



PILOT ACTIONS ON THE APPLICATION OF THE DIRECTIVE 2000/60/EC “WATER FRAMEWORK DIRECTIVE”



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Introduction

MAREMED – Maritime Regions cooperation for Mediterranean, is a project started in 2010 and co-funded by the MED Programme, that involves 15 partners among Regions and local administrations from France, Italy, Spain, Greece and Cyprus together with the Conference of Peripheral Maritime Regions (CPMR)

The project is dealing with the following themes: maritime policy governance, the integrated management of coastal and maritime areas, fisheries, adaptation to climate change in coastal areas, efforts to reduce pollution and data management.

Its objective is to develop tools for enhancing and coordinating regional, European and Mediterranean policies on these six thematic strategies

Within the first work phase (diagnosis phase), developed during 2010 and 2011, it was carried out an overview of the policies implemented and their governance by the project partners. The second phase, corresponding to this stage, identifies pilot coastal zones in which it will be promoted transnational management initiatives and share operational tools to aid in decision-making for the six thematic strategies.

Objective

FEPORTS, as coordinator of the Water Framework (WFD) Directive Working Group has identified some pilot actions to be developed on this issue. The original envisaged single pilot action has been divided into three actions in order to facilitate their completion since each one may be addressed to different interviewees /groups of experts.

The aim of these pilot actions is to better understand those problems related to the technical and operative aspects of the implementation of the WFD in order to find common problems, best practices, etc, that could improve the implementation process and also to help other regions with their implementation of the WFD. The purpose is to establish a comparative framework on the state of implementation of the WFD among the project participant regions and informing the European Commission on the difficulties and problems found in the Mediterranean area for applying and duly interpreting the WFD.

Pilot actions identified are:

- **Advanced questionnaire.** This questionnaire focuses on several topics inside the WFD like:
 - Intercalibration
 - Water Planning
 - WISE system
 - Transitional waters
 - Sampling
 - Priority Substances

The questionnaire will also take advantage for clarifying those questions from the diagnosis phase questionnaire that were not well asked/answered due to different reasons.

- **Coastal monitoring sampling points**
- **WFD Interpretation and implementation**

Selection of pilot area

In order to make easier the development of the pilot actions, a local area or zone will be chosen for each participant region. The selected area has to be a representative coastal area facing common problems related to water quality/management in the coast. Ideal areas are those close to port areas, river mouths, coastal industrial areas, protected areas with high human pressure, etc...

Participant regions

Participant regions are those involved in MAREMED as partners:

- PACA
- Corse
- Crete
- Emilia-Romagna
- Lazio
- Liguria
- Marche
- Toscana
- Comunidad Valenciana
- Larnaca

Deliverable

A publishable document showing and analyzing main findings and conclusions will be delivered in order to inform the European Commission on the application of the WFD in Mediterranean coastal areas. The document will focus on the participating regions and their pilot areas but conclusions will be extrapolated to other Mediterranean areas if appropriate. FEPORTS will try to involve in these actions other Mediterranean coastal areas in order to have a wider perspective of the problems related to the WFD implementation.

It's expected to print around **600** copies of such document to be distributed among the partners, European Institutions, regional governments, etc. It will be also distributed in PDF format through the Internet.

PILOT ACTION 1: Advanced Questionnaire

This action is aimed at deepening into the understanding of the practical problems and hindrances related to the implementation of the WFD in maritime and coastal areas and identifying common problems / ways of proceeding. The proposed questionnaire is divided into sections and its purpose is to help to better understand the status of the WFD implementation in the considered areas and the use of management tools. Please, take the space you need if you want to remark or comment anything:

Intercalibration

To define the “Good Ecological Status”, in the first phase of intercalibration, which ended in 2008, it was not possible to intercalibrate all biological quality elements in all water categories. The existing gaps were due mainly to the lack of development of WFD compliant national assessment methods and the lack of data for some quality elements. The intercalibration exercise was therefore continued in a second phase from 2008 to 2011 in order to achieve comparable and WFD consistent class boundaries for all biological quality elements.

