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Pilot test on Science Policy Interface tools and mechanisms (SPI) for knowledge brokering at a river basin level

SPI Method for knowledge brokering
tested at the scale of an Irish river basin

**Sonia SIAUVE
Natacha AMORSI
Frédérique MARTINI**

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SPI Method for knowledge brokering
tested at the scale of an Irish river basin

*A French initiative
Requesting for a river basin assistance*

Contacts

IOEau

Sonia Siauve and Natacha Amorsi
French Water Information Centre
s.siauve@oieau.fr n.amorsi@oieau.fr

Onema

Frédérique Martini
Department of research and development
frederique.martini@onema.fr

Abstract

The Science-Policy Interface (**SPI**) aims at promoting an effective dialogue between scientists, managers and policymakers, in order to increase synergy and coherence by coordinating the different actors and activities, at all levels. In the framework of the Common Implementation Strategy of the Water Framework Directive (CIS), SPI strives to provide scientific support to the implementation of WFD and other European water directives.

From 2010 to 2012, the CIS-SPI ad-hoc activity, co-led by France (Onema) and the European Commission (DG RTD) resulted in a number of specific recommendations on how to make an effective and sustainable SPI, and on the tools that can be used to do that. In 2014, after a fruitful collaboration of several years on this subject, OIEau and Onema undertook to test these recommendations and tools in the field, via a pilot test at the level of a European river basin.

This report presents the SPI method developed in order to be implemented at a river basin scale, and the associated tools of communication which are proposed. This development of this method is described through the example of the pilot test carried out in 2014, in an Irish river basin: the Eastern River Basin District. The main conclusions and recommendations issued from this experience are given in this report.

Key words

SPI, Science-Policy Interface, water resources management, needs of knowledge, results of the scientific research, dissemination, knowledge brokering

Note to the reader

The present report aims at **describing the knowledge brokering method** to make an effective SPI at a local scale, which was developed following the recommendations of the CIS-SPI ad-hoc activity. This activity (2010-2012) was co-led by the European Commission's DG Research and Innovation (DG R&I) and France (Onema: French national agency for water and aquatic environments).

The main objective of the study was especially to test the operating performance of the CIS-SPI recommendations at the river basin catchment scale.

Abbreviations

CIS	Common Implementation Strategy
CoP	Community of Practice
EC	European Commission
ERBD	Eastern River Basin District
EU	European Union
FD	Flood Directive
FRMP	Flood Risk Management Plan
INBO	International Network of Basin Organizations
KB	Knowledge Broker
NWRM	Natural Water Retention Measures
OIEau	International Office for Water <i>Office International de l'Eau</i>
Onema	French national agency for water and aquatic environments <i>Office national de l'eau et des milieux aquatiques</i>
SCG	Strategic Coordination Group
SPI	Science - Policy Interface
WFD	Water Framework Directive

Glossary

Community of Practice refers, in this report, to the group of persons who will be involved in the knowledge brokering exercise. The **CoP** can be called “project team” or “project community” if it refers to a one-shot knowledge brokering exercise. It gathers a coordinator, water managers, policy makers, knowledge brokers (and their potential assistants), scientists and possibly in addition civil society representatives (residents, associations...).

Knowledge brokering is an approach increasingly used to put in connexion the science sector to which of policy development, managers (of water resources, for example) which are both users of scientific results; this term is employed to describe a two-way exchange of knowledge about an issue, which fosters collective learning and usually involves knowledge brokers or “intermediaries”. In other words, the knowledge brokering method and tools presented in this report consist in a process allowing first water managers and policy makers to express their need of knowledge and then knowledge brokers and scientists to provide them knowledge that fit, at least partially, their needs. A knowledge brokering exercise is concluded by an effective transfer of the knowledge available. Knowledge brokering aims also at identifying remaining gaps of knowledge which could be passed to scientific community and to national and European policymakers to feed the research agendas.

Knowledge brokers (KB) are skilled person or organization (depending of the geographic scale) who plays the role of intermediaries between the communities of water managers or policy makers and the people who produces scientific knowledge. KB are responsible of assisting both water managers / policy makers and scientists to formulate respectively their needs of knowledge and their results in an appropriate way in order to avoid language barriers. Moreover, they are in charge, with the CoP, of gathering the whole research projects dealing with the scientific issue of the CoP, reviewing all the available knowledge on it, “digesting” it and identifying the remaining gaps of knowledge. This step of gaps identification is crucial to orientate the national and European scientific agendas. Finally, KB have to produce knowledge brokering supports (different types of publications, power point and policy briefs) and organise/contribute to knowledge brokering workshops. Their role is therefore crucial on the success of a knowledge brokering exercise.

Policy brief is a short document composed of few pages; it is a concise summary of the available knowledge on a scientific issue, produced by researchers themselves (or by knowledge brokers), in order to provide scientific evidence to support decision making for both policy makers and managers. The format used and presented (Annexe 2) in this report is the one recommended by the CIS-SPI ad-hoc activity¹.

Project consortia refers to the group of partners involved in an (EU-funded) research scientific project.

Scientific issue refers to the problematic illustrating the needs of knowledge for water managers and policy makers. It is a sentence expressing in a clear manner the subject which the CoP deals with, meaning that it must reflect the need of scientific information in a language that each member of the CoP could understand.

¹ “The CIS-SPI ad-hoc activity” is the ad-hoc activity on Water Science Policy Interface (SPI) of the Common Implementation Strategy (CIS) of the Water Framework Directive (WFD), which was created by the European Water Directors in December 2009. Its mandate was for three years (2010-2012).

