Social Learning Pool of Questions

An instrument to diagnose
Social Learning and IC-tools
in European River Basin Management

HarmoniCOP combined WP2/WP3 deliverable
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Marc Craps & Pierre Maurel, editors
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K.U.Leuven – Centre for Organizational and Personnel Psychology
Cemagref, Montpellier

www.harmonicop.info

PREAMBEL

The European Water Framework Directive implements the principle of Integrated Water Resources Management at basin scale. Integrated water resources management requires that water users are involved in the governance of the resource and that policy planning and implementation are based on integrated solutions The WFD even prescribes public and stakeholder participation in the development and implementation of a management plan. However, views about the nature and role of participation vary widely.

The HarmoniCOP project puts the concept of social learning into the centre to understand role and nature of participation. This is quite an advanced concept of participation building on social interactions between individuals, stakeholder groups and the public at large at different scales. It implies that the relational dimension of human interactions, the ability of stakeholder groups to communicate are instrumental for tackling complex tasks such as developing an integrated management plan. The social learning concept serving as base for the pool of questions integrates insights and experience from processes of multi-party collaboration in small groups into the larger context of social learning of a whole network of stakeholders in a river basin. The development of this pool of questions was a major challenge and a process of social learning for the participants of the HarmoniCOP project as well. Scientists with very different disciplinary backgrounds worked over the past months on a joint product to put the social learning concept into practice. The pool of questions provides the conceptual background for and practical guidance to investigating requirements for and effects of social learning and the role of IC-tools in a number of case studies.

I would like to thank all participants of work packages two and three of the HarmoniCOP project for their commitment and enthusiasm that resulted in this excellent and innovative guidance on social learning.

We thank the European Commission for the financial support and the opportunity to pursue this challenging research with high practical relevance.

Claudia Pahl-Wostl
Coordinator of the HarmoniCOP project

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INTRODUCTION

The prime aim of this "Social Learning Pool of Questions" is to provide the teams of HarmoniCOP WP5 with a checklist of questions concerning Social Learning and IC-tools, as a common base upon which they can build their case studies. Further it is intended as an input for the manual on "Public Participation (PP) and Social Learning (SL) for River Basin Management (RBM)" that will be produced by HarmoniCOP.

The Pool of Questions (PoQ) is intended to serve as a guide when preparing to interview stakeholders, to observe meetings, to consult archives or to evaluate Information and Communication (IC)-tools. Researchers should select a number of questions and adapt these according to the characteristics of their case and their case study, e.g.:
- o the nature of the case study, e.g., historical versus real-time analysis;
- o the scope of the case study, e.g., a global overview of all projects in the entire river basin, or a local perspective on a single project;
- o the type of involvement of the researcher, e.g., as an observer or as an active participant;
- o the kind of person that is interviewed, and his/her relationship with the case under study; and
- o the setting in which the interview takes place

The structure of the Pool of Questions is intended to cover the most relevant aspects of social learning in the case studies (see figure 1 for a graphical presentation). As it is the result of a concerted action among WP2 and WP3, there is a special interest in the application of IC-tools and how they affect the social learning process. It reflects the conceptual framework of SL that is further developed and scientifically grounded in an additional HarmoniCOP WP2 document. As it is meant as a practice supporting instrument we have not included bibliographical references, nor excessive conceptual theorizing. We refer the interested readers to the additional WP2 and WP3 final document

The Pool of Questions is *not* intended to be used as a systematic questionnaire, which once completed by some interviewees, will render automatically a complete case study. The researcher is advised to take into account that different information sources can hold widely differing accounts of some realities and events.

Social learning refers to the growing capacity of a variety of social actors to perform common tasks related to a river basin. It is both a process (section 2) and an outcome (section 3). One has also to know the context in which it takes place (section 1) and how the outcomes of social learning may affect this context (section 4). The graphic (figure 1, next page) highlights the mutual tuning between the social and natural system, in which IC-tools play a major role. Section 5 of the PoQ is dedicated to the description of the IC-tools that are analyzed in the other sections.
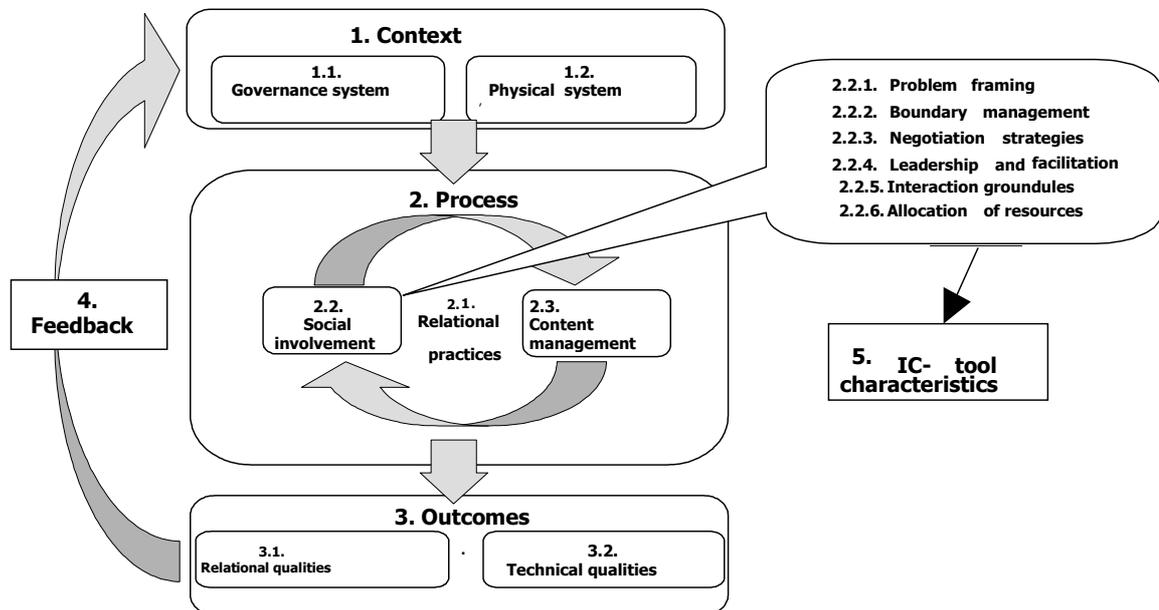
Figure 1: Graphical presentation of the social learning concept in HarmoniCOP.

The Pool of Questions consists of three layers:

What?
A list of general research questions, summarizing the main issues that have to be considered in relation to SL in RBM. The structural ordering of the questions follows the conceptual framework that is demonstrated in two diagrams. The first, Figure 1, clarifies the interrelationships between the main aspects of SL in general. The second, Figure 2, describes the process of tool acceptance in view of various factors of influence.

Why?
A short explanation of the underlying assumptions informing each of these questions. Questions are only meaningful if their implicit rationale is understood. This section is directed to the researchers who are not acquainted with the theories and/or experiences on which the questions are based.

How?
Concrete and clear questions that can be used by researchers in interaction with stakeholders. In contrast with layer 1 (the questions that researchers have for themselves related to SL), under layer 3 the reader can find examples of questions for external use. According to the situation, the person and the context, a researcher has to make a selection out of the proposed questions, adapt them, or invent additional ones. Where necessary, there is also some information on research procedures and/or tools that can be used (or that have to be avoided).
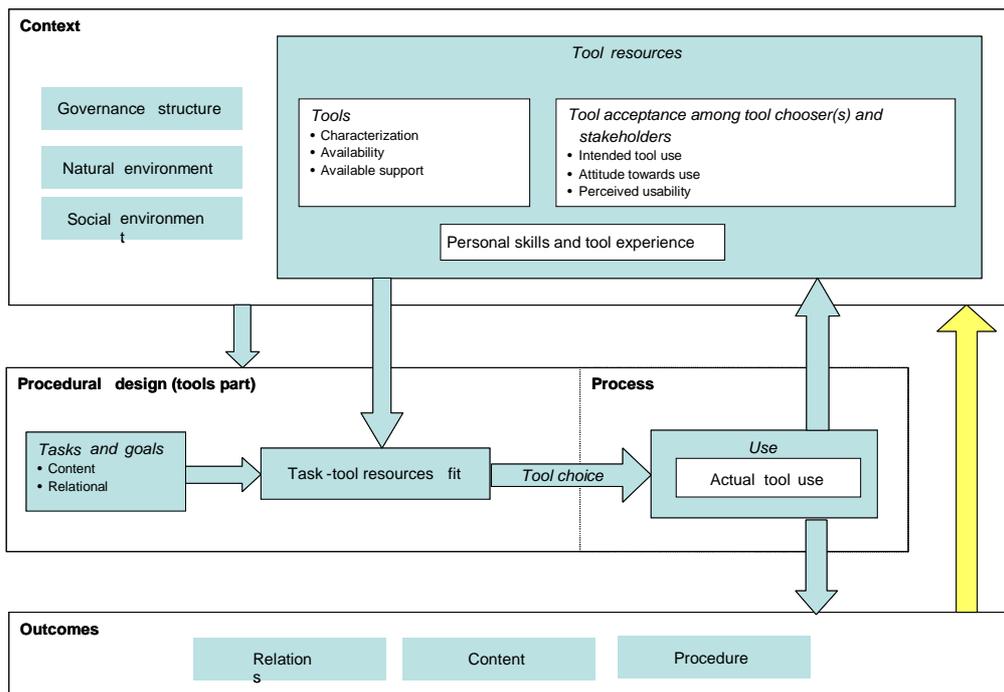
Figure 2: Tool acceptance influence diagram

This diagram helps to represent in a synthetic form the factors that may influence the acceptance of IC-tools by the different actors involved in a participative RBM process. The diagram has to be read considering SL as a dynamic cycle. An initial context of a project might be favourable to the use of IC-tools in more or less degree: importance given to ICT in the governance structure, type of environmental problem to be solved, historical and cultural collective working practices and use of ICT, list of tools available among the actors network (including the local research laboratories), actor's perceived usability, especially those who choose the working procedures and the tools to solve a particular content and/or relational task.

By perceived usability we refer to the degree to which the user expects the tool to fit a given purpose in a given context (characteristics of the physical, organisational and social environment in which the tool is used). The perceived usability predicts the attitude toward using the tool, defined as the user's desirability of her or his using the system. This attitude itself influences the individual's behavioral "intention to use the tool". In a favourable context, once a tool has been used within the SL process, it influences the outcomes, improves the users's perceived usability and therefore, their intention or not to use the tool again.

1. CONTEXT

What ?

Description of the main characteristics of the socio-historical and geographical-natural context in which the case study takes place.

First there is a series of questions on the social domain (the "governance system"), to analyze the different actors, their interrelationships and their relationship to the river basin (RB) reality. Then there are questions to provide a description of the RB and its challenges in terms of a natural system. Following the WFD, we should look to water quality, water quantity and biodiversity issues. Finally, there is a third section of questions dealing explicitly with the way the social and natural system are linked, "the social construction of a RB".

Why ?

An essential aspect of the SL concept of HarmoniCOP is the bridging of the duality between the social and the natural environment. It is about people learning how to deal with each other and their interdependance, while they are learning together to deal with the interconnected issues of their environment, in this case their shared RB system. This duality between the social and the natural system, and the interrelationships between both, is also structuring the context characterization with which case studies on SL start. The distinction between social system ("governance structure") and natural system, corresponding with one of the most common and familiar distinctions in modern-Western science and thinking, facilitates the analytical description of reality. However, we have to put emphasis on the interrelationship between both realms, to come to an understanding of SL. The social constellation of the domain influences the technical problem definitions and the other way around. Natural phenomena are not so natural as this term may suggest. They are to a high degree the consequences of human actions and through their occurance certain actors may come to the fore.

How?

This will be achieved mainly by literature review (also on the internet), including HarmoniCOP WP4 reports. Interviews (with a water authority director and/or a mediator and/or a project manager) may allow the researcher to verify the official information, and to focus more specifically on informal actor relations and opinions. For some of the questions (where this is explicitly mentioned), in-depth interviews or focus groups with some stakeholders may be necessary.