After the conclusions of the last intercalibration meeting (17-18 November):

1. Is the intercalibration process considered as finished?

Not totally. Some parameters are still in discussion. Eg. benthic communities of the sediment.

2. What are the main problems identified in your country/region respect to the intercalibration exercises?

The “main problem” is the final EC control that do not agreed intercalibrations despite the fact that the exercises are considered as valid by all participants and all scientists of different regions. After, criteria to correct are not always clear or very difficult to apply.

In Corsica another problem is related to the very good state of most of the water bodies (despite the fact that some problems exist and must be solved). When intercalibration has been discussed, we have intercalibrated methods (so results should be comparable) but we have to propose our own reference values, adapted to Corsica, to raise the problems in a scale “of low perturbations” existing here.

3. Do you think intercalibration exercises have been good enough in order to compare different water bodies in different European regions? Why?

Yes, for parameters with methods that has been quite well intercalibrated (so results are comparable).

Water Planning

Regarding River Basin Water Planning:

4. **Has your River Basin Authority (or the correspondent management authority) got some specific DOCUMENT (study, assessment, analysis) for analyzing the previous situation of your River Basin/s?**

The “Agence de l’Eau Rhone Méditerranée Corse” develop a great number of specific documents.

5. **If so, could you give some link to it? Please, do not refer to monitoring networks or tools but documents¹ that analyze or assess the results of these networks or tools.**

www.eaurmc.fr
www.rhone-mediterranee.eaufrance.fr
www.rhone-mediterranee.eaufrance.fr/donnees-documents
www.documentation.eaufrance.fr

6. **Could you identify these concrete studies (title, author, and year) and specify a link to them?**

4 documents summarize well the question, (maps under are extracted from these documents):

Shéma Directeur d’Aménagement et de Gestion des Eaux, Bassin de Corse, DCE, Comité de Bassin, Collectivité Territoriale de Corse;

Rapport d’Evaluation Environnementale et Avis de l’Autorité Environnementale, Bassin de Corse, DCE, Comité de Bassin, Collectivité Territoriale de Corse;

Document d’Accompagnement du SDAGE, Bassin de Corse, DCE, Comité de Bassin, Collectivité Territoriale de Corse;

Programme de Mesures 2010-2015, Bassin de Corse, DCE, Comité de Bassin, Collectivité Territoriale de Corse;

A lot of other documents has been produced and cannot be listed here. For a first approach, please refer to the following links:

¹ In the diagnosis phase some of the partners said that they carried out specific studies about the impact of the pressures of human activity on the water in the maritime and/or port areas.

<http://envlit.ifremer.fr/region/corse/documents>
http://envlit.ifremer.fr/documents/bulletins/regionaux_de_la_surveillance
<http://siecorse.eaurmc.fr/>
<http://siecorse.eaurmc.fr/donnees-documents/index.php>

WISE System

7. Do you know what WISE system is?

No

8. Does your region use the WISE System? Who?

As far as we know, No

9. Do you consider this system useful?

? No comments possible, we do not know enough the system.

Transitional waters

The WFD does not specify a minimum size for surface water categories, so the criteria for water bodies has been used to identify transitional waters that require designation. The Directive states that a water body must be 'discrete and significant'.

10. In these terms, have your coastal transitional waters been completely identified and defined?

Yes

11. What are the specific problems encountered (if any)?

Contaminants from Human activity:

Eutrophication by Nitrogen and Phosphorus from water treatment plan and agriculture;
Pesticides, metals, hydrocarbon, ...

Connectivity with the sea and rivers with periodic artificial opening.

12. Do you have any criteria to identify the size of a “transitional water body”?

In Corsica, “transitional water body” are lagoons with well define limits

13. Do you think it is solved the problem for establishing the chemical quality status and ecological potential in the transitional waters of your region?