Introduction

The present study aimed at supporting Onema and OIEau's activities in relation to the Science-Policy Interface (SPI), conducted for several years now. This report **describes the knowledge brokering method** to make an effective SPI at a local scale, which was developed following the recommendations of the CIS-SPI ad-hoc activity.

The main objective of our work was especially to test the operating performance of the CIS-SPI recommendations at the river basin catchment scale.

In this report, we first present the background and the context of this initiative. The proposed method to make effective SPI at the river basin scale is then detailed. All along the report, a review of what happened during the year 2014 is described, that means: identification of an Irish river basin, discussions, steps and efforts to advance the work.

However, it is important to highlight that the method developed, based on CIS-SPI ad-hoc activity recommendations, can be applied to other river basins and also to other geographic scales, with an adaptation of the actors to involve in the CoP.

Background and objectives of the project

► Context

Along its three-year mandate (2010-2012), the ad-hoc activity on Water Science Policy Interface (SPI) of the Common Implementation Strategy (CIS) of the Water Framework Directive (WFD) worked at ensuring a cooperative interface between water researchers, policy makers, managers and stakeholders. This activity was co-led by the European Commission's DG Research and Innovation (DG R&I) and France (Onema: French national agency for water and aquatic environments). During this period, every year a "Water Science Meets Policy" event was organized with the support of the Office International de l'Eau (OIEau):

- the 1st event, "Common Implementation Strategy (CIS) of the Water Framework Directive (WFD)" – 30 September 2010, Brussels;
- the 2nd event, "When ecosystem services come into play" – 29/30 September 2011, Brussels;
- the 3rd event, «How to streamline knowledge to address WFD policy challenges?» took place in November 14-15, 2012, Brussels, and aimed at demonstrating the added value of SPI at all geographical levels and ended with proposing key recommendations to implement a sustainable and effective SPI activity.

The full report of the 2010-2012 CIS-SPI activity shows in particular research needs and gaps on issues related to the topics of the CIS groups. CIS-SPI has especially highlighted the fact that scientific knowledge exists but is hardly reaching the water managers at the river basin level. Some tools, mechanisms and methods to enhance uptake of scientific information by all the stakeholders at the river basin scale and improve knowledge brokering at this level were suggested on the occasion of the 3rd event. These ones deserve to be tested and turned into recommendations on how to improve the transfer of scientific knowledge to all the actors at the river basin level. This is intended to be done through a pilot test at this local scale.

► Identification of a river basin

We first met Ray Earle, WFD coordinator, ERBD² Office (Ireland) in Plovdiv (Bulgaria) on November 2013 on the occasion of the EUROPE INBO³ annual conference. Due to his involvement during the workshop organized by Onema and OIEau and his interest in the WFD implementation, we identified that an Irish river basin would certainly be a good candidate for the pilot test. We secondly met him and some members of the ERBD team in Dublin, on December 2013 as speakers during the EU WFD workshop they organised. We presented the results of the CIS-SPI ad-hoc activity during this seminar. This event was the opportunity to start a discussion on what would be possible to do at an Irish river basin scale to improve information and knowledge exchange and brokerage on the framework of the implementation of the WFD.

All along the year 2014, discussions were carried out to identify potential needs of knowledge for Irish water managers and to agree on a specific river basin and on a related scientific issue. Whilst we met several times (18th March in Paris, 3rd October in Dublin⁴), we had to work hard to set the initiative off to a good start. The biggest difficulty had been to achieve the creation of the community of practice, which is an essential starting point before anything can really start. A reason could be that the initiative was at the very beginning French, not Irish. The fact that the Irish team was not the prospective applicant of the pilot test may certainly / partly explain the project inertia.

► Objectives

The pilot test initiative aims not only at furthering the work done by the CIS-SPI activity but also at providing benefit to the river basin involved in the test.

For French partners: Onema and OIEau

From French side, the main objectives are to test and improve a knowledge brokering at the river basin level and get recommendations, by:

- applying and testing the structures, tools and methods highlighted over the three years of the CIS-SPI ad-hoc activity and finally recommended by the participants of the 3rd CIS-SPI event,
- elaborating final recommendations in this regard, issued from the field experience.

The tools and methods proposed are presented in the following paragraph and summarized in Annexes 1 and 2.

The test should preferably apply on one or two of the major scientific issues identified by the CIS-SPI activity with the CIS groups (and listed in the final report of the CIS-SPI ad-hoc activity). These “scientific issues” constitute the policy needs which have to be covered by scientific knowledge in order to accompany water directives implementation; they have been prioritised by order of urgency. This is preferable because the work of assessing the scientific information (among the available knowledge established mainly by European projects) fitting these needs has already been done to a large extent by the CIS-SPI activity. So material exists, although having to be confirmed and consolidated along the pilot test.

² ERBD: Eastern River Basin District, Ireland

³ INBO: International Network of Basin Organizations, for which OIEau ensures the role of permanent secretariat

⁴ This second meeting, initially planned in June was postponed twice.

For Irish partners: ERBD and the entire project team

Ray Earle, who is our main contact, clearly explained the Irish will to show to the European Commission that they take on board the EU recommendations on how to implement European directives, such as WFD and FD, including recommendations on how to exchange information and scientific knowledge.

Moreover, the 3rd October 2014 meeting was the occasion for other members of the Irish team to express more clearly their need of knowledge and scientific data about 2 urban rivers of Dublin City: Santry and Nanniken, in the special