1.1. Governance system

What ?

The concept "governance system" refers to the socio-political setting that allows the effective planning and management of activities that affect the river basin. Good river basin governance is understood here as: a sustainable way of guaranteeing a good water status in the RB (according to the WFD), in such a way that all the interests and perspectives of the relevant stakeholders in the river basin are dealt with adequately, and without an excessive cost or burden for society as a whole.

Why ?

We suppose that broad social participation is a condition for, and that social learning is a process and an outcome characteristic of good governance and sustainable RB management. Governance favorable for social learning does not depend only on the legal prescriptions of public institutions, but also on the – historically and culturally informed – attitudes of all the relevant stakeholders.

How ?

Investigating a RB governance system implies a description of the different (public institutional and other) social actors, their stakes in the RB domain, and their formal and informal interrelationships in the past, and currently.

1.1.1. Stakeholders

What ?

Which actors are involved in RBM and/or are affecting the river basin in a significant way?

By the concept "actors" we refer here to all kinds of actorship (individual, institutional, informal groups) that may participate in one way or another in a multi-actor negotiated domain, like a RB governance system.

This question has in mind a general panorama of all the stakeholders related in one way or another to the RB or to a specific RB issue under study, the so-called stakeholder analysis. With this stakeholder analysis we use the broadest possible definition of stakeholdership: being involved actively or passively in the RBM domain, that means, or by actively taking part in it (supporting, or implementing, or financing, etc.), or by passively being affected by the decisions and actions of this management.

Why ?

Information on the actors' institutional type (public, private, non-governmental, voluntary, etc.), on their general mission and on their kind of stake in the RB is needed to have an idea of their current and possible contributions to the RBM, and how they can be involved in the SL process. It is definitely very different to participate as a public authority or as a member of a local pressure group (institutional type). It matters a lot if RBM is considered the core business of your institute, or just a marginal activity on which your constituency does not depend for its survival (general mission). Participation and social learning possibilities will be different e.g. for those considered guilty for certain problem situations, for the victims of these situations, and for those invited as experts, to hand over solutions (possible contributions).

An important distinction has to do with the geographical scope on which an actor is operating. This can vary from very small scale (e.g. an individual defending his backyard interest, a local neighbourhood), or extremely large scale (e.g. an international commission), but rarely it coincides with a river basin. Another relevant distinction has to do with the organizational level of the participants in a PP process. Both, geographical scope and organizational level, can complicate SL possibilities, a challenge on which we come back under 4.1.

As researchers we have to be aware that the demarcation of the stakeholder group is less evident than it may seem at first sight (or for a single stakeholder). Different stakeholders may hold very different views about which other actors have to be considered as stakeholders This is directly related to the way different stakeholders conceive of the RB, its problems and opportunities, and their contribution to it. Of course, the demarcation will affect directly the possibilities and scope for SL.

The difference between the auto-image of a stakeholder (the capacities, power, contributions and roles attributed by a stakeholder to himself) and the image that the other stakeholders hold about him is another additional aspect of stakeholder involvement that has to be inquired. Sometimes there can exist a serious discrepancy between qualities a stakeholder

ascribes to himself, and his real influence e.g. based on his power to mobilize resources or people. Such tensions will come up and have to be dealt with in the course of a SL process.

How ?

From a multi-actor perspective, there can not be one clear stakeholder demarcation. To deal with this research challenge, strategies have been developed like the so-called "snowball technique", meaning that each interviewee is asked which other actors, according to his/her opinion, are related to the RB. Then the newly identified actors are also included in the research and asked the same question. For an exploratory start of a study this technique may be too demanding and far-reaching. Nevertheless it is recommended to involve actively at least two or three persons in the stakeholder analysis, each with a good overview from sufficiently different perspectives on the domain.

Questions to identify stakeholders can be based on:

o Which actors have the capacities to promote or inhibit practices that contribute to an integrated RBM?
o Which actors have a particular expertise that can contribute to the RBM?
o Which actors will eventually be affected, either positively or negatively, by the actions or the outcomes of a RBM plan?
o Which actors have expressed a particular interest to take part actively in the RBM?

o How sure are the agencies, analyzing the stakeholder domain, on their information concerning the other actors? On what kind of contact do they build their judgment of the other actors (e.g. just externally attributed, based on former similar experiences, direct screening)?

The stakeholder information can be synthesized in an overview table, and/or graphically represented in a kind of "stakeholder map". A description of a methodologies and tools to put in practice a stakeholder analysis in the RBM domain can be found in the "Guidance on Public Participation in relation to the WFD" document (2002) and in annex 2 of HarmoniCOP WP3 report.

1.1.2. Actors involved in PP

What ?

Which actors are involved at the start of the study, or have been involved in the past, in a PP process concerning RBM?

With this question we want to clarify which actors have had the opportunity to experience an intentional PP initiative related to the river basin under study. This question has a more restricted sense as the former one, as it refers only to those actors that have been involved directly in a kind of participatory planning and management of the river basin under study. If there has not been any opportunity for PP in the past, this question can be skipped.

Why ?

There may be a wide difference between the stakeholders, the social actors with an acknowledged stake in the RBM domain (see 1.1.1.) and the actors that are currently involved in PP, who have opportunities to express their opinions and to be taken into account in the decision making. A number of reasons may account for why stakeholders have not participated in the RBM. We suppose that one of the main reasons is because there has not been adequate participation mechanisms and opportunities. But other motives have to be investigated, including: lack of skills or interest, power differences and distrust, etc.

How ?

In-depth interviews with representatives of the RBM planning (and eventually PP design) agencies are recommended. A focus group with representatives of different agencies on this topic can also be illuminating for the researcher, as well as for the group members.

- o Compare complete list of stakeholders (1.1.1.) with actors actually involved in: information – consultation – decision making.
- o Who designed and put into practice the participatory aspects of the RB planning and management?
- o Who has the competence to take decisions concerning the structure, and inclusion/exclusion of actors?
- o On which criteria is this inclusion/exclusion based (e.g. lack of interest, lack of technical capacities, avoid possible opposition, etc.)
- o Is there already a tradition of participation, or has an expert approach been dominant ?

1.1.3. Formalized and/or legal context

What?

What are the main public policies and legal standards regulating the roles of the different actors in the RBM, their relations and the procedures to be followed?

Why?

The institutional setting of RBM defines what the different actors must do, and what they may not do, specifying the functional and geographical boundaries to which these rules apply. From a SL perspective, we consider this legal setting as a reification based on conclusions of past experiences, and as a framework defining opportunities for current practices. These experiences are not necessarily locally based. Legal concepts and regulations can be inspired and brought in from outside, that means from other domains than water management, or from a different geographical, eventually international context. (The influence of the European WFD on national water legislation is a good example in this respect). The experiences and practices have to do with ways in which different actors relate with each other and with the river basin. In this section, we focus on the "reified" official/legal aspects of RBM, in the next section we turn our attention to the informal aspects, the practices in which actors have engaged. In both cases the questions should invite reflection on the opportunities for social learning.

How?

Analysis of RBM legislation; interviews with public officers responsible for RBM, and eventually with a legal expert in RBM.

- o What is the current formal network between relevant actors? Try to draw an inter-institutional map of it.
- o What is the official mandate of the different actors involved in RBM?
- o Are there commissions (dedicated to specific projects or problems) functioning at this moment? How autonomous can they work ?
- o What is the history of the legal setting in this river basin?
- o What is the relationship between the RBM regulation under study and the EU-WFD?
- o To what extent does this setting leave room for public involvement and joint reflection on RBM?

1.1.4. Informal actor relations

What?

How are the informal relations between the stakeholders in the RB before the start of the case study?

Why?

Although the legal setting defines the functional and geographical boundaries for the actors operations (see 1.1.3.), it is in the current practices in which actors participate and interact with each other, that they can give or change meanings related to the governance and natural context. Interactions are more than strictly following procedures, they always imply aspects of human relations, like trust and distrust, mutual liking and disliking, (lack of) empathy and sympathy with the other, informal coalitions, etc.

Legal rights are just one resource on which actors can rely to influence a management domain. Other resources may be, for instance:

o Financial resources;
o Expertise, academic or professional know how concerning determinate aspects. Generally expertise applies to the technical aspects of RBM, but can of course equally apply to social-relational aspects. The inclusion of an expert implies the acceptance of his discourse to frame the issue and the solution alternatives under study.
o Social and/or political pressure, which can be exercised as a result of the mobilization of broad social groups, constituencies or the public in general;
o Experience, referring here to direct (physical) experience with determinate aspects of the RB;
o Prestige, in this case referring to the status an actor borrows from his/her societal position and/or previous performances;
o Implementation dependance, has to do with the support that most interventions in natural resources need to get implemented, in the first place from local community stakeholders. At least it is required that they do not block implementation by boycotting, but often even an active contribution is required.

In this part of the research, we are referring to the influence mechanisms, which the actors espouse for themselves or attribute to the others. In the next section (2. Process) we are able to observe how these mechanisms are put in practice in concrete interactions, and we can then contrast these observations with the functioning of the multiparty domain espoused by the participants.

How?

The questions of this section try to illustrate the constellation of informal relations between the stakeholders in the RB, that influence SL possibilities.

o Which other actors does each actor describe in "friendly" terms, e.g. as an ally, a kindred spirit, etc.; and which actors do they describe in terms of opponents or enemies.

o What kind of conflicts do they report related to the river basin, which actors are involved in these conflicts, and what is the stake for each?
o On what basis do the different actors exercise power (as mentioned by themselves and/or by the others) to influence the RBM-domain: legal, financial, expertise, social pressure, experience, prestige, implementation dependence, etc.?
o Are there informal work groups or commissions functioning to resolve certain problems related with the RB? Who takes the lead, who is part of them, and how do they function?
o Have there been specific social incidents (e.g. conflicts) that have influenced the current PP, and that may affect social learning possibilities?

1.2. Physical system characteristics

What?

What are the main physical characteristics of the river basin and of the problems or issues under consideration in this study?

According to the WFD attention should be given to water quantity, water quality and biodiversity characteristics.

Why?

This section gives an overview of the main characteristics of the river basin that are derived from measurements that have been realized in the past, and on which stakeholders seem to agree. Often, especially, when we start describing problems, information is lacking and/or contradictory between different actors. These gaps or contradictions do not have to be concealed in a study on SL. On the contrary, they reveal instances where the social construction of the domain becomes visible, and can be dealt with under 1.3.

How?

o What is the location of the river basin and the project (country(ies), region, city, etc.), its size? Report basic data concerning water quantity, quality and biodiversity in the area.
o Is the project on an international, national, regional of local scale? Or more than one?
o What are the main, officially acknowledged, problems to solve ?
o Have there been specific incidents (like floodings, pollution, exceptional droughts, etc.) which have influenced the current RBM and PP?

1.3. The social construction of a river basin.

What?

What are the main opportunities and/or problems of the river basin, as identified by the different actors?

Why?

As explained before (see 1. context) social and natural system analysis cannot be separated. There is no problem, solution or causal relation unless there is a social actor stating it and/or accepting it. That is what we call here the social construction of a river basin. The description of the functioning of a river basin has to be connected to the social context analysis. Social learning refers precisely to the process through which different actors become aware of the different stakes and perspectives on the river basin reality, and together they learn to deal with it in a more integrated, encompassing way. This section of the PoQ has the intention of drawing the attention to the "perspectivistic", interest-based nature of so-called natural realities and problems. In the next section (2.2.1. Framing and reframing of the problem domain) we shall explicitly deal with the ways different actors eventually come to appreciate this diversity of perspectives more constructively through their concrete interactions.

How?

This section does not necessarily imply new contacts with stakeholders, or new questions. The perspectivistic nature of the river basin reality can be inquired by an additional analysis of the information, gathered from the former sections of the PoQ if the answers have been adequately reported and saved. That means that we can trace which actors have pointed to certain aspects of the river basin reality, e.g. complained about certain problems, and with which discursive terms.
  o For which actors is this really a problem?
  o Is this stated by themselves or by others?