Chemical quality status and ecological potential in transitional waters of Corsica is reasonably well known.

14. Could you list and give a map of the coastal transitional waters of your region?

- Etang de Biguglia FRET 01
- Etang de Diana FRET 02
- Etang d’Urbino FRET 03
- Etang de Palu FRET 04

Sampling

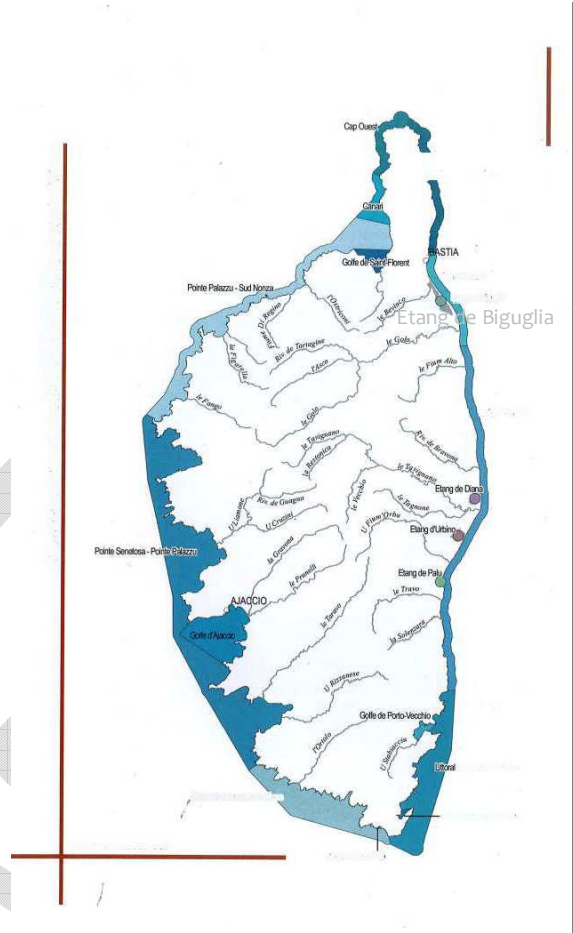
In order to answer these questions, please, contact someone who deals directly with coastal water analysis:

15. What are the main problems do you face in order to establish the chemical quality /ecological status of your coastal waters? Please specify if they are technical (what specific problems: for example taking samples, sampling frequency, buoys or sensors access, management and maintenance, analysis time, delays, complexity in determination of certain parameters, uncertainties, etc), financial (lack of budget, lack of funds), administrative (lack of staff, lack of coordination, competences overlapping, lack of law development, etc).

Normal technical problems that are, in most of the cases, solvent in the process.
Difficulties with budgets as always

16. What would be your necessities in order to make your work easier and to fulfill the WFD requirements?

Higher budgets



Priority substances

Please: consult to an expert in this issue:

17. Have you identified the common priority substances to be monitored in your coastal waters?

The list is the list proposed by WFD. Some other substances are monitored in monitored network or specific studies.

See:

