in a technical or natural science discipline.</p>
Technical-scientific uncertainty	<p>◀ <i>Uncertainty</i> concerning technical and natural system, in the context of the WFD especially concerning the effects of measures on the water status.</p>
Trust	<p>◀ 1. (noun) the firm belief that an actor will act (or a technical system will perform) dependably, securely and reliably within a specific context. 2. (verb) acting on the basis of this belief.</p>
Uncertainty	<p>◀ Uncertainty refers to the situation in which there is not a unique and complete understanding of an object or a system because of the inherent variability or unpredictability of the object or system, because of limited or imperfect information, or because the object or system and the available information on it can be seen and interpreted in different perspectives (Brugnach et al., 2008). In this report, we distinguish between technical-scientific uncertainty, legal uncertainty and political uncertainty.</p>
Water body	<p>◀ Smallest management unit for implementing the WFD. See <i>Surface water body</i> and <i>Groundwater Body</i> and section 2.2.3.</p>
WFD	<p>◀ European Water Framework Directive (2000/60/EC)</p>

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