1.3.1. Experts and public in RBM

What?

To what extent do the problems to be solved require data and knowledge from expert and non expert actors ?

Why?

A specific kind of difference in perspectives on RBM concerns the distinction between experts and non expert actors. This refers to different types of knowledge and knowledge communities. They are commonly considered as complicating participation. Experts belong to specialized knowledge communities operating and interconnected on a global scale, without direct link to a local geographical reality. Expert knowledge exchange deals with explicitly codified knowledge, (although tacit knowledge may be important for the functioning of the expert community). Non expert communities may eventually belong to a shared, geographically based local context, on which they base their knowledge. Tacit knowledge is generally an important aspect of their competence, which is often exchanged implicitly in the local community interactions. Tensions tend to be stated in terms of generalizability and reliability (of the experts knowledge) versus applicability and relevance (of the non experts). Status differences may complicate the exchange and integration of both types of knowledge.

When (natural) reality aspects are conceived in such a sophisticated and complex way that they can only be dealt with by experts, possibilities for a laymen public to participate are limited. The challenge to include non-experts in such a process is generally stated in communication terms: how to translate and simplify this knowledge so that laymen can understand its essence?

How?

Analyze the underlying "participatory" logic of the expert discourses, when PP is advocated. Is it:
  o Just to inform the public about what will be done, and the consequences for their daily lives?
  o To get the consent of the public, when it comes to transforming the expert knowledge into practical solutions?
  o To allow laymen and/or local communities to express their opinion, and eventually to co-decide, regarding the values underlying the technological choices?

1.3.2. Authorities and stakeholders in RBM

What?

To what extent authorities are willing to share their decision making power concerning RBM with other social actors?

Why?

In a representative democracy, the current political system in all countries of the EU, politicians are elected to represent the interests of the people for a determinate period. Politicians are responsible for the government of the public wellbeing, and are held accountable normally only at the moment of the next elections.

However SL implies a more direct form of participation which goes beyond the act of voting. In our society different kinds of stakeholders claim a direct say in the issues which concern them. The adoption of PP as a basic mechanism in the WFD implies an acceptation "de facto" of direct participation in public policy making.

As a consequence persons and organizations related to RBM are confronted with each other while making use of very different frames (see 2.2.1.) concerning accountability, responsibility, involvement, etc.

How?

By interviewing politicians, public officials and interest groups representatives, and by directly analyzing the structural and procedural arrangement for RBM, concerning:
- o the criteria of each of these actors to involve stakeholders in public decision making
- o when stakeholders should/can be involved in RBM (e.g. agenda setting, specific issue negotiation, decision making, implementation)
- o to what degree stakeholders can be involved (e.g. being informed, consultation, co-decision, autarchous management of certain RBM issues by not political actors)
- o what are the main functions and advantages of involving stakeholders, according to different actors?
- o what are the main risks and how can/should they be overcome?

Take care to distinguish between what is espoused as desirable by the different spokespersons, and what is really going on at the moment in RBM reality, according to each of them.

2. PROCESS

What?

How do the interactions between the stakeholders and the RBM content isses, they deal with, evolve in the period defined for the study?

Why?

SL must considered both as a process and as an outcome. However the emphasis in this "SL PoQ" is on the process aspects, because through these aspects the SL concept can offer most added value.

Natural and social life advance as a stream without a beginning, interruptions or end. Processes of change and evolution, taking place in this ongoing course of time, must be identified by social actors to be acknowledged as phenomenons, by stating a beginning, a series of events that express a change in some respect, and eventually an end. We propose a reconstruction of the learning process based on a sequence of different "critical" events. A description of concrete events allows to contextualize the general change process in its historical-spatial setting. An event can be a meeting, or some other activity in which the interviewed party was involved together with other stakeholders. We propose to accept an event as critical when – in the opinion of the interviewee – it significantly affected the social-relational and/or natural-technical qualities of the river basin domain.

Like problems, processes are social constructions. This implies that agreement on it between different actors is not evident. According to the conception of the process, actors are connected in an important or in a marginal way. By the way they narrate a history, they express their degree of involvement and/or acceptance of the others.

SL can only be the result of a long-time process and enough opportunities for relevant direct contacts between representatives of different stakeholders and social groups. The other way around seems also to be there. When actors have learned to appreciate the contributions of each other and feel at ease while sharing information, resources and even decision making, the threshold for contact is lowered, and so they tend to meet more continuously. So a certain frequency of contacts can be considered as both a condition and a consequence of SL.

How?

Do the actors, involved in the planning and management of the river basin, distinguish certain steps or phases in their interactions with the others? Do they agree on this?

Which "critical events" during the RBM negotiation and planning process are mentioned by the involved actors? Describe the (formal or informal) meetings between different actors which were most significant for them.

Look for events that are representative for different types of practices at different geographical and organizational scales:

- Formal/official events (e.g. expert meeting, focus group, ...) and informal events (e.g. open discussion between representatives and their constituencies, ...) ;
- Face-to-face events (e.g. meetings, conferences, ...) and space-time distributed events (e.g. citizen consultation through internet poll, ...)
- Types of interacting actors: between persons belonging to different communities of practice (e.g. in a catchment committee, ...), between persons belonging to the same community of practice (e.g. among farmers, internally in an NGO, in a water consumer association, ...), between representatives and their constituencies, between a project team and the general public (e.g. during an official public consultation phase), between a given stakeholder and the general public, between institutions (e.g. a directors board).

The selected events should preferably also be representative for the types of IC-tools used during the whole process.

A synthetic chart of the whole process (see figure 3 in annex 1 to this document) can be progressively built up as well as different standard descriptive cards (event card, tool card, respectively in annex 2 and 3) in order to structure the interviews, to harmonize the reporting of the different case studies and to facilitate their integration. These charts do not replace the detailed descriptions of the learning process events, but favour a within-case and between-cases overview at the end.

- For each significant relational event, fill up an "event card" and position it on the synthetic time chart (figure 3).

- Assess the frequency or time span between the critical events: e.g. between the meetings of a given working group, frequency of face-to-face or distant contacts between representatives and their constituencies, frequency of events between the RB authority and the general public (for information, for education, for getting comments, for reporting after comments, ...), frequency of inter-institutional meetings for a better coordination or for sharing resources, etc.

2.1. Relational practices

What?

To what degree and in which way do the critical events in the RBM process demonstrate characteristics of "relational practices"?

Relational practices are defined as: task-centred actions with relational qualities of reciprocity and reflexivity, enabling all relevant stakeholders to connect with a shared domain, in a meaningful way for themselves and for the rest of the group.

Why?

We suppose that multiple actors have to engage in what we call here "relational practices" to reach SL. It is in a concrete practice that actors meet each other. A practice is embedded in a specific (river basin) context and confronts the participants with the complexity, the integrated quality and the (lack of) relevance of their knowledge. A practice is goal-oriented (exploration, problem-solving, creation) and interest-based. Although every human or group action "strictu sensu" constitutes a practice and a relation, we restrict the concept of "relational practice" to those practices that enable all relevant stakeholders to connect with a shared domain, in a meaningful way for themselves and for the rest of the group. Relational practices are essentially task-centred actions with relational qualities of reciprocity and reflexivity. They allow knowledge to be provided by the different stakeholders, in an explicit and implicit way. The common issue of integrated river basin planning or specific water problems are the meeting ground for the development of new context based knowledge, enacted in a common practice. .

With the term 'relational practice' we want to stress that it is not just a question of bringing different stakeholders together in a certain context. It is the quality of their interrelationship that will determine the possibility of social learning. Precisely this relational quality may be an aspect difficult to grasp in assessment efforts. We suppose that they result from the interplay between the functions taken up by different actors, the rules to structure and regulate their interactions, and the tools used by them. These are the major issues screened on the social side of the framework (see2.2. Social involvement).

How?

Analysis of the "relational practice" qualities of the reported critical events:
  o   To what extent is there a balance between task and relationship, or between action and reflection?
  o   Is there space and time to reflect on and talk about the process itself?

These aspects are hard to analyze in historical case-studies, based exclusively on archives. Reports in general focus almost exclusively on technical content aspects, and occasionally on some indicators of social involvement (e.g. which actors were invited or present at certain meetings), but they rarely describe relational qualities.

One can try to remedy this by complementing the written information with in-depth interviews of some key-actors in the process. This does not guarantee relevant information, as most people (especially technical specialists) do not focus their attention on these relational aspects, and as a consequence have difficulties to remind them, or to express them.

Real-time case studies offer better opportunities to do direct observations on these aspects. These observations can be complemented by interviews, to confront our external observer with "inside" participant experiences. We can feed back our findings and reflections afterwards to the participants individually, or e.g. at the level of a steering group. Such an intervention can be considered as a form of action research and may contribute significantly to the SL process under study.

2.2. Social involvement

What?

Concerning the aspects which influence social involvement possibilities, we will pay attention to: the framing and reframing of the problem domain (2.2.1.); boundary management between ingroup/multiparty group (2.2.2.); distributive and integrative negotiation strategies (2.2.3.); leadership and facilitation roles (2.2.4.); evolving ground rules for the interactions between the actors (2.2.5.); allocation of resources, with special attention on tools used to generate and transmit information (2.2.6.).

2.2.1.   The framing and reframing of a problem domain.

What?

How does the framing of the problem domain and its issues develop or change throughout the process?

Can moments of reframing (significant changes in how the issues are defined) be identified?

By "frames" we mean here the conceptual entities and their interrelationships that are used by actors to describe an aspect of reality in such a way that it gets some sense for them, and becomes an issue to be dealt with.

Why?

A problem domain is not just out there, in the natural world, it is a meaning category used by social actors, calling for an intervention in a situation which they perceive as threathening. Social actors define or frame a domain as problematic and requiring intervention through selectively identifying the main issues and delimiting its boundaries. It is this gradual "cutting out" of a part of the ongoing reality, in interaction with other social actors, and attributing it a problematic character, that we call here: the interactive framing of a problem. As a starting point and a result of this process we will find established problem domains, that are necessarily social constructions (see: 1.3.)

Different social actors tend to acknowledge and highlight different aspects of reality as problematic, because of their specific experiences, and their frames to give sense to these experiences. A frame can be understood as the definition or meaning of an issue, and issues correspond to agenda items or topics of concern in the RBM. These definitions of issues are co-constructed or determined collectively through the way stakeholders make sense of their situation in interaction with other stakeholders. Although each side typically starts with a specific framing of the problem, this definition shifts through the interactive process of shaping issues. The nature, importance, scope, interrelatedness, breadth and stability of problems are shaped through the arguments and counterarguments of the stakeholders.

Framing an issue implies putting boundaries around it, which means indicating that certain phenomena have to be dealt with, and information about is relevant, while other data become irrelevant. At the same time social actors acquire the status of legitimacy or illegitimacy to participate in it, they are included in it, or excluded from it. The included actors are also put in a determinate relationship with each other: as an interested party, as a victim, as responsible for the cause, as an expert, etc. It is this apparently "natural" logic (because it is attributed to the functioning of the natural world) that will influence deeply the functioning of the socio- and psychological functioning of the stakeholder domain. According to the content framing of the river basin, stakeholders may identify goals in common, as complementary or as conflicting with others, and as a consequence they may enter in bilateral or multilateral coalitions to defend them.

The framing of the social and natural domain is not static. On the contrary, reframing as a consequence of the interactions between the stakeholders has to be considered one of the most important consequences, enabling and expressing social learning. That is why research on social learning has to focus on it.

Special attention has to be given to the initial encounters between actors because they have an important impact on mutual image formation ("the first impression…"). They can vary widely in content, according to the expectations and contributions from the different participants. The emphasis of some can be on voluntary information sharing to create trust, while for others it can be on soliciting information, without revealing oneself.

How?