http://envlit.ifremer.fr/documents/bulletins/regionaux_de_la_surveillance

18. Could you list the main priority substances that are being monitored?

Liste des 41 substances utilisées pour caractériser l'état chimique des eaux

	Les Substances Dangereuses Prioritaires de l'annexe X de la DCE (SDP)	Les Substances Prioritaires de l'annexe X de la DCE (SP)	Substances "Liste I" de la directive 76/464/CEE non incluses dans l'annexe X de la DCE
Objectifs de réduction nationaux (circulaire du 7 mai 2007)	50 % du flux des rejets à l'échéance 2015 (année de référence 2004)	30 % du flux des rejets à l'échéance 2015 (année de référence 2004)	50 % du flux des rejets à l'échéance 2015 (année de référence 2004)
Objectifs DCE sur les rejets	Suppression des rejets d'ici 2021 (20 ans après adoption par la Commission européenne de la liste des substances)	Réduction des rejets (pas de délai fixé)	Pas d'objectifs DCE sur les rejets
substances ou familles de substances concernées	Composés du Tributylétain (TBT) (Tributylétain-cation) PBDE (Pentabromodiphényléther) Nonylphénols (4-(para)-nonylphénol) Chloroalcanes C10-C13 Somme de 5 HAP = * Benzo (g, h, i) Pérylène * Indeno (1, 2,3-cd) Pyrène * Benzo (b) Fluoranthène * Benzo (a) Pyrène * Benzo (k) Fluoranthène	DEHP (Di (2-éthylhexyl) phtalate) Chlorure de méthylène (Dichlorométhane ou DCM) Octylphénols (Para-tert-octylphénol) Diuron Nickel et ses composés	Perchloréthylène (Tétrachloréthylène) Trichloréthylène Aldrine Tétrachlorure de carbone DDT (Dichlorodiphényltri-chloroéthane)
	Anthracène HAP *** Pentachlorobenzène Mercure et ses composés	Plomb et ses composés Fluoranthène Chloroforme (Trichlorométhane)	Dieldrine Isodrine Endrine
	Cadmium et ses composés Hexachlorobenzène Hexachlorocyclohexane (Lindane) Hexachlorobutadiène Endosulfan *** (Alpha-endosulfan)	Atrazine Trichlorobenzène (TCB) Chlorpyrifos	
		Naphtalène Alachlore	
		Isoproturon Chlorfenvinphos Pentachlorophénol Benzène Simazine 1,2 Dichloroéthane Trifluraline	

19. Are priority substances being measured in port waters?

Not in the WFD process but there are many studies and general survey that measure various contaminations in the port sediments and ports waters.

20. What are the main technical problems encountered when determining these specific substances? Specify for each substance the problem for the determination. For example:

Example of problems on the determination of priority substances

Priority Substance	Determination problem
Mercury	WFD threshold level under the detection range of the equipment.
Lead	There's no for the moment an appropriate methodology

	adjusted for salt waters.
Zinc	Problems of contamination in laboratory (blank water has more zinc than the detection level requested in the WFD).
...	...

Analyses are done by national agreed laboratories that work with highest standards.

In the Mediterranean French Regions, we take into account that some analysis detection thresholds in seawaters are clearly upper the WFD thresholds and the fact that transit of contaminants in the water column is particularly variable and in Mediterranean often at an extremely low level (under analysis detection). It is particularly the case of Corsica in which water quality is still in most of the cases very good.

To solve the problem, agencies (Agence de l'Eau RMC, IFREMER) in charge decide to work with biota integrators (mussels) and passive integrators (DGT) that allow to integrate the water column transit of contaminants. The results are treated after to fit with NQE ("Normes de Qualités Environnementale").

Today, methods of evaluation of the sea water by integrators of the different types are clearly important and efficient way that anyway need to be improve (particularly for some substances) through new developments.

21. What do you think about the threshold levels required in the WFD?

Ecologically, it is justified to considered that a very low level in seawater may induced a quite higher level through the food chain. It is also justified to consider that a very low level may be toxic for organism because most of the toxic thresholds for so much marine organisms cannot be well known.

Anyway, analysis detection thresholds in seawaters with the better standards are clearly upper the WFD target-thresholds, so very difficult to apply.

