

How necessary are ICM-labeled tools in addressing integration issues ?

Case study on the Bay of Brest (France)¹

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The implementation of Integrated Coastal Management (ICM) meets many obstacles in practice, often due to the difficulties of collective action in favor of the environment. Therefore, the study of organizational forms of integration, and the understanding of how they actually work, is fundamental for the analysis, assessment and improvement of coastal management systems.

Within this framework, one of our central emphasis is on the need to clearly distinguish on the one hand the goals to be reached (the qualification "more or less integrated" is used as a criterion to assess the achievements of the management system as a whole), and on the other hand, the means (organizations, procedures, public action tools) implemented to attain a more integrated management. These

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This presentation on ICM organizational tools is based on a case study we have recently carried out in the Bay of Brest (Rade de Brest) and its watershed, on the French Atlantic coast. The different integration tools used on this site are analyzed with regard to their real role in the resolution of concrete integration problems experienced by local stakeholders. We then proceed to draw practical and theoretical conclusions on the respective contributions to integrated coastal management of specific ICM mechanisms and of other forms of public action.

Keywords ICM, implementation, management tools, Bay of Brest

Introduction

The implementation of Integrated Coastal Management (ICM) meets many obstacles in practice, so that it was admitted during the Global Conference on Oceans and Coasts at Rio+10 (Paris, December 2001) that “promises of ICM are not being achieved”. This must lead to put the focus on implementation issues. We still share the belief asserted by Margerum and Born (1995) several years ago about integrated environmental management, considering that “the literature lacks a response to what is perhaps the most vexing and significant question”, which is “how does one actually manage an ecosystem” (Dodge & Biette, 1992). In particular, we believe that the study of organizational forms of integration, and the understanding of how they actually work, is fundamental for the analysis, assessment and improvement of coastal management systems (Billé, 1999 ; Billé & Mermet, 2002).

Within this framework, one of our central hypothesis in this paper is on the need to clearly distinguish on the one hand the goals to be reached (the qualification "more or less integrated" is used as a criterion to assess the achievements of the management system as a whole), and on the other hand, the means (organizations, procedures, public policies, management tools)

implemented to attain more integrated management. These means appear to be extremely varied, with only part of them being specifically designed with integrated coastal management in mind.

This paper aims at analyzing how the different kinds of tools are combined and how the management systems they compose succeed or fail in resolving concrete integration problems. In particular, we shall draw on a case study we conducted in 2001 in the Bay of Brest (*Rade de Brest*) on the French Atlantic Coast, to understand how necessary ICM-labeled organizational tools are in addressing integration issues. We will first present the Bay of Brest and its watershed, before briefly describing the varied public action tools available for environmental management and analyzing the local ICM experience. We will then proceed to draw practical and theoretical conclusions on the respective contributions to integrated coastal management of specific ICM mechanisms and of other, more sectoral, forms of public action.

Presentation of the Bay of Brest and its watershed

Geographical information

The Bay of Brest and its watershed, at the far western end of Brittany on the French Atlantic coast (see Figure 1), cover a 2800 square kilometers area, including 180 square kilometers for the bay (*Rade*) itself. The area gathers 137 municipalities from three counties (*Départements Finistère, Côtes d'Armor and Morbihan*), with about 360,000 inhabitants. Two main rivers run through this area and flow into the Bay of Brest : the Aulne and Elorn, both having several tributaries.

Economic activities

Intensive agriculture and farm-produce industry represent an important economic sector of this rather rural region. It is particularly well-known for intensive breeding of cows and porks,

while crops are almost exclusively dedicated to cattle feeding. The Bay of Brest also shelters the French army naval base of the Atlantic coast, being therefore one of France's main defense industry spot. An important civil harbor is devoted to trade, shipbuilding and ship repair. Inside the Bay, fishing is only residual but scallop fishing is emblematic and is part of the local cultural heritage, as well as oyster and mussel farming. Finally, coastal tourism, associated with bathing and a variety of water sports, is noteworthy.

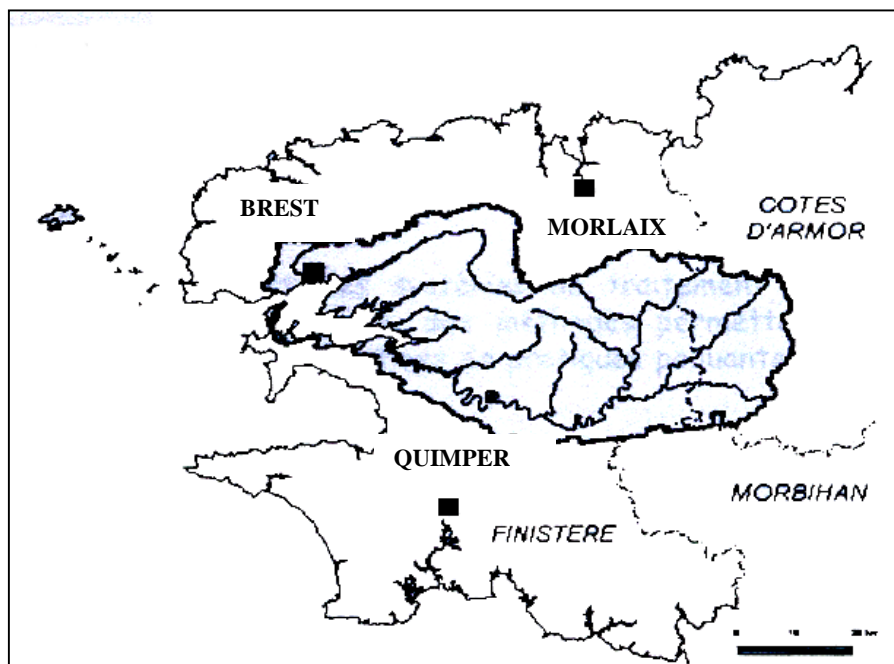


Figure 1. Map of the Bay of Brest and its watershed

Main environmental issues

There are numerous environmental issues concerning the Bay of Brest and its watershed, among which few may be neglected. However, we shall concentrate in this paper on four of these issues, which appeared crucial through the interviews we had with a majority of local and regional stakeholders, and which are all part of the official targets of the Bay Contract (Troadec & Le Goff, 1997).

Firstly, urban and semi-urban sewage take part in the Bay water pollution, because of a lack of decontamination plants. Secondly, TBT (tributyl tin) contaminates the Bay as a component

of anti-fouling paintings used on ships hulls. This chemical is highly toxic as an endocrine disrupter for all living organisms in the Bay, even at low concentration levels. Thirdly, the management of the scallop fishery has been an extremely challenging problem for a few decades, with stocks quickly decreasing to reach an unsustainable level in the eighties. A few climate accidents in the sixties followed by three decades of over fishing clearly accounts for the resource decline, along with the ecosystem invasion by a species of shellfish called *crépidule* (*Crepidula fornicata*) which competes with scallops. Concerning this scallop crisis, the role of chemical and organic pollution is still quite controversial. Last but not least, agricultural waste is a major source of pollution for most ground waters and rivers in the watershed, and consequently for the Bay itself. This concerns pesticides on the one hand, and nutrients on the other, like phosphorus and nitrates coming both from fertilizers and from cattle manure. Nevertheless, ground water is supposed to provide drinking water to a majority of cities and villages in the area : this explains why water bills are there among the highest in France.

A variety of contrasted public action tools for environmental management

To face these issues which are quite common in France and Europe, a wide range of public action tools are available. They are so numerous that we can not describe them all in this paper. However, we shall classify them in three categories and give illustrative examples of each, before justifying our classification at the end of this part.

"Classical" tools

This category gathers an extremely high number of different tools which are rather sectoral, that is to say that they aim at integrating the environment in each sector of activity. Fisheries are regulated by rules, licenses, quotas, etc., industries by a set of rules and standards regarding pollution and waste, while agriculture effluents are supposed to be limited by the

European Directive on nitrates and by several national (PMPOA², CTE³) or regional (BEP⁴ 1 and 2) programs. Regional and urban planning benefits from many specific tools like POS⁵ and the Littoral Law (*Loi Littoral*). Environment itself is managed in part by sectoral rules regarding nature conservation, such as the Natura 2000 network, ZNIEFF⁶ and ZICO⁷ surveys, and Natural Reserves among others.

A complete list of all the sectoral tools included in this category and taking part in the environmental management of the Bay of Brest and its watershed is impossible to draw (one single fishery on the French Atlantic Coast can be ruled by up to one hundred different legal texts), but this is enough to remember that environmental management on the French coast is firstly the target of a set of such “classical” tools.

Non coastal-specific collective action and integration tools

Tools in this category can be designated as Integrated Environmental Management ones. They are not coastal-specific but as they apply to the whole French territory, they are relevant in coastal areas as well as inland. For example, the SDAGE⁸ Loire-Bretagne (Comité de Bassin Loire-Bretagne, 1996) and its associated SAGE⁹s tend to implement Integrated River Basin Management, the Armorican Regional Natural Park and the Iroise National Park project promote sustainable development in two rural areas partly covering our area of interest.

² Agricultural Pollution Management Programme (*Programme de Maîtrise des Pollutions d'Origine Agricole*)

³ Exploitation Territorial Contract (*Contrats Territoriaux d'Exploitation*)

⁴ Brittany Pure Water phase 1 and 2 (*Bretagne Eau Pure*)

⁵ Municipal Zoning Plans (*Plans d'Occupation des Sols*)

⁶ Natural Area of Ecological, Faunistic and Floristic Interest (*Zone Naturelle d'Intérêt Ecologique, Faunistique et Floristique*)

⁷ Important Areas for Birds Conservation (*Zone Importantes pour la Conservation des Oiseaux*)

⁸ River Basin Master Plan (*Schéma Directeur d'Aménagement et de gestion des eaux*)

⁹ River Basin Plan (*Schéma d'Aménagement et de Gestion des Eaux*)

ICM-labeled organizational tools

France has no Integrated Coastal Management policy or program as such. However, Bay Contracts (*Contrats de Baie*), developed within the Water Law framework, are usually considered as ICM tools. In particular, the Brestian Bay Contract is seen as a model for the whole coastal zone.

This classification in three categories may seem, with good reason, somehow artificial and even unclear. Indeed, there is a continuum between categories, most tools being mitigated and their characteristics shared between two or three categories. Nevertheless, it is useful to distinguish between tools for two reasons. Firstly, there is an obvious – though often complex to precise on a case by case basis – contrast between approaches that are multisectoral and promote participation of and negotiation with all stakeholders, and those more classical like norms, national laws, or orders of the prefect. But secondly we can consider that beyond this difference in the nature of tools, there is an even more noticeable gap in their perception by local stakeholders. For example, the Littoral Law can belong both to the first and third categories : it can in particular be seen as intensely negotiated by different groups of interest before its promulgation, and after that during its implementation. For instance, the definition of "remarkable areas" in each coastal municipality is based on a dialogue between the prefect and the municipal authorities concerned (Lascoumes, 1995). Moreover, several notions are not clearly defined in the law – such as "seashore close areas" (Frangoudes & Prieur, 2000) – in order to keep it adaptable to local situations. On the contrary, being a national law, the Littoral Law is almost unanimously viewed (except by environmentalists) as centralized, technocratic, unilaterally conservationist and anti-developmentist.

An emblematic and ICM-labeled tool : the Bay Contract

Presentation

The Bay Contract (*Contrat de Baie*) is a contract between political bodies at different levels (the State, the Brittany Region, the counties of Finistère and Côtes d'Armor, the Brest Urban Community (CUB) – a group including Brest and surrounding municipalities, all the municipalities and intermunicipalities of the area), specialized bodies like the Water Agency, professional organizations, and NGOs. The contracting parties commit themselves to participate in an ambitious Integrated Coastal Management program aiming at restoring and managing the quality of the water (sea and rivers) and ecosystems. The Brest Urban Community has been chosen to be the program manager.

Activity

The Bay Contract is a 3-stage program. From 1992 to 1998, a complete 3 million Euro assessment of the situation was carried out (Troadec & Le Goff, 1997), while pilot projects were implemented (for 6 million Euros) and priority actions defined for the next stage. From 1998 to 2002, actions previously prioritized are implemented, environmental information is gathered, organized and edited, and special emphasis is put on communication. The last stage, from 2003 to 2007, should achieve what is being initiated during the second one.

Within this framework, activity during the second stage is described as follows :

- Ecosystems restoration, through water treatment, decrease of polluting fluxes, etc. (113 million Euros) ;
- Nature protection and preservation, thanks to better management of fisheries, rivers maintenance, etc. (9 million Euros) ;
- Consciousness raising, information, education (1.5 million Euros) ;

- Integrated management : evaluation, monitoring, coordination, Bay Contract management (4.5 million Euros).

It is important to notice that the Brest Urban Community, as a program manager, only manages in fact 14 million Euros out of the total funding of 128 detailed above. Indeed, most of the actions prioritized and programmed in the Bay Contract are independent from it. They were often planned years before the contract was even signed, and are monitored by their own managers. Because it is the integration agency, the CUB is supposed to coordinate these projects which however remain legally independent. Therefore, the CUB really acts as a project manager only for very limited – though crucial – actions : production and spreading of information and scientific knowledge ; animation and consciousness raising for stakeholders ; making people aware of what is at stake through education.

Combination with other environmental management tools

The type of actions the CUB undertakes within the Bay Contract framework may turn out to be essential to the success of other projects. The scientific knowledge acquired during the first stage is unanimously considered as extremely useful and of high quality. Moreover, the desire to progress through a participatory and negotiated approach spreads consciousness and confidence among stakeholders and the population. It may become possible then to improve the Bay of Brest management *with* the support of stakeholders instead of *against* some of them.

However, from the point of view of environmental problems to be managed and solved, it must be admitted that in practice the Bay Contract role is manifestly limited. The improvement in the short and middle run of environmental quality depends on the completion of actions that are not controlled by the Bay Contract, regarding in particular agricultural and urban sewage, TBT use and the scallop fishery. As explained above, the Brest Urban Community manages the Bay Contract program, but not each of its component. Hence, the

goal of the program is officially to get stakeholders to abide to the rules which apply to them. But for this purpose, the CUB has no incentive nor pressure means, except as regards the environmental information it communicates to the public.

As a conclusion, the expected integrated coastal management of the Bay of Brest highly depends on classical and sectoral tools. Therefore, the achievement of the Bay Contract goals will be possible only if these tools, which existed before it and/or are independent from it, prove to be effective.

Diagnosis of the resulting management of the Bay of Brest

It might be interesting now to see how this complex management system works in practice, that is to say what effect it has on the main environmental issues we selected.

The urban water treatment is clearly improving. For many years now, several plants have been built and some are still under construction. Municipalities are generally quite involved to try and comply with the national and European standards. Current efforts are somehow artificially included in the Bay Contract program but result from an older, wider and independent process.

The scallop resource is now quickly increasing in parallel with the captures by fishermen, despite the still invading shellfish named *crépidule*. The new hatchery, funded by the Bay Contract, is largely responsible for the better situation, along with improved collective action among fishermen. On the contrary, pollution has not decreased but it does not seem to be much of a handicap for scallop growth. The problem was in fact sectoral, limited to one category of stakeholders (the scallop fishermen), and was solved in a sectoral way thanks to the Bay Contract funding opportunities.

In accordance with international guidelines, the use of tributyl tin has been limited by the law in 1992 : it is forbidden on ships shorter than 25 meters. This solves the problem for the yachting harbor and partly for fishing boats, but hardly concerns the naval base and the trade

harbor, which both shelter very large ships. This issue has kept unchanged since 1992 through the Bay Contract until today.

Finally, agricultural sewage remains the main issue in the studied watershed. The European Nitrate Directive is not enforced, nor are the national goals defined by the government neared. PMPOA, BEP 1 and 2 suffer from chronic inefficiency (Benetière *et al.*, 1999), and CTE tend to have extremely poor environmental ambitions (Pierre, 2000). Bay Contract managers are totally helpless to gain progress in this field, and it will remain so at least until existing rules are enforced.

Discussion

Are ICM-labeled organizational tools useless ?

From what we have observed, the Bay Contract does not seem to be very useful in practice to manage environmental problems. When it is, it is not so much thanks to its ICM approach as to the funding opportunities it conveys. Shall we conclude that ICM-labeled organizational tools are useless compared to classical ones ? The answer is no. ICM organizational tools have several specific qualities, among which :

- They generally start with a study stage to carry out an assessment of the situation. This often appears to be a most critical dialogue basis for stakeholders.
- Stakeholders typically acquire a common knowledge of problems, sometimes a common culture, and better relationships with each other.
- Insurmountable scientific uncertainties about different strategic issues may be discussed, for example about the frequently complex link between environment quality and health.
- Time and money usually wasted in trials are partially spared when ICM includes Alternative Dispute Resolution.

- ICM tools normally allow to adapt to each case.
- Innovative and efficient solutions sometimes come out of meetings, participation, dialogue, interrelationships, thanks to a sort of collective creativity.

The Bay Contract more or less confirms the first three qualities. The fourth one is difficult to assess because we can not say anything about trials that could have occurred but did not. However, different cases have been taken to court recently in Brittany concerning water quality. The last two other potential qualities are not truly observable here. Indeed, the Bay Contract can not adapt for example to the Bay-specific TBT situation, yachting being a minor source of pollution there compared to trade and naval ships. The inefficiency of a national law is therefore not overcome by local dialogue. And as far as the agricultural issue is concerned, no innovative solution at all seems to come out of participation, dialogue and consciousness raising, at least in the middle run.

Some weaknesses in the Bay Contract design ?

The Bay Contract seems to lack some enforcement power, so that we can wonder whether it is due to design problems. Cicin-Sain and Knecht (1998) consider that an integrating agency "should have the following attributes :

- It must be authoritative ; that is, it must have appropriate legal/legislative authority.
- It must be able to affect the activities of all agencies and levels of government that have decision-making authority relative to the coastal zone.
- It must be seen as a legitimate and appropriate part of the process.
- It must be capable of making "informed" decisions ; that is, it must have access to appropriate scientific and technical expertise and data."

Obviously the CUB, as manager of the Bay Contract, does not fit the first two criteria, and hardly the third one (farmers from inland find it too "coastal"). Hence, we can of course assert that the program could have been better designed and it is probably partly true – it is always

true. Anyway, our intention in this paper is to point out that even the best designed ICM tool will never fit Cicin-Sain and Knecht criteria, which constitute guidelines, a model or a sort of checklist to refer to. Wanting to create such an agency or program is as if you supposed the problem was solved. The problem is therefore elsewhere, which means that ICM efforts necessarily imply broader action than the one of the integration agency, and also wider success and evaluation.

Specific qualities but shared limits

We have mentioned some of the specific opportunities ICM organizational tools can offer, part of them being illustrated by the Bay of Brest and its watershed. However, a great range of problems that classical tools are unable to solve are not better managed after the creation of an ICM agency and/or program. Generally speaking, that is because all tools share common limits related to the difficulties of bringing change to a complex management system.

Integration always means resolving or managing conflicts, and for this ICM-labeled tools can be efficient. But it is at the same time supposed to solve the environmental problem finding expression in the conflict, which is slightly different. Therefore, ICM means changing a situation, but for this purpose the process usually depends on the same people, the same stakeholders with the same interests, and stable political and administrative organizations that have been participating in the unsatisfying situation for years. Hence, ICM tools are useful only for the change they can bring in an unsustainable situation : this should be the main criterion to design and evaluate them. Finding appropriate organizational arrangements to achieve this represents a most exciting challenge, to which no *one-size-fits-all* response will ever be available.

As a conclusion, the case study we conducted justifies our initial emphasis on the need to distinguish between :

- assessing a complex management situation to answer the question : how far is coastal management integrated in such or such area ?
- assessing an ICM agency or program working on this area.

We have to remember that Integrated Coastal Management does not only depend on ICM tools, but mostly on an extremely varied range of tools. Integration is hardly reachable without success of a majority of them. All environmental management tools in coastal areas are Integrated Coastal Management tools, with only a few of them being ICM-labeled.

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