The following questions have to be considered in the first place as observation categories, which can be used during meetings and other activities in which different actors are involved.

- o Which actors are invited to give their view on the problem?
- o Is there opportunity to give alternative problem definitions, are they taken seriously?
- o Do the actors acknowledge and try to deal with differences among them in the process of framing the problem domain and its issues or do they act as if there were no differences?
- o Do the actors start by analyzing a situation from different perspectives, or do some actors push to go directly to a certain solution?
- o Do the actors look actively for common ground among all, or among some actors, at the moments that problems are analyzed and solution alternatives proposed?
- o Whose terms and concepts become dominantly used in the problem definition handled by the multiparty group?
- o Are there certain problem definitions or issues, suggested by some actors, that are systematically ignored or denied by others?

2.2.2. Boundary management between in-group/multiparty group (representatives and constituencies)

What ?

How is the relationship between the individuals participating in the inter-organizational conversations and negotiations on RBM and their constituencies?

Why ?

Although RBM planning is an institutional and interinstitutional affair, it is in the direct interactions between individuals representing their constituencies that information is exchanged, that meanings are adjusted and that decisions are negotiated. However the ways in which individuals represent their organizations and how they act and react towards the multiparty setting can vary widely,.

One of the major tasks of representatives is to manage the boundaries between their own organization and the others involved in a shared domain. They are the persons in contact with other organizations, and so through them different types of – eventually even – confidential information will be shared or restrained. The way in which they represent their organizations will influence the exchange between the multiparty space and the particular parties, and thus also the possibilities for the latter to learn from the former, and the other way around.

Persons interacting in the same multiparty group may belong to different hierarchical positions in their organizations (operational or strategic levels). This will determine the kind of information they dispose, and the degree of freedom to take decisions without consulting their constituency.

Some may represent a so-called "under-organized" stakeholder, this means a social category with a specific interest in some aspects of the river basin, but without being organized around it in a formal institutional way. Or a stakeholder may be an interested social movement, that is not (yet) institutionalized to the point that it can delegate officially individuals representing their interests or points of view. Constituencies may also vary concerning their degree of homogeneity/heterogeneity. For representatives, it is easier to speak in the name of a homogenous constituency. Representatives of a heterogenous constituency tend to act insecurely, or not in a consistent way in the multiparty group. And they face more serious problems at the moment that results have to be fed back, because probably there is always a part of their constituency that will refuse them.

The so-called "dilemma of the negotiator" refers to the growing tension that representatives may experience between the expectations of their constituencies and of the multiparty group. Representatives participate in the first place to express the perspective and the interests of their constituency, with which they supposedly identify. But in the course of a negotiation process they may gradually learn to appreciate a situation from the other actors' perspectives, and to accept alternative situation and solution analysis. The long negotiations, conversations and other activities (- shared experiences -) may lead to a sense of belonging to this multiparty workgroup. In this way, interactions between representatives play an important role in

transforming competitive (win/lose) in collaborative (win/win) relationships between the institutional parties (see next section 2.2.3. on Negotiation strategies) We assume that this kind of interactions on a micro-social level are a necessary – although not sufficient – condition for SL to take place. But this implies that representatives are capable of justifying and feeding back their personal learnings to their constituencies.

How?

Multiple research methods (direct observations of multiparty meetings on different moments, in-depth interviews with representatives before and after these meetings) have to be combined to answer such questions as the following:

o In which way are the representatives participating in the multiparty deliberations concerning the river basin, appointed by their constituencies (e.g. officially elected, auto-designated, …)

o Which kind of mandate do the representatives have? (degree of freedom to come up with own proposals during the multiparty negotiations, or holding strictly to constituency's position). Is that the same for the representatives of all parties? ("To what degree can you judge and decide for yourself in a meeting with representatives of other organizations/institutions?" "Do you have to stick to the official viewpoints or do you have a margin for negotiation with other stakeholders representatives?")

o Have there been communication problems between representatives and their constituencies?

o Is an organization represented in a river basin deliberation commission by the same person during a long time period, or does the organization continuously delegate different persons? What motives do they give for these switches?

o What is the position of the representatives in their constituency (operational/strategic decision making)

o Is there pressure put on the representatives by their constituencies while they are negotiating? How does that affect their behaviour in the multiparty group?

o Do the stakeholders have an official point of view concerning the issues under deliberation in the multiparty group?

o How homogenous/heterogenous are constituencies concerning viewpoints under discussion in the multiparty group? Do representatives express their concern or eventually complain about a lack of unanimity under their members?

o Do stakeholders have communication channels to feed back relevant river basin decisions of the multiparty group to their constituencies?

o Do stakeholders in the multiparty group have themselves (internally) a rather democratic-participatory or a vertical-authoritarian organization?

o Can you (externally, as a researcher) observe expressions of acceptance, understanding, empathy by some representatives for (the viewpoint of) others?

o Do the involved actors themselves refer to a growing (- or eventually decreasing -) acceptance, understanding, sympathy for the others? Do expressions of mutual acceptance increase in the course of the process?

o Does mutual stereotyping emerge in the course of the interactions? What is their origin, in which occasions?

o Do the representatives identify positively with the multiparty deliberation agency in which they participate?

2.2.3.   Negotiation strategies

What?

What are the (mostly implicit) negotiation strategies with which the actors participate in the meetings concerning RBM?

Why?

Co-management of natural resources implies continuous negotiations between actors, each trying to get as much as possible out of it, from his point of view. In negotiation literature, a distinction is made between distributive and integrative negotiation strategies. This distinction is often explained by referring to the "pie metaphor": distribution is about cutting an existing pie in (smaller and bigger) pieces, integration is about trying to prepare together a bigger pie, to serve better the interests of all the parties. Choosing from different alternatives is supposed to be influenced by the attitudes of the participating parties in the negotiation situation: are they focused on defending their own positions, that means their concrete achievements, or are they looking to safeguard their deeper, underlying interests, that can eventually be accomplished by alternative means?

These distinctions are useful to characterize the ongoing deliberations between the different actors in an RBM effort, where one has to deal with different positions and interests. SL can then be considered as a move from distributive to integrative negotiations, and from defending positions towards safeguarding interests.

How?

Possible questions related to this aspect to guide the observation of negotiation moments are:

o Can (some) participants look beyond their concrete positions and initial claims to transform them in more general and deeper interests that can be shared and negotiated with others?
o Do the actors dedicate themselves to "deal making", that means entering in bilateral limited agreements with one other party, or do they learn to enter in a real "multiparty business", that means going for long term and sustainable arrangements of an actor network, serving multiple interests?
o Do the representatives retain certain information, or do they share all relevant information they dispose? What is the effect of it on the interactions?
o Do the actors bring in information in the multiparty group just to defend their interests, and to demonstrate their "being right", or do they learn to share information to enhance mutual trust.
o How are the bilateral (between two parties) and multilateral (between all) spaces used: where are the most important issues really dealt with, and who is marginalized to the position of being informed?

As some of these aspects are not immediately visible, and might be hard to assess, observation by and exchange between at least two observers is recommendable. Moreover, when the relationship between researchers and multiparty group and between the different

parties is enough open, mature and trusting, it may be useful to confront the external observer information with the different participants internal appraisals of what has been going on during the negotiations.

2.2.4. Interaction ground rules

What?

To what extent do the parties agree on and adopt working methods likely to support an effective participation of all those willing to participate ?

Is there some implicit or explicit procedure on the way PP will be conducted?

Why?

With "ground rules" we refer to the norms and criteria of the different actors and of the multiparty group as a whole, to deal with each other and with the river basin issues. These rules concern procedural questions, as well as process and outcome characteristics. Here we focus our attention on procedural rules, as the tuning of process and outcome criteria among the stakeholders is dealt with in other parts of this instrument.

By procedures, we understand the legal and the informal regulations and workforms which organize a concrete interaction between the actors, indicating how:
- o Invitations are made
- o Agendas are set up
- o Issues are assigned to single actors, bilateral contacts, sub-groups or the complete multiparty setting
- o Information is qualified as confidential (for internal, within-party use), for multiparty use, or as apt for the public in general.
- o Conflicting views are dealt with
- o Respect for the different points of view and interests is guaranteed
- o Uncertainties are addressed
- o Decisions are taken (majority, unanimity, unclear)
- o Memories are kept
- o Follow up is given
- o Etc.

We suppose that more agreement on the ground rules of the multiparty domain, leads to more active involvement of the total group. Early agreements can facilitate the start up of the activities, but they can also evolve in the course of time as a result of a learning process. Actors, sharing the same cultural background, social class or institutional category, may have a lot of ground rules in common. These rules tend to be implicitly adopted by the multiparty group, without any problem. However, this can affect the involvement of actors that do not share the same (cultural, social, institutional) background. It may then be important that ground rules are explicitly stated, proposed, negotiated and accepted, to avoid some parties, by imposing their rules on the rest of the multiparty domain, excluding other actors.

How?

Multiple information sources are necessary to find out the multiparty groundrules: archive analysis (e.g. minutes of meetings dedicated to the organization of PP), interviews with participants and direct observation during specific meeting. A synthesis of factual elements

can be derived from figure 2 and the different event cards and IC-tool cards (who invites, where, who has the information, who takes decisions).

- o Can you identify some basic agreements that all parties stick to? (E.g. "forbidden behaviours", also relating to social and psychological aspects, like aggression, not ridiculizing the other, not entering in the personal atmosphere)
- o Are these basic agreements explicit or implicit?
- o What are the consequences of the implicit nature of these agreements?
- o Can you identify moments when a ground rule was violated? How was this dealt with?
- o Are there intentional and deliberate measures to deal with the unequal access to important resources of different stakeholders, to favour equal opportunities?
- o Are there (implicit/explicit) ground rules with respect to the information handling: who makes the reports, who receives them, who has access to them, who maintains the public informed, who may talk to the press?
- o Are there some joint informational products co-developed by the different parties (e.g. glossary of scientific and local terms, legends of maps or GIS layers, maps or GIS layers, database conceptual model, dynamic conceptual model of the biophysical system, 3D landscape model, actor network maps, list of criteria used for scenario choice, rules used in a role game, ...)
- o How are uncertainties addressed ? E.g. do the experts specify the level of uncertainty when they communicate their results ? Are uncertainties systematically provided with the accessible data (e.g. uncertainty buffer on a map, metadata attached to a data file, confidence interval on the graphic results of a model, uncertainties explanation in a written document,...)?

- o What are the implicit assumptions (beliefs about the functioning of the social and natural system) underlying the groundrules adopted by the actors? Is there reflection or discussion on the assumptions underlying the ground rules (e.g. concerning the question if the practised ground rules favour reciprocity in the interactions and contribute to SL)?

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2.2.5. Leadership and facilitation roles

What?

How do the participants define the roles in the RBM for themselves and for the others?
How are different roles assigned to each of the actors?

Special attention has to be given to leadership and facilitation functions.

Leadership:
How is leadership enacted in the multiparty RBM process?
In which way does this favour or complicate SL?

Facilitation:
Are there (professional) actors "facilitating" the process? That means here: do they have an explicitly recognized function of contributing to the (SL) process characteristics of the RBM? How do they (and the others) describe their role, and what is the effect of their presence/absence on the process?

Why?

For effective natural resource management, the multiparty domain needs some direction, so that actors, their information and resources get articulated around concrete interventions. The more ambiguous a domain, the more anxiety it produces among the actors. These tensions feel unpleasant, because the actors are insecure about what is exactly at stake, how it can affect them, and how they can influence it. This is especially the case in new multiparty initiatives, when different social actors and institutions start conversing, and even more so when there is a common history of rivalry and conflict. A strong leader, e.g. a public authority, stating what has to be done, how it will be done, and who will be part of it, can eventually reduce this anxiety, and advance the initiative towards quick results. From a technical point of view, such results risk to be sub-optimal (not having taken into account all relevant information). From a social-relational point, a strong leader incites to a high dependence (from the followers, the actors favoured by his leadership), and/or resistance or counterdependance from those actors that feel excluded or put at a disadvantage. It is precisely the openness of the process that can generate innovative and creative solutions, and that is necessary to weave an interdependent relational network. Facilitators (explicitly designated or implicitly functioning as such) can fulfil an important role in dealing with this tension. They take care that relevant ideas and actors stay involved, and that the anxiety levels do not become destructive.