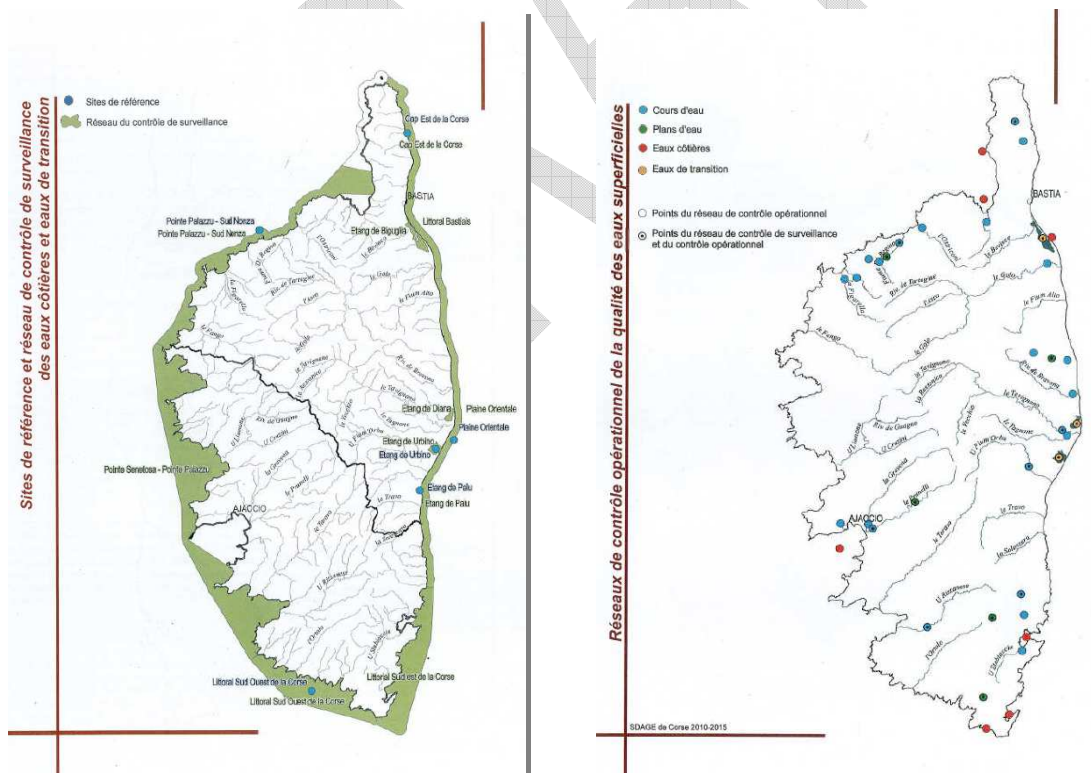
22. Do you think by using the present monitoring/analysis techniques is it possible to fully achieve the requirements of the WFD?

To achieve the WFD requirement, method-developments must still to done, eg. Biota and passive integrators presented above. Results obtained by Integrators methods of the Mediterranean French Regions is a good basis for future developments.

PILOT ACTION 2: Coastal monitoring sampling points

This action is aimed to better understand main differences among different countries in water sampling procedures. Some countries set the sampling points at a certain distance from the shore line (for instance 2 km) while others take the samples in the same shore-line. Results derived from the analysis of both samples will be clearly based upon different sampling procedures and therefore they won't be comparable. It's logical to think that a sample gathered 2 kms off the coast, where pollutants are more dispersed, will present more dilute values of certain parameters than a sample gathered in the shore-line close to a river mouth or a port area. According to the diagnostic phase, some Mediterranean countries are facing many troubles due to the bad quality of their coastal waters while others seem to be good status. Are different procedures and places for sampling involved in such results?

Please, give a map and/or geographical coordinates showing the main sampling points for the analysis of the parameters of each coastal water body identified for the WFD in your pilot area (you can also provide information relative to the whole regional coast). Please, specify the distance from the coast of each sampling point and, if available what parameters are measured and the frequency.



Explain also the criteria followed for the establishment of those sampling points.

A scientific committee associated with national and regional agencies and administrations establish the sampling points lists and frequency. Please refer to the documents presented in the section upper concerning documents for more information.

Anyway two types of survey points exist (see maps upper):

Operational survey (“contrôle opérationnel”) with sampling closed to the source of the perturbations identified;

General control (“contrôle de surveillance”) of the water bodies in which sampling points are in the middle of the water masses quite far away of the perturbations taking into account that perturbations are very low in Corsica compared to other regions.

