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Hydrology and Earth System Sciences Discussions

Interactive comment on "The co-production of a "relevant" expertise – administrative and scientific cooperation in the French water policies elaboration and implementation" *by* J. F. Deroubaix

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Response to referee 1:

"One gains a general sense that policy is improving, but one certainly does not learn what makes for good policy in any particular case"

Actually, it is not the purpose of the paper to assess the various contents of the considered policies. The point of view is more to analyse these policies taking into account their procedural rather than their substantial aspects. By its "procedural" aspects, we

mean the way the subject of these policies was formalised and the consequences it had on the implementation of corresponding public programs. We do think (as mentioned in the introduction p. 3774, line 4 and 5) that this specific point of view is the only way to avoid an endless controversy on what should be considered as integrated or not in the French water management. Such a discussion, we consider it relevant in the public policy evaluation field and leave it to the professionals.

"If we think of three universes 8211; (1) the set of ecological problems, (2) the tools that can be applied to address them (technical, regulatory, and economic), and (3) the set of actors that may be involved, with their distinctive interests and perspectives, one imagines that to reach solutions it would be helpful to understand the characteristics of each universe. What works for rivers may not work for wetlands"

The research presented in the paper tends to demonstrate that the tools which can be applied to address ecological problems are directly linked with the features of the intellectual and political communities formalising the problems. The main learning from this research is that the mobilisation processes of these communities should be more taken into consideration in order to understand the characteristics of water management in a national context. The paper focuses on the existence or lack of such communities, the constraints encountered in their construction simultaneously to the methodological choices made in order to raise and formalise a subject of public policies. These constraints and these methodological choices determine the various opportunities for public action. For example, relying on the two case studies of wetland and river flow management, we point that the main dilemma for scientists and administrative agents is whether, to produce a very complex and scientific analysis of a problem associating a "happy few" stakeholders (choice made in the case of the river flow management), or to open widely the formalisation process, using a smart and simple evaluation methodology, but taking the risk to keep this issue controversial (choice made in the case of wetland management). As our purpose is not to determine the best policy instruments to manage ecological resources (point of view favoured by the referee: "[Ecological] re-

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sources are generally public goods harmed by unintended consequences of activities with other purposes. The general question, then, iswhich harms should be reduced, how much, and by what means"), we claim for the right to compare various subjects in the field of water management. What works for rivers may not work for wetlands. We certainly agree on that; but there is a common learning which can be deduce from the comparison of the mobilisation processes and methodological procedure adopted for each topic.

Response to referee 2:

- (1) The first occurrence of PIREN page 3777 (note 3) should be developped (it is, but only page 3788) ; Added to note 3, page 3777: "The program on hydro systems took place after a set of quite similar programs (since 1978 and the first PIREN, an Interdisciplinary Research Program on the river Seine bringing together scientists and a wide range of concerned stakeholders). For a more detailed description of the co-construction of an environmental research policy in France, see Neboit-Guilhot and Davy (1996).

- (2) The discussion about the development of new modes of public action at the very beginning of the paper could be completed with more detailed bibliographical references. Added to the paper: Page 3772, line 23: "New modes of public action have been experimented these last decades, essentially oriented towards the search for a consensus among the concerned social groups and a good balance between the economic and social interests impacted. This evolution is particularly evident in researches focused on the transformation of the role of the central State (Duran and Thoenig, 1996; Leca 1996). This transformation led to new interactions between the central State, the local governments and private actors such as non governmental organisations. Negotiation, partnership and contract constitute new modes to build the "common good"; and to conduct public policies. Environmental policies are probably the most advanced field of experimentation of these new ways to conduct public policies which can be referred to under the key word "integrated management"; (Callon,

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Lascoumes and Barthes, 2001; Lascoumes and Le Bourhis, 1998)". Page 3773, line 23: "Public authorities tried, in particular, to involve the general public while turning towards new modes of research, no more based on specific knowledges raising the issue of interdisciplinarity (Nelkin, 1992)".