How?

Interviewing and external observations on the following questions:

o   Which actor(s) is assuming the leadership of the domain?
o   Is there a clear leadership? Is this so right from the beginning, or evolving (in which way)?

o Which kind of resources does the leading actor dispose of (legal, financial, expertise, charisma,…)
o Is the leadership function evident for all actors? Is there reflection, discussion, negotiation on it?
o Is the leader perceived as neutral, or as (interested) part in the problem by the others? How does this affect they way he/she can function?
o How is leadership expressed, put in practice? How does he structure the interactions?
o Is the leader more focused on the technical content or on the relations between parties, is he more process or outcome focused?
o Is there an actor facilitating the process: calling the attention to the relational aspects, looking to how parties deal with each other, caring that all stay involved?
o If there is such a facilitator, how has he/she emerged? Is he accepted by all?
o Are leading and facilitating functions concentrated in one actor or distributed over different actors? In the second case, how is the relationship between leader and facilitator, and how does this affect their functioning?

2.2.6. Allocation of resources, with special attention to IC-tools

What?

To what degree do the stakeholders dispose of the resources necessary to participate in a credible way in a joint RBM process?

Why?

PP requires important resources (like: skills, training, information, ICT, time, money,..), although this does not automatically guarantee its success. Some actors may be so disadvantaged by their low resources that in fact they are excluded from the most relevant interactions. Therefore, a certain or minimal degree of equality between the parties concerning their basic resources is considered necessary for a credible PP process. In this section the attention is focused on the degree and the ways the necessary resources for joint RBM are shared. We also analyse whether there is a gradual emergence of formal or informal agreements between stakeholders concerning the sharing of resources to participate, as an indicator of social learning.

How?

Archive analysis (e.g. minutes of meetings dedicated to resources for PP), interviews (with the coordinating authority of the process, with representatives of different actors and support staf), and direct analysis of the available resources and their sharing among the actors.

o Are there some tacit or explicit agreements among all of some of the parties with important resources (e.g. the Water authorities, state departments, regional authorities, strong NGO or associations), to share these resources (e.g. joint information system, coordination for field measurements, joint technical team to support the process, ...)?
o Is financial or technical assistance provided to the resource-poor parties ? (e.g. per-diem to participate in multiparty meetings, training to be able to use a specific ICTool, open access to information, installing and maintaining some ICT "at home")
o Do some actors use or retain their informational power to promote their own perspective, their own solution?
o Did some (marginalized) parties succeed in increasing their influence on the process using informational resources (e.g. contesting a decision showing in an arena their own knowledge, ...) ?

Specific questions concerning information systems and IC-tools:

o Is the informational power well balanced among the parties, or at least well known and accepted ?
o Is all the information concentrated in the Information System of the Water Authority or is it shared among different actors?
o Are there some agreements to share information?
o Is there a negotiated agreement (initial and updated during the process) between the actors on IC-tools (requirements, acquisition, use, assistance, maintenance), on data/information strategy (requirements, gathering, management, dissemination,

access), on a communication plan, on required resources for optimal uses ? If not, who decides ?

- o Can the information systems of different institutions communicate with each other ? For example, is it possible to express a query via internet which will mobilize several data coming from different IS, in a transparent way for the user? (This situation supposes a high degree of coordination between institutions at a technical and a managerial level.)

For each IC-tool :
- o Who proposes the use of it?
- o Who manages it?
- o Who has access to it or to its informational content?
- o Who provides the data/information/knowledge?

For each IC-tool identified as important from a PP and SL point of view, fill up an "IC-tool index card" (see annex 2) and position it on the synthetic time chart (see Annex 1).

2.3. Content management

What ?

What are the concrete challenges and practical-technical problems with which the actors are confronted in relation to the river basin?

Why?

To assess SL we cannot pass over the – sometimes technically complex – content of the issues which are dealt with in RBM, because of the conception of SL here. It is not just about "the learning of social groups to deal with each other", but as well about "the learning of social groups to deal together with the challenges from the outside world", in this case a shared river basin.

The conception of RBM and planning as a problem solving/decision making (PS/DM) cycle may help to structure the content tasks as a process going from problems to solutions. Each phase in this process will give rise to specific challenges in the social realm, that have been presented in the former section. We want to stress here however that we do not suppose that there is straightforward SL process corresponding to a PS/DM process. Although there may be some maturing of a multiparty group expressing SL (see 3.1. Relational outcomes), SL itself is characterized by challenges that cannot provide definitive solutions, but that have to be taken up permanently (like e.g. boundary management, leadership and facilitation, inclusion and exclusion, framing and reframing, etc.).

How?

Try to describe and position the content issues of the critical meetings between different actors according to the phases that can be distinguished in a PS/DM cycle. Do they have to do with:

- o Problem awareness: identifying which are the main problems, that urge for action and interventions
- o Problem analysis: identification of the main factors influencing these problems, which are (root and collateral) causes and consequences
- o Information analysis: gathering or generating information (review existing databases and carry out eventually new diagnostic studies, to answer the questions raised by the problem as it was identified.
- o Solution alternatives: reviewing different action possibilities
- o Decisions: choosing of one action between various alternatives
- o Implementation: putting into practice the chosen alternative.

3. OUTCOMES

What?

Evaluation of the social-relational and technical qualities of the outcomes of the process.

Why?

In line with our conceptual framework on SL (with a relational and a content column that have to be intertwined adequately), we distinguish here between social-relational and technical qualities of the outcomes.

Relational qualities refer to indicators that express increased knowledge, enhanced skills and more adequate attitudes of the multiparty group to take into account the diverse interests and perspectives of all the relevant social actors.

Technical qualities refer to indicators that express the technical soundness of the interventions and solutions given to the river basin problems.

Intermediate and final outcomes.
We do not want to restrict the concept "outcomes" to the end of the process (final outcomes). In the course of the process outcomes are continuously generated and produce their own evolving context (in interaction with an external evolving context, see also Section 4. Feedback)

How?

Social-relational qualities are highly subjective, depending on the subjectivity of the persons expressing their own and their constituencies emotionally laden opinions. To sound such outcomes on a larger population, scale-type questions may be used, like e.g.:
"How satisfied do you feel with…?"

1	2	3	4	5
Not satisfied at all		More or less satisfied		Highly satisfied

We should not forget however that the perceived position of the researcher and the kind of relationship he/she has with the evaluating actors will influence the answer strategies and meanings. To take this into account, additional in-depth interviews with some representatives is recommendable.

3.1. Relational qualities

What?

To what degree can the multistakeholder group involved in joint RBM demonstrate evidence of its enhanced capacities to deal constructively with its internal diversity and interdependence?

Why?

If SL is about "the learning of different social actors to deal with each other while learning to deal with the shared challenges in the external world", as we have defined it in this document, it is evident that the outcomes of a SL process can not only reflect in better river basin qualities. There must also be evidence of the multistakeholdergroup to deal with its diversity and interdependence. Indirect symptoms of this capacity can be high levels in e.g:

- o degree of satisfaction of different stakeholders and of the public at large with the river basin plan or with specific actions executed during the period under study
- o motivation of the stakeholders to take part in shared actions,
- o feeling of ownership of solutions by different actors

How?

Multi-method will probably be recommendable to assess the outcomes of a complex process as SL, using a combination of approaches like e.g.: broadly applied questionnaires to parts of large constituencies and the general public; in-depth interviews with some representatives in the multistakeholder negotiation groups, and a joint analysis and interpretation of the results of the two former methods by a multistakeholder working group. Questions that should be addressed at least by one of these methods are:

- o Do expressions of identification with a shared river basin entity increase in the course of time?
- o Is there a progressive growth of intergroup competition and rivalry, or are there on the contrary emerging new collaborative instances? Indicate when and how this is exemplified.
- o Does communication among the actors improve? Do the actors develop new ways and forms to communicate (within stakeholder groups, between them and with the population at large)?
- o Which actors feel committed (and how strongly) to the outcomes of the process (distinguish between representatives and constituencies)?
- o Do the actors involved in the process report an increasing awareness of interdependency?
- o Do the actors involved in a joined RBM process perceive the others in another light?

- o To what extent do they report a development in their relationship with the other actors (e.g. trust) ?
- o Which new power relationships might jeopardise social participation and learning?

3.2. Influence of IC-tools on relational quality outcomes.

What ?

Which are the potentials and the limits of different types of IC-tools in a given context concerning the communication and relations between the participants?

Why?

IC-tools (those used for the acquisition, management, visualization and dissemination of information/knowledge and/or those used for elicitation of different perspectives and/or those used to support interaction) are supposed to help improve the communication between the participants at different organizational scales. They make the information accessible (e.g. through a web site connected to a repository, through apublic information centre, ...), they may facilitate the expression of local knowledge (e.g. an interactive Web GIS for the management of comments, a 3D scale-model or a map posed on a table to allow the participants to express more easily their points of view and their knowledge), they support distant and/or asynchronous exchanges (e.g. electronic forum, ...), they may make uncertainties of experts knowledge explicit and thus encourage discussions, ...

There are differences between the organizations or professional groups in terms of their embedded professional languages and significant misunderstandings can happen, even concerning very basic terminology. Citizens or representatives of communities, who may not be water specialists in their normal jobs, may be very frustrated or even excluded from discussion by professional jargon.

Some tools or some specific tasks related to a tool may help sharing the same language or at least understanding each other:
- o the design of a GIS or a DSS which requires making explicit the type and definition of features stored in its database (data dictionary),
- o a tool (e.g. a web site) which allows to access and eventually to update a glossary,
- o specific functions on a web site for optimal information search, retrieval and display according to a user profile (e.g. a given professional category).

Participating in the co-design of an informational tool is supposed to facilitate the acknowledgement of both expert and local knowledge and to offer a positive context for bi-directional communication and mutual understanding.

How ?

By interviews (either individual or collective) of actors at different organizational scales (within a working group, between a representative and his constituencies, between the project team and the general public, between institutions, between working groups) who used ICTools to communicate.

By interviews of the person(s) who explicity chose a tool to support communication and interaction between participants.

By an analysis of some IC-tools, both in terms of ergonomy and informational content (volume, quality) (e.g. web site, forum pages, comments and feed-backs for tools used for the management of comments, ...).

By direct observation of the reactions of participants during events where IC-tools are used to support interaction (e.g. interactive board, spatial representations such as maps or 3D scale-models, ...).

This corresponds to some of the evaluation questions in the IC-tool card (see annex 2).

- o How was the time distributed between interacting with the tools and interacting with each other (both within and between groups)?
- o Did the tool contribute to raising awareness and interest regarding the RBM issues (and for which groups)?
- o Did the IC-tools and the way they were used or designed contribute to share the same language?
- o Did the IC-tools increase the commitment of participants to exchange or share information (private, confidential info), or other kinds of resources (time, work, technics) ?
- o Did the IC-tools that were used improve the knowledge of the participants about the others, about their actions and their interdependencies?
- o Did the co-design of an IC-tool contribute to improve the communication among the actors?

(Examples of co-design activities: co-producing a zoning map, a 3D scale model, co-defining the legend of a map or the dictionary of a data-base, discussing the criteria in a multi-criteria analysis process, co-designing the roles of different actors in a role playing game, co-elaborating a conceptual model to represent a dynamic RB system, specifying the functions and co-designing the graphic user interface of a computerized tool, ... Direct observation of the actions and reactions of the participants during such co-design events, combined with interviews of some participants, is recommended)

- o Were the tools used to elicit multiple perspectives of the situation?