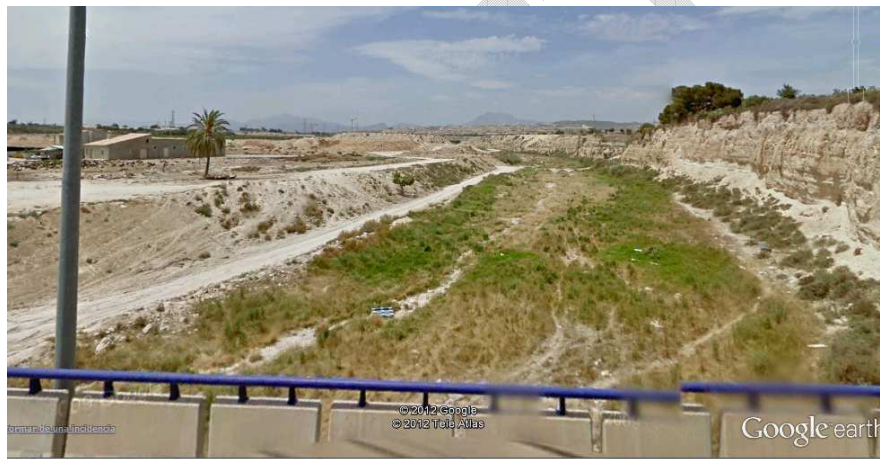
Around the survey points, precise position of the sampling depend of the type of parameters:

eg.: 15m deep for posidonia beds, 40 m for benthic communities of the sediment.

PILOT ACTION 3: WFD Interpretation and implementation

This action aims at finding similar problems among regions related to water management and WFD implementation in Mediterranean coastal areas. A series of reflections are given, followed by some questions. These questions should be answered by Water Quality and Planning Managers in your regions (local or regional authorities). Every answer (yes or no) must be duly explained.

WFD enacts the ideal status of a water mass corresponds to its natural status. In Mediterranean areas there are no rivers like Rhin, Rhône or Danube. On the contrary, we find seasonal rivers similar to this:



WFD uses indicators for rivers with “constant” water, a circumstance that is not very common in the Mediterranean basin. The Mediterranean tackles with floods that oblige these kind of rivers to be regulated (dams, reservoirs, channels, etc) to prevent flooding and also to take advantage of this resource that is so scarce.

Human intervention is sometimes necessary for protecting and improving economical and environmental values. For instance, the river Serpis, in Valencia, flows into the Mediterranean Sea with a very low flow (under its ecological flow), heavy loaded with nutrients that cause eutrophication in coastal areas. A solution to protect the marine ecosystems in this area is to prevent this water to flow into the Sea by treating and diverting it (to irrigation fields/reservoirs/protected wetlands) to generate both economical and environmental wealth. These solutions apparently go against the WFD premises.

1 Could you give an example in your area representing the necessity of human intervention on Water resources in order to protect economical and environmental values?

Yes

No

Describe:

The Biguglia lagoon (see map, transitional waters 14) is a rich natural reserve and a biodiversity spot impacted by urban development, agriculture, irrigation and communication with the sea that needs to be maintained by human actions. Irrigation channels that also bring quite a lot of freshwater into the lagoon must also be maintained by human actions.

The lagoon suffers episodes of eutrophication and sediments are often contaminated. Artificial opening on the sea is the only way to maintain the water quality of the lagoon. Fortunately, the lagoon do not impact the surrounding sea because a very important dilution effect.

2 Irrigation channels that flow into the sea and even rivers have certain amounts of pesticides, herbicides, fertilizers, etc. Is your region carrying out any action in order to prevent these waters to pollute the sea?

Yes

No

Describe:

A very low level of impact in the sea compared with other regions because Corsica has a low level of agriculture and industry development.