- (3) The very definition of what should be understood by "political community", its frontiers, etc, could be explicitely mentioned. Precised all along the text

- (4) Page 3779 - 3780 : The process of construction of a demand of research in the name of potential users is not clear. Who makes this demand visible ? How ? Where ? Page 3880, line 6 we added: For instance, no representative of local governments (regions, counties or municipalities which play a key role in France in the planning and in the management of the water resource and of the hydrosystems), nor representatives of the fishers or of the consumers, nor professionals of the drinkable water and sewage sectors were involved in the definition of the "social demand"; of research. Except in the restitution conferences, organised at the end of the programs, more widely open to all types of actors, there were the members of the intellectual community (scientists and administrative agents) who expressed themselves in the name of these users and formalised this "8220;social demand".

- (5) Actually, the reasons why the building of political communities concerning the case of wetlands was possible, whereas not in other cases, remain quite unclear. This point should be addressed more directly, and the core of the demonstration should be sum up, at the end of the article. We added in line 15, page 3785: "In both cases, there were scientists and administrative agents, taking the opportunity of policy evaluation procedures, to build political communities. In the case of the wetlands, civil servants from the Ministry of Environment, in collaboration with scientists (mostly belonging to the Museum d’Histoire Naturelle and to the Centre d’Etude des Systèmes Fluviaux, and for some of them linked to non governmental organisations in the field of environmental protection) decided to use the evaluation procedures institutionalised since 1990 . In the case of the river flows, there were the civil servants from

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the ministry of environment, together with the scientific experts from the CEMAGREF who decided not only to assess the legal river flows stated by the law but also to open a discussion on the relevance of adopting variable flows according to the river regime. These political communities produced a rather integrated expertise integrated, opening a new space for negotiation. The characteristics of this negotiation were directly linked with the methodological choices used to build the expertises".

We added in the conclusion: "These groups took the opportunity of the procedures of public policy evaluation (institutionalised by that time) to build political communities that were able to produced rather integrated expertise" (...) "The political public policy communities studied in the third section of this paper are of course much more subject to changes than the intellectual public policy community studied in the previous section. It was precisely the aim of the scientists and administrative agents involved in the two policy evaluation to integrate new stakeholders. By the way the procedures of expertise got more complex and negotiation could occur. In the case of river flows, the difficulty was to integrate new stakeholders able to discuss the modelling assumptions. In the case of the wetland management, the challenge is more to keep the stakeholders associated at the origin of the procedure within the community, in order to make them accountable for their activities".

- (6) Finally the link between political community and political opportunity is not clear. Is the first one an element of the second? Or can we speak of a political opportunity as soon as a political community does exist ? In this last case, should not we speak of "policy window", rather than political opportunity? There is no direct and causal relation between the structure of political opportunities (SOP) and the existence of a political community. Nonetheless, the SOP can impede or foster the construction of a political public policy community. In the case of eutrophication, the SOP rather impeded the construction of a political public policy community which could have produced an integrated expertise. The case of eutrophication clearly shows that the existence of a policy window is not a sufficient context for the settle of one of these political communities. To

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make this clearer, we added line 7, page 3784: "A policy window was opened during the late eighties due to the commercial controversy on harmful effects of detergents on the environment. Both the environmental and agricultural administrations were involved in the controversy but none of them tried to settle a political public policy community (including at least civil servants from various administrations and scientists from various disciplines) which could have produced an integrated expertise. The one who took the most important advantage of this policy window was probably the industrial sector of sewage which was able to propose to the municipalities, responsible for cleaning waste waters, the adequate processes (previously developed for drinkable water production). In the case of eutrophication, the lack of political public policy community, due to the structure of political opportunities (share of the responsibilities between the Ministry of Environment and the Ministry in charge of Agriculture, existence of the water agencies which “monopolised” the problem and reduced it to a problem of loads of Nitrogen and Phosphorus that could be regulated through a system of fees and subsidies) led to a lack of integrated expertise and probably to the condemnation of France by the European Court of Justice (23 September 2004) for its "narrow" definition of the sensitive areas in various basins (Seine-Normandie, Artois-Picardie, Loire-Bretagne and Rhône- Mediterranée-Corse) and the insufficient standards of treatment in more than 100 agglomerations".

Response to the editor comments.

Most of the general comments have led to substantial changes in the manuscript. However, we list here the answers given to the more specific comments:

- (1) The bibliographical background is not strong enough: see for instance R#3 about modes of public action - and the same could be argued for various aspects of the paper that is not strongly enough connected to the scientific context (for instance about integrated management). Concerning the new modes of public action see response to comment n°2 of referee n°2.

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- (2) "Generally the paper is too much affirmative and not enough demonstrative; as a result it is from time to time unclear (see both R#1 and R#3) or not scientifically convincing (R#1). The empirical material should be used in order to better demonstrate the affirmations. That means that the paper should be extended (around 50%) in order to give the full scientific argument and demonstration together with their empirical evidences (remembering also that HESS is an international journal). I just take as an example pages 3777 and 3778:

2.1 "the researches conducted aimed at understanding the relations between the environmental elements and the induced risks rather than elaborate environmental protection strategies." What were those researches? What size? What aim? Etc. This contextualisation seems important too better understand the author’s point”. P. 3776, we changed the lines 24 and 25 for "This group launched during the late nineties seven 7 different interdisciplinary programs of researches (involving each of them 5 to 10 different researches during a period of several years, 4 years on average): the first program dealt with the economic benefits due to hydrosystems; the second with the flooding risk; the third one was about the biodiversity and the functionalities it could played in the continental ecosystems; the fourth one was on the biological parameters; the fifth on the management of wetlands; the sixth one was dedicated to radars and their possible uses in weather forecasts; while the seventh one aimed at coordinating existing and future research in specific areas".

2.2 "The first significant characteristic of this intellectual community is therefore that all its members shared a strongly structured definition of the environment. The environment being studied was and had to be human centred." This is interesting, but what does prove this? How is it expressed by the researchers themselves? Is it implicit or explicit? We added page 3777, line 18: "The claim for such a vision of environment and environmental sciences was a way to set a clear frontier for this intellectual policy community. The various calls for proposals were very explicit on this way to consider environment and interviews revealed that scientists strongly agreed on it".

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2.3 "This is even more important as the second characteristic of this network was that its members viewed the research as the result of the meeting of a social demand and a supply of science." Be more explicit. How was it expressed? How did the hiatus between this point of view and the previous one express? Was it controversial? Etc.

We changed the paragraphs from page 3777, line 22 to page 3778, line 13. and added: "and the GIP was presented itself as the place were the meeting was made possible. The institutional building of the group was thought in order to perform this meeting. Two bodies ruled the GIP-Hydrosystems: an administrative board and a scientific council. Representatives of the administrations together with scientists were placed in the situation to tell the best way to answer the scientific demands of the society. As we will see, what occurred there was more complex than the official presentation done by scientists and administrative agents. It was a pragmatic coordination of the existing structures of research on the environment. One of the main innovations of this program was the experimentation of a territorial organisation of the research on hydro systems and especially the one on wetlands. Several watersheds were chosen as priority areas for research and observation. The researches used hydrology, biology, chemistry, but also social sciences. Moreover, they had the objective to put into coherence the newly produced data with the existing ones. One can, then, say that there was a clear political willingness to bring more coherence in the available expertise, useful for the elaboration and implementation of the public programs. At the same time there was a necessity to separate the activities of research and the ones of government. This appears clearly when looking at the institutional building in this network: two councils officially ruled the program, one administrative and the other scientific. Further investigation showed that both councils were mixed and characterised by a mere representation of the administration. The administration board was composed of the representatives of the main research organisations working on the subject of continental waters (10) and of the Ministry of Environment (2) and the Ministry of Research (1). This administrative board was characterised by a "representative" legitimacy. Its members represented the organisation they belonged to. The scientific council, on the contrary, was characterised

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by a legitimacy based on scientific knowledge. Its members, mostly researchers but also civil servants from the Ministry of Environment and the Ministry of Public Works, were designated by the administrative board, but were considered as totally independent from their research centre or administrative department. In these conditions, it was not very surprising that the coherence in between the researches was in fact built afterwards".

2.4 What was the purpose of the research program on wetlands? What was the problem with wetlands? We suppressed footnote n°4 and added in the core of the text: "The case of the research program on the wetlands was very emblematic of the common concern of the researchers and of the administrative agents in this intellectual community. It has to be a bit detailed in order to understand its characteristics, both interdisciplinary and prescriptive. Wetlands was an old subject of research for scientists working on this issue, but the way to characterise them as potential "natural infrastructures" (e.g. territories which could be useful for flooding protection, diffuse pollution abatement, etc.) was quite an innovative point of view. From a public management point of view, these wetlands were a new object of concern. The Law on water management of 1992 stated for the first time that their existence should be preserved, without creating any specific policy instruments. Therefore this program of research on wetlands management was probably the most interdisciplinary one and was clearly oriented towards a prescriptive objective: as the call for propositions mentioned "The program should enable the deciders to design and validate methodologies for protection, management or restoration of wetlands". This prescriptive objective was explicitly present in some of the funded researches such as the one aiming at elaborating the rules of management of the superficial waters in order to promote an integrated development of wetlands boarding the Atlantic".

2.5 The two councils: why two, was it a new way of management, how were they supposed to work and how did they, why did their composition differ from the theoretical one? What does it demonstrate? OK, see 2.3

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2.6 Types of knowledge more funded than others: why? What does it reflect regarding the topic of the paper? Page 3778, line 17, we suppressed (hydrology and biology for natural hard sciences and economy for social sciences) and added: "Among the seven programs only one was exclusively devoted to social sciences and more precisely to economy. Three of these program could be considered as multidisciplinary or interdisciplinary and three others exclusively involved biologists, hydrologists, geologists, and engineers with various backgrounds (chemistry, mathematics…) It is important to take into account the financial dimension in order to analyse to what extend the intellectual policy community here considered succeeded in promoting a new mode of research. Definitely, the repartition of the subsidies within the various programs revealed that the opportunities of dialog and cooperation between the disciplines were not so important"

2.7 Why is modelling a consequence of prescriptive dimension? Isn't it possible to have a prescriptive approach without modelling (my answer should be yes). We changed the sentence line 19 to 21, page 3778: "Nonetheless, all these researches had in common a prescriptive dimension (rather than a descriptive one) and the researches involving modelling tools were preponderant. Of course, prescriptive results were not inherent to the modelling tools and the most prescriptive research program, the one on wetland management, did not involve such tools ; but the way these modelling tools were to be used, not only to formalise "natural" processes but to predict trends resulting from pressures on hydrosystems, should have led to prescriptive results".

- 2.8 Conclusion: As case studies are not clear and well-argued enough, they don’t scientifically justify the conclusions. In addition, the absence of definition "integrated management" (even smooth or carefully exposed) at the beginning of the paper is quite embarrassing, all the more so since "integrated expertise" is defined in the conclusion. We added: - Page 3775, line 5: "In order to suspend such a controversy, we can temporarily define integrated management as a type of management aiming at satisfying all kinds of needs by limiting the competition between the various

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uses and protecting as strongly as possible the environment at an acceptable cost for the community (Valiron, 1984). This aim necessitates a decision making process which enables, through a negotiation, a common understanding and an integration of the various interests of the concerned stakeholders (Mermet, 1991)".

3 - Specific remarks: English should be improved, and in particular the choice of tense (please use preterit or other past tense for past facts, events and discussions). OK, it has been changed.

Added in the bibliography :

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