If tools such as actor mapping, role playing games (used for instance to give the participants new identities, roles and decision power) have been used, description of these tools (see IC-tool index card) and interview of the people who participated or who consulted the results.

In the case of real time role playing game: direct observation and debriefing with the participants at the end of the game to see how their perception of others has changed.

Analysis of documents resulting from the actor analysis phase and the way these documents have been made available to the actors network (e.g. through a web site, in public information centres, ...) and interviews of the actors who consulted these documents.

In the case of real time actor analysis events: direct observation and interview of the participants.

3.3. Technical qualities

What?

To what degree and in which ways a better RBM can be attributed to the collaborative efforts of a multistakeholder group?

Why?

A SL approach assumes that the constructive dealing with different types of knowledge, experiences and positions, will result in a better RBM. Relevant diversity is about: different (social, exact and engineering) disciplines, local users (from within) and external experts (from outside) perspectives, and authority or contestant positions in the political or power structure.

"Better" RBM must be understood here in both senses: more efficiently and/or more effectively. "Better" can eventually also refer to the identification or acknowledgment by the multistakeholder group of new criteria to evaluate RBM practices, like e.g.: degree of sustainability, innovation, social equity, etc.

How?

The multi-method approach we have proposed to assess the social-relational outcome qualities should also include questions assessing the technical outcome qualities. Examples of these questions are:

- o What kind of new technical knowledge has been produced in collective actions among - at least two - different kinds of social actors, concerning the river basin and the interventions to resolve problems related to it?
- o Has the capacity of the involved actor network to resolve problems related with the river basin, increased?
- o To what extent does the introduction of local knowledge improve the substantive capacity to resolve RBMissues ?
- o To what extent do the solutions that are implemented meet the criteria proposed by the stakeholders, and the criteria of the Water Framework Directive?
- o Do the actors involved in the process report a more complete or exact insight in the (technical) issues at stake, as a consequence of their participation (e.g. do they have a better understanding of how a river basin functions, what effects different flood protection measures have, etc.) ?
- o Do some (or all) actors acknowledge innovations, or more sustainability in an economical, environmental or social sense, in the solutions given to the river basin problems? To what factors do they attribute these positive results (social learning by the multi-actor group, "accidental" historical or geographical context characteristics, or other factors)?

3.4. Influence of IC tools on the technical qualities of the outcomes.

What?

What is the impact of the IC-tools used on the capacity of the involved actor network to resolve the substantive river basin issues?

Why?

Participation in the design of an informational tool is supposed to facilitate the combination of expert and local knowledge, to obtain richer and more accurate representations of the reality, and to understand better the joint knowledge developed during the co-design process.

IC-tools may help the involved actor network to resolve better the substantive river basin issues for several reasons:
- o improving the amount and quality of knowledge on the river basin thanks to a better access to information, to a mutual enrichment between expert and local knowledges
- o allowing to test more alternatives during the "search of solutions" phase
- o allowing a better ranking of alternatives (e.g. through multicriteria analysis process)
- o integrating better the different components of a complex river basin system (e.g. models able to link surface and subsurface water issues, ...).

How?

By interviews with water experts and of different other categories of actors (members of working groups, constituencies, citizens, representatives of an organization, facilitators, decision makers) who accessed information/knowledge (through internet, during working group meeting, during specific training, in public information centre, ...). The interview questions correspond to the evaluation questions in the IC-tool card for the tool used for "information/knowledge management".

Through direct observation during events where people use tools for handling information / knowledge / management", and by interviewing these persons at the end of the event.

- o Does the co-design of some IC-tools increase the amount and/or quality of knowledge on the water and management issues among the participants? (Examples of co-design events and research methods, see under 3.1.2.)
- o To what extent do the IC-tools contribute to an improvement of the multi-actor network to resolve the problems identified in the river basin?
- o To what extent do the IC-tools dedicated to "data management / visualization / dissemination" contribute to a better understanding among the actors of the complexity of a river basin system and of the RBM measures?
- o To what extent do the IC-tools contribute to explore and produce more creative solutions?

3.5. IC tools usability.

What?

How did the perceived IC-tools usability among the participants evolve during the process ?

Why?

The usability of a tool can be defined as its fitness for a given purpose in a given context (depending on the characteristics of the physical, organisational and social environment in which the tool is used).

Components of the usability of an IC-tool are:
- o learnability: corresponds to the amount of things that have to be learnt before using a tool
- o effectiveness: the accuracy and completeness with which users achieve specific goals
- o efficiency: the amount of resources consumed in performing a task
- o satisfaction: the users' subjective reactions in performing a task (absence of discomfort, positive attitudes towards the use)

People perceive the usability of a tool through indirect sources (peers opinion, technical documentation, ...) or practical experiences. In this second case, the level of usability for a given tool will depend on its performances to fulfil a substantive and/or relational task in a specific context. This will influence the decision to use or not to use these IC-tools again in the future.

How?

IC-tool users may be asked the following questions:

- o How much experience do you have with this IC-tool ?
- o How do you now perceive the usability[1] of the IC-tool in the context of this project in terms of:
  - learnability (amount of things to learn before using it)
  - effectiveness
  - efficiency
  - satisfaction : how did you feel about your interaction with the system ?
  - integration with other tools
- o According to you, which contextual element(s) have affected (positively or negatively) the usability of the tool:
  - existing governance structure
  - type of river basin issue to be addressed
  - actors knowledge and skills
  - participation in its design
  - support from a technical person
  - trust in the developer, in the expert user

- guarantee of data confidentiality, data ownership
- actor(s) attitude
- relations between actors
- time frame
- meeting format
- data quality
- others

o In summary, would you use the tool again? in which situations?
o According to you, how do the other stakeholders perceive the usability of the tool and why?
o Do you know other tools (or other approaches without any tool) able to perform the same tasks in the same context ? How do you perceive their usability compared to the current tool ?

4. REIFICATION OF RESULTS AND FEEDBACK IN CONTEXT

What?

In which way and to what degree have the outcomes of the process under study had repercussions on the governance system of the river basin?

Are there lasting effects of the process under study on the physical qualities of the river basin (water quality, quantity, biodiversity)?

Why?

According to the WFD integrated and participatory RBM has to lead to sustainability in the water domain. Therefore, the attention has to go to the long-term effects of the processes under study. The questions of this section focus the attention on the results that get "reified", that means tangible results, that will affect the future RBM independent of the persons that participated in this process (like e.g. a new local regulation, a governance structure, etc.). In the natural realm we focus on interventions which have lasting impacts on the physical-structural characteristics of the river basin.

We'd like to stress here again (see also Section 2. Process, *why*) that the distinction between the four blocks of the SL conceptual frame "context – process – outcomes – feedback", as represented by figure 1, is an arbitrarily constructed one, that can even vary depending on the position of the actor telling the story of a RBM case. But how to classify than the information that is generated by the research, respectively as context, process, outcome or feedback?
- o "Context" in this SL frame is what the involved actors conceive as a "given" for their actions, because of being historically antecedent, legally decreed and institutionally or geographically more encompassing (see also Section 4.1. Crossing levels).
- o We consider as "process" in this SL frame all the aspects related to the direct negotiation of meanings between actors
- o "Outcomes" present the results of evaluations of the process in a relational and a technical sense.
- o Under "feedback" finally we look to the mechanisms by which and the degree to which these outcomes get incorporated in the physical and in the governance context.

How?

Generally we can only study a social process during a relatively short time period (some months, maximum some years). SL on the other hand has to do not only with enhanced cognitions and skills which in ideal circumstances can change relatively quickly, but also with implicit meanings, conditioned attitudes and underlying values, that means the deeper "cultural" layer, which is very resistant and time-consuming to change. Natural phenomena proceed in cycles that may take hundreds or even thousands of years. Therefore research strategies and questions have to be cautious not to overestimate the sustainable effects of a case, and have to be creative in their research methods to overcome this limit.

o Have new structures, procedures, policies or regulations, working forms, IC-tools resources been put into place, as a consequence of the ongoing process in the river basin, that affect efficiency and effectivity of the river basin management, and new joint learning possibilities ?
o Was there any evolution in the information sharing between institutions ?
o Are there new river basin characteristics, eventually new challenges, problems or risks, produced by or attributed to the current management under study, that need to be addressed?

4.1. Geographical scope and organizational level

What?

Which effects do the actors report from their participation in direct, face-to-face contacts (e.g. interorganizational task-group) on higher levels of aggregation (coordinated behaviour between organizations, networks, regional and basin planning, etc.) ?

How did the negotiation processes and outcomes at higher aggregation level influence practices at more local levels?

Why?

The SL concept underlying this Pool of Questions is clearly focused on direct interactions (learning-in-community), using concepts which were originally developed on small group level (group dynamics). Organizational theorists have stretched these insights to make them useful on an organizational level (organizational learning). With SL we stretch the interaction process focus even further. The questions in this section have to reveal how the meanings generated in one small group (e.g. a planning commission) can be transmitted to higher order organizational levels; and the other way around, how elements from above/outside get interpreted and put in practice locally.

We assume that multi-membership may play an important role to cross institutional levels (through people participating at different institutional levels), and organizational boundaries (e.g. people belonging to and identifying with different types of stakeholders).

We must take care not to conceive of a river basin as a closed natural and social system. This is clearly erroneous in a natural sense, with water constantly coming in from outside the river basin and flowing out of it. Equally in the social realm a closed system is remote from a river basin reality. Social actors do not invent from scratch their own governance system. They are all part of larger, higher-order systems (on a national/international scale) that bring in structures, concepts and regulations. This external system is in constant evolution. SL implies then the learning of a local multiparty group to deal with this changing social and natural environment. That means, building with the external elements a local governance system as apt as possible for the local (natural and socio-cultural) circumstances. It means also learning to communicate local lessons to higher order organizational levels, so that they can inform future general policy regulations.

River basins as governance systems pose a special challenge, as – in general – they do not coincide with existing socio-spatial units (e.g. cities, villages, countries, etc.). The latter ones, as they have developed historically, are culturally meaningful, and – at least some – social actors identify with them. We suppose that for the moment few people in most European countries identify with the river basin in which they live, that this slows down SL possibilities, and that advances in this sense contribute to SL (see also Section 4.2.).

Moreover there seems to be a contradiction between integration and participation in RBM. Integration calls for ever more encompassing and larger management units, to take into account the whole system complexity. Participation on the other hand works best at small scale, where people can develop direct contacts.

4.2. Stakeholder participation and the public at large.

What?

To what degree, and by which mechanisms the public at large has been involved in the river basin process under study?

Why?

Public participation implies public communication. That means that government (e.g. a Water Authority) at least has to inform the public at large about issues concerning water and RBM. Every higher level of participation (like consultation, co-decision making) implies higher demands on the quantity and quality of the information to be given. It implies also that this communication becomes more bi-directional and interactive. Nevertheless it is not evident to decide in which way and to what extent the public at large has to be informed.

Public authorities ultimately tend to hire special "communicators" for this purpose. As a link between the politicians and the public, they are confronted with a dilemma: do they have to transmit what their principals, the politicians, want them to communicate, that means generally stressing achievements, successes, in short "a good news show"? Or do they have to take into account the concerns of the public, that means also warning of risks, dangers, disadvantages, etc.? This tension seems to be growing in current European societies. On the one hand, as political authorities become more dependant on an unstable electorate, every issue, including water management, gives occasion to promote themselves personnally. So-called spin-doctors are hired to transmit very simplified and positive messages in general terms.

From the other hand, to allow active PP to get mobilized and organized, individuals and social groups need the information on which they can decide if they have a stake in an issue. That means that the possible risks for certain groups may not be obscured. Such "bad news" can alarm the public in such a way, especially at the start of a process, that they start questioning a proposal that is not yet enough advanced to give satisfying answers. The consequences may be that potentially promising proposals do not get enough developed, because of an early alarming of the public. This is a reason often put forward by public authorities to justify their silence towards the public until the latest stages of a project.

SL is then to be considered as an evolution on societal level, concerning the relationship between political decision-makers and the general public, towards more transparency, sharing of information and open debate. It is still in debate whether (local) societies are capable of learning in this sense. However it is a necessary condition and an essential aspect of social learning for natural resources management, as it is conceived here.

How?

By assessing the role of mass media, and the effects of mass events that were organized by the authorities and/or other stakeholders in the course of the process.

5. IC-TOOL CHARACTERISTICS

What?

Describe the technical aspects of the ICT-tools and their context of application.

Why?

To supply technical characteristics of the tool to understand which parameters may restrict or on the contrary may encourage its acceptability by the users.

How?

Interviews, literature, www review, IC-tools test, with the technical support /facilitator, and/or the project manager.

(questions included in the IC-tool index card, see annex)

ANNEX 1: GUIDANCE TO FILL IN THE SYNTHETIC PROCESS CHART

This document gives the main rationales and rules for filling in and using the synthetic process chart for HarmoniCOP. This chart (figure 3) is a graphical representation of the collaborative decision making process, including the use of different Information and Communication Tools (IC-tools) and the evolution of Social Learning (SL) meanwhile. It is hereafter called "the chart". It is designed for use in the context of HarmoniCOP WP5, and follows the results of WP2 and WP3. It complements the combined WP2/WP3 "Social Learning Pool of Questions".
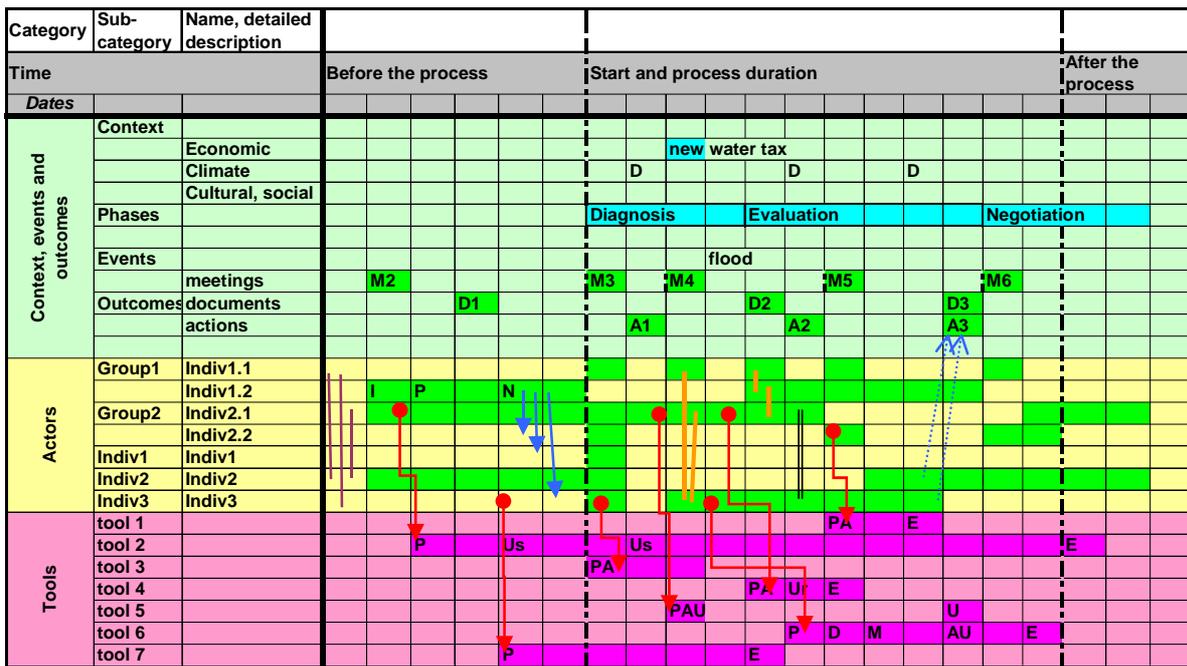

Figure 3: Synthetic chart of the whole process

Objectives of the chart

The chart is an "information processing support" for the collection and analysis of information about different decision processes related to RBM.

The chart is designed to support and facilitate :
- o **Organizing :** the collection and organization of the data and knowledge about a RBM or policy process, for its different dimensions : context, events, actors, tools, achievements
- o **Showing :** the presentation and discussion about a specific case, between the analysts and with the stakeholders
- o **Interviewing :** the collection of information from different interviewees or groups, as a base to be filled, criticized and discussed during the meetings
- o **Comparing :** the comparison and classification of different cases

It is a general model of the process (incl. conventions for drawing and relating facts) and not a specific artefact. Adaptations and modifications are possible by the analysts. It is not based on a specific knowledge management tool, although an Excel™ base is proposed for efficiency (Time or project charters like MS Project™ could also be used, as well as dedicated infrastructures). It is to be considered as an "information processing support".

General presentation

The chart has a main time dimension expressed horizontally: it shows the evolution of different process properties from "before" to "after" the assessed processes.

It has three main parts ("blocks"):
- o context, events and phases
- o stakeholders and community participation in the process
- o IC-tool use

Each part is filled with the relevant information, using a mixed textual and graphical conventional language. Information from the different parts can also be related to each other.

The chart should show how processes, facts and actions occur in time, and how they relate or organize themselves. It should clarify for instance :
- o which roles were played by the different actors in the process, and how they introduced the tools
- o which tools were used for the different phases or meetings of the process

For a given case, there can be different versions of the chart. Each version can show a different "view" on the process, according to a participant. Therefore, there are three ways of filling in and using the chart :
- o the analyst can fill it on his or her own, using various archives and knowledge he/she collected in an informal way
- o the analyst can fill a version representing the specific perspective of one single participant in the process
- o the analyst can aggregate and synthesize different perspectives in order to give a more complete overview of the process

The last option is the one that should be chosen for comparative objectives. However it requires a precise methodology to combine the different views. A practical approach is to start with version 1, then discuss and improve it in an incremental way with different interviewees, and by the end come to a synthetic form.

How to fill up and use the chart?

Some general rules

The analyst should gather and organize as much data and information as he can, prior to any interview. He/she must fill most of the chart him/herself and then get feedback and completion from the interviewee.

The analyst should keep track of the different "views" expressed by different interviewees, even if they seem contradictory

Together with the chart goes a supporting document (called "notes") including all related materials, comments and notes. It defines more precisely the elements of the chart, and gives more space for an extensive description of the charted pieces.

The first column of the chart is for general categories of information, the second for sub-categories (can be modified), the third for naming the different parts or elements.

The process itself is the following :

Time closure

The analyst will specify the effective starting date of the process (it doesn't need to be exact, but notions like "before" and "after" must be clear). The period "before" will be also described, especially for known previous relationships between participants, and background context. There should be some flexibility as participants can partly disagree on the notion of "start".

If the process has supposedly finished, then the "end" date should be specified. The period "after" until the present will be kept for assessing long term effects.

In most cases, it will be interesting to include a "future" period for which participants eventually can express their expectations.

As much as possible, events will be dated.

Before, start, duration, end and future of the process will be dated in the first line of the chart

Defining the phases

As for the general "SL Pool of Questions" different phases in the process can be specified and used for further and convenient reference. The notion of phase is very subjective, but it can be based on official phasing, types of process, kinds of social relationships, issues addressed, contex, etc… Phases will be named and described in the notes. The analyst will state a reasonable consensus between the different proposals of interviewees.

Phases can overlap.

Phases will be named in lines in the "context, events, phases" block of the chart, third column.

Specifying the events

Based on the media archives and all available materials, together with proposals from interviewees, the analyst will make an inventory and name all the main events of the process, of different kinds, e.g. :
- o meetings
- o official decisions and agreements
- o public statements or declarations of some parties in the media
- o effective actions (e.g. building infrastructure)

Events are single dated. There is only one event by column so that further indications of occurrence can be related to that event, using its column.

Events will be named and numbered in notes and will be put in the "event" line of the chart at their date of occurrence. A coloured spot is inserted at the date, with the label.

Describing the outcomes and deliverables

During the process, different outcomes and deliverables are produced: reports, agreements, stated decisions, actions on the field. Their occurrence are often milestones in the process.

Outcomes and deliverables will be named and listed in its sub-block, at their date of delivery.

Describing the context

The main features of the context will be specified, according to common knowledge and clues indicated by the interviewees.
Contextual events or processes (trends) can be:
- o climate : droughts, storms, perceived trends
- o environment and water : floods, pollutions, scarcity, river landscape evolution, etc
- o economic : changing prices of the water, the agricultural goods, incentives, taxes
- o political and institutional : new decision framework, general regulations, policies
- o social and cultural : changing opinions, public demonstrations, emergence of active NGOs

The context will be described and numbered in the notes and main features will be indicated in the time chart as a box or plots

Listing the actors

All participants of the process will be listed and named. For corporate actors, the overall organization is named, and main participant representatives are named and listed.
It is known that differences and even conflicts can occur between representatives of the same corporate body. However quite often the persons are not distinguishable from their organization.

Put the actor names in the third column in the block "actors"

Listing the IC tools

As for the other parts of the analysis, all the Information and Communication Tools that have been used will be named and listed.

List the tool names in the third column in the block "tools"

Charting the IC tool use

During the process, IC Tools can be :
- o Proposed : P
- o Discussed : D
- o Accepted : A
- o Refused : R
- o Modified : M
- o Used for showing and discussing the water issues (substantive knowledge) : Us
- o Used for improving mutual knowledge : Ur
- o Used for communication and exchange : Uc
- o Criticized : C
- o Abandoned : E

If limited information is available, then only "used" is charted.
If applicable, each type of operation in regard to a tool is charted with its initials at its known date. Colour the cells.

Charting the actor participation

During the process, actors can :
- o be outside the process, not acknowledged to be aware of it : (nothing in the chart)
- o be interested, be aware of the process : I
- o ask for participation, request information about the process : R
- o be introduced by another participant : P
- o participate only through listening : L
- o participate through information or opinion providing : S
- o participate through discussions, exchange and negotiations : N
- o implement or act in response : A
- o resign from the process : E

Put colour in all cells where the actor is active in the process. Denote a letter when a related state is known to be the case.

Charting relationships between actors

Relevant relationships between actors are described according to their known interactions outside and inside the process arena:
- o they speak together : S : orange link
- o they work together : W : brown link
- o they exchange or sell each other goods and resources : M : pink link
- o one introduces the other's participation : I : blue directed arrow
- o one denies other's participation : D : blue dotted directed arrow
- o a strong conflict appears between them : C : double lined black link

For the most important actors and "strong" relations, chart them vertically as a link between the actor lines, with a label and at the date of known occurrence. For long term relationships, chart them at the earliest.

For all relationships, specify when they disappear with a similar link to the first, but in dotted line and the same label.
Use different colours for different types of relations.

Charting actor roles with the IC tools

IC-tool operations can be promoted or prevented by some actors, especially the introduction of a tool. Actor IC-tool operations are :
  o Introducing : I
  o modifying : M
  o refuting : R
  o organizing and controlling : O
  o dismissing : E

Each actor tool operation is charted as a vertical line between the actor line and the tool line, at the date of its main occurrence, and with an attached label.

Charting tool roles for different events

The use of some tools for specific events is directly charted by the existence of a coloured block in that tool line at the column of the event.

Other elements

The analyst can use other kinds of representations or chart different elements, as long as he defines the definitions and rules of the charting.

The practical protocol

There are three main ways of collecting and charting the information :
  o using usual interview method based on semi-open discussions and design the chart afterwards on the computer
  o using a paper chart, pre-filled, and use "post-it" and different strings to include and organize the elements – synthesize on computer a posteriori
  o work with the interviewee directly on the computer

The second method is usually preferred as it is the most convenient and friendly with the interviewee.
Although it is not included in the main protocol, the analysis can be conducted with a group of participants, charting together during a discussion, if the analyst feels like doing it.

Comparing and classifying the charts

The main directions for comparing and classifying the charts will be proposed after the first collections have been made. However the following features are supposed to appear :
  o centralized processes with a strong control of a limited number or a single actor
  o distributed processes with sub groups and delegations
  o exploratory processes with many tools used each for a short time
  o processes with very few tools used
  o strong effect of a tool in facilitating discussion and exchange

ANNEX 2: GUIDANCE TO FILL IN THE TOOL ANALYSIS INDEX CARD

What?

To describe technical aspects of the IC-tools and their usage situation:
- o nature of tool
- o how common is the use of the tool
- o sustainability of the IC-tool.
- o nature of the output
- o management of uncertainties

Why?

To supply technical characteristics of the tool to understand which parameters may restrict or encourage its acceptability by the users.

How?

By interviewing the technical support /facilitator, and/or the project manager, literature, www review, ICTool test.

The results can be synthesised in an IC-tool analysis index card. This card contains 5 sections:
- o General characteristics: type, degree of complexity, availability, current stage of development
- o Main functionalities: the IC-tool uses are defined according the context of the participatory process. Four different kinds of functionalities are *a priori* proposed:
  - o information and knowledge management
  - o interaction support
  - o perspective elicitation
  - o simulation.

  These functionalities represent the potentialities of the tool. It will be possible to observe a difference between the potentialities of the tool and the effective use: restrictive use, or use of an another function. A comparison between the IC-tool Index Card and the Event Index Card should visualize this gap.
- o Sustainability: realization of conditions necessary to guarantee a minimal sustainability of the IC-tool: direct use by the actors, support to the user, degree of openness, and management of the monitoring/reporting or tracability.
- o Output description: contents and formal aspects
- o Management of uncertainties: the information is rarely an original quantitative data set, it is necessary to clarify the "fuzzy" nature of the information, that means the uncertainties associated to this information. Understanding uncertainties and their impact on the RBM, and dealing with them adequately in a decision process is a real issue for SL, and IC-tools can fullfill eventually an important function in this.

To each section of the card corresponds a very simple table to be filled up. There are 4 possible answers:

- o "yes"
- o "no"
- o "missing" if you don't know or you don't have the information
- o "irrelevant", because some questions are specific for computer-based tools, and so they are inadequate for the other types.

At the end of each section there is a space to put "comments". Some questions are suggested.

The IC-tool index card is already available on an Excel spreadsheet. Some terms are defined in the comments (red little triangle in the right upper corner of the corresponding cell). A list of these comments is also available at the end of this paper.

Case study :	ICT name :
Author :	Date :

General description: *Complete tables by putting "yes" in cell corresponding to the studied ICTool or "missing" near the title of the table when you haven't the information.*

Complexity:

Single	
Integrated	

Availability:

Free-to-use product	
Commercial product	
Research product	
Other	

Current stage of development:

Research prototype	
Pre-operational tool	
Operational tool	
Other	

Type

Questionnaire		Conceptual model		Interactive board [2]	
Opinion polls		. For (geographical) database		Information system	
Management of comments		. System dynamics		Spreadsheet (ex : Excel)	
Spatial représentations		Actors analysis [2]		Geographic Information System [2]	
. 2D or 2,5D [1]				Group support system [2]	
Maps [2]		Role playing game[2]		Scenario tools [2]	
Field or aerial photos		Board game [2]		Multicriteria analysis tool [2]	
Satellite imagery		Internet tools		Integrated assessment models [2]	
Perspective view		. Web information		Simulation tool	
Diagram block		. Forums and communities		Decision Support System (DSS)	
. 3D landscape scale model [2]		. CSDM [3]		Others :	
Cognitive mapping		. Web mapping			

Comments : if possible, precise the media to support the use of the tool, the cost if it's commercial product, if it's an usual tool or still innovative...

[1] 2,5 D : Perspective view
[2] An index card presenting the tool exist in the annex 2 of HarmoniCOP WP3 report
[3] CSDM : computer supported decision making
[4] Information and knowledge management : tools used to store, retrieve, visualise, disseminate information
      collect/ structure information /knowledge : choice of the format, associated metabase
      show information/knowledge : included, statistical or spatial analysis function
  Interaction support : tools used to improve communication, bring the individuals together
  Perspective elicitation : behaviour of stakeholders, game and role play tool...
  Simulation: dynamics of RB : social, economic, environmental aspects   .../...

Main functionalities: *Complete all the cells by putting "yes", "no" or "missing" according to your analysis [4]*

Information & knowledge management						Interaction support	Perspective elicitation	Simulation		Others
Collect & structurate info / knowledge			Show info / knowledge				Play the situation	Simulate impact	Optimize solution	
About the environment	About others / social	About procedure	About the environment	About others / social	About procedure					

Comments :

Sustainability, maintenance, documentation: *Complete all the cells by putting "yes", "no", "missing" or "irrelevant" according to your analysis.*

Does the use of the tool necessitate :

. a facilitator ?	
. a technical support (computer specialist) ?	
. others ?	

Degree of openness :

Is it easy to add new data, information ?	
Is it easy to modify data, information ?	

Support :

Does an user's support exist ?	

If user's support exists, fill in this table

Does the supplier provide :	
. Corrective maintenance ?	
. Evolutive maintenance ?	
Does an On line or off line help exist ?	
Does an User guide exist ?	
Is some training sessions organized ?	
Does a Technical assistance exist ?	
Does a Web site exist ?	
Does a User forum exist ?	

Management of the tracability:

Does a follow-up of the data, information collecting exist ?	
Does a follow-up of the data, information processing exist ?	
Does a follow-up of the conditions of the use of the tool exist ?	
Does an another follow-up exist ? Which one ?	
Who did it ?	
Are reports produced ?	
Are minutes produced ?	
Are specific documents about metadata produced ?	
Others ?	

Comments:

.../...

Output: *Complete all the cells by putting "yes", "no", "missing" or "irrelevant" according to your analysis.*

Are the contents of the ouput

Facts and objective presentations ?	
Opinions / emotional appeals ?	

Are the uncertainties of the data present ?	

Form's aspects:

Text		1D		Static	
Table		2D		Animated	
Chart		2.5D [1]			
Photo		3D			
Image					
Mmap					
Conceptual model					
Mathematical model					
Other					

Comments:
Are the outputs dynamically linked together ?
Can the user control the speed of the dynamic representations or interrupt it ?
How is uncertainty represented if it exists ?
Is the anonymity of the contribution garanteed ?

Management of uncertainties: *Complete all the cells by putting "yes", "no", "missing" or "irrelevant" according to your analysis.*

Is the ICT unable to do it ?	
Is it through metadata ?	
Is it through different perspectives in the case of local or expert knowledge ?	
Is it the range of confidence directly in the data set (mean, max, probability, ...) ?	
Does an approach exist to analyse the propagation of uncertainties during the process ?	
Other way?	

Comments:

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CONTEXT

Description of the main characteristics of the socio-historical and geographical-natural context in which the case study takes place.

Governance system

The concept "governance system" refers to the socio-political setting that allows the effective planning and management of activities that affect the RB.

Stakeholders

o *Which actors are involved in RBM and/or are affecting the river basin in a significant way?*

Actors involved in PP

o *Which actors are currently involved, or have been involved, in a Public Participation process concerning RBM?*

Formalized and/or legal context

o *What are the main public policies and legal standards regulating the roles of the different actors in the RBM, their relations and the procedures to be followed?*

Informal actor relations

o *How are the informal relations between the stakeholders related to the river basin, at the start of the case under study?*

Physical system characteristics

o *What are the main physical characteristics of the river basin and of the problems or issues under consideration in this study?*

The social construction of a river basin

o *What are the main opportunities and/or problems of the river basin, as identified by the different actors?*

Experts and public in RBM

o *To what extent do the problems to be solved require data and knowledge from expert and non expert actors ?*

Authorities and stakeholders in RBM

o *To what extent authorities are willing to share their decision making power concerning RBM with other social actors?*

PROCESS

o *How do the interactions between the stakeholders and the RBM issue contents, they deal with, evolve in the period defined for the study?*

Relational practices

o *To what degree and in which way do the critical events in the RBM process demonstrate characteristics of "relational practices"?*

Relational practices are defined as: task-centred actions with relational qualities of reciprocity and reflexivity, enabling all relevant stakeholders to connect with a shared domain, in a meaningful way for themselves and for the rest of the group.

Social involvement

The framing and reframing of a problem domain

o *How does the framing of the problem domain and its issues develop or change throughout the process?*

o *Can moments of reframing (significant changes in how the issues are defined) be identified?*

o *By "frames" we mean here the conceptual entities and their interrelationships that are used by actors to describe an aspect of reality in such a way that it gets some sense for them, and becomes an issue to be dealt with.*

Boundary management between in-group/multiparty group (representatives and constituencies)

o *How is the relationship between the individuals participating in the inter-organizational conversations and negotiations on RBM and their constituencies?*

Negotiation strategies

o *What are the (mostly implicit) negotiation strategies with which the actors participate in the meetings concerning RBM?*

Interaction ground rules

o *To what extent do the parties agree on and adopt working methods likely to support an effective participation of all those willing to participate?*

o *Is there some implicit or explicit procedure on the way PP will be conducted?*

Leadership and facilitation roles

o *How do the participants define the roles in the RBM for themselves and for the others?*

o *How are different roles assigned to each of the actors?*

Leadership:

o *How is leadership enacted in the multiparty RBM process?*

o *In which way does this favour or complicate SL?*

Facilitation:

o *Are there (professional) actors "facilitating" the process? That means here: do they have an explicitly recognized function of contributing to the (SL) process characteristics of the RBM? How do they (and the others) describe their role, and what is the effect of their presence/absence on the process?*

Allocation of resources, with special attention to IC-tools

o *To what degree do the stakeholders dispose of the resources necessary to participate in a credible way in a joint RBM process?*

Content management

o *What are the concrete challenges and practical-technical problems with which the actors are confronted in relation to the river basin?*

OUTCOMES

Evaluation of the social-relational and technical qualities of the outcomes of the process.

Relational outcome qualities

o *To what degree the multistakeholder group involved in joint RBM can demonstrate evidence of its enhanced capacities to deal constructively with its internal diversity and interdependence?*

Influence of IC-tools on relational quality outcomes.

o *Which are the potentials and the limits of different types of IC-tools in a given context concerning the communication and relations between the participants?*

Technical outcome qualities

o *To what degree and in which ways a better RBM can be attributed to the collaborative efforts of a multistakeholder group?*

Influence of IC-tools on technical outcome qualities

o *What is the impact of the IC-tools used on the capacity of the involved actor network to resolve the substantive river basin issues?*

IC-tools usability

o *How did the perceived ICTools usability among the participants evolve during the process?*

REIFICATION OF RESULTS AND FEEDBACK IN CONTEXT

o *In which way and to what degree have the outcomes of the process under study had repercussions on the governance system of the RB?*

o *Are there lasting effects of the process under study on the physical qualities of the RB (water quality, quantity, biodiversity)?*

Geographical scope and organizational levels

o *Which effects do the actors report from their participation in direct, face-to-face contacts (e.g. interorganizational task-group) on higher levels of aggregation (coordinated behaviour between organizations, networks, regional and basin planning, etc.)?*

Stakeholder participation and the public at large

o *To what degree and by which mechanisms the public at large has been involved in the RBM process under study?*

LIST OF CONTRIBUTORS

- USF-Osnabrück : Claudia Pahl-Wostl
- T.U.Delft : Bert Enserink, Erik Mostert, Dille Kamps
- K.U.Leuven COPP : René Bouwen, Marc Craps, Art Dewulf, Silvia Prins, Tharsi Taillieu, Edward Van Rossen
- Cemagref-Montpellier : Annabelle Boutet, Flavie Cernesson, Nils Ferrand, Patrice Garin, Pierre Maurel
- WL/Delft Hydraulics : Peter Gijsbers
- Colenco Power Engineering Ltd. : Liane Schlickenrieder
- ICIS-Maastricht : Joerg Krywkow, Pieter Valkering
- WRc : Jodie Thorne