Despite TBT compounds (Tributyltin, a priority substance according to WFD) were forbidden in 2008 through the International Convention on the control of harmful anti-fouling systems on ships (AFS-Convention) and even a European Regulation is into force, still some amounts of TBT are detected in coastal water analysis, above all in port areas and shipping routes. Other compounds derived from illegal discharges or accidental spills (PAHs, also priority substances: anthracene, fluoranthene, etc) are also detected in these areas. They also come from the incomplete combustion of ship fuel. On the other hand, ship propellers turn over the sea bottom, increasing turbidity, affecting fauna and flora (posidonia fields, for instance).

3a Do you face similar situations in your area?

Yes

No

Explain

At a very low level compared with other regions because Corsica has a low level of agriculture and industry development.

3b Does maritime traffic (and its very high economical value) constitute a limiting factor for the real implementation of the WFD?

Yes

No

Explain

Recreational maritime traffic is very intense in the Corsican summer and increase quickly. Most of recreational boats are not fitted for waste-water and oil treatment and anchoring destroys posidonia beds.

For commercial traffic, high navigation risks such as in the Bonifacio straight may induced high risk of major pollutions.

The maximum mercury level present in biota, according to the WFD is 20 $\mu\text{m}/\text{Kg}$ of wet weight. Threshold level for mercury in the European legislation on foodstuffs is 0,5 mg/kg of wet weight (Commission Regulation (EC) N° 466/2001 setting maximum levels for certain contaminants in foodstuffs), i.e. **the mercury threshold level in the WFD is 25 times stricter than in foodstuff legislation**, which for some experts this fact supposes an apparent incoherence. This gives an

idea of the highly strict threshold levels of priority substances requested by the WFD compared to other levels.

4 Do you think regulation makes almost impossible to fulfill the requirements of the WFD?

Yes

No

Why?

In some cases it is impossible to fulfill the WFD requirement at reasonable costs.

5 Does the laboratory which makes the WFD analysis in your area count on the appropriate equipment and/or procedures for analyzing such strict levels of priority substances?

Yes

No

Why?

Analysis are done by national agreed laboratories. Anyway, analysis detection thresholds in seawaters with the better standards are clearly upper the WFD thresholds, so very difficult to apply. That is why we work with integrators (see upper).

6 The suitable equipment for making appropriate analysis of priority substances is very expensive and unaffordable for many institutions. Even the new list of priority substances includes the determination of hormones in very tiny concentration in water. Do you think there is any pressure or interest group involved in such highly restrictive threshold values set by the Water Framework Directive?

Yes

No

Why?

Do not know

7 Do you think there is a coherent proportionality among the cost of implementation of the WFD and the real environmental benefit achieved?

Yes

No

Why?

The proportionality is really case dependent. Analysis of proportionality must be done for each case.

In certain regions, like Valencia Community, there are high environmental values (like coastal marshlands, coastal reservoirs, etc.), which are protected areas (Natura 2000), but they depend on the anthropic action in order to prevail (some of them have an anthropogenic origin). For instance, the Albufera of Valencia depends on the water returns from the irrigation activities (agriculture). Moreover, some coastal marshlands are fed with water coming from agriculture and human activities. By contrast, the WFD considers water uses as anthropogenic pressures, but these uses not only create economic wealth but environmental and ecological wealth despite being semi-artificial areas.

8 Do you have similar examples of anthropogenic high-environmental value sites, like the Albufera, in your area?

Yes

No

The Corsican lagoons can be considered, at a lower scale, in the situation of Albufera.

9 Do you think in general the WFD is applicable in your region?

Yes

No

Why?

The situation of Corsica is environmentally quite good (low population, low development, 1000km of cost-line) and the good ecologic state is, in most of the cases, a real possible target.

10 Please, select one answer:

I think the Water Framework Directive is more a:

Solution

Problem

Other

Explain

WFD is important because it obliges environmental managers and politicians to consider the ecological status of water masses. It is probably really very difficult in many cases to fulfill the WFD requirements at reasonable costs. Anyway, the Corsican situation is particular because of its high level of preservation and its general good ecological state. Fulfilling the WFD requirements is probably possible except in some rare cases here.

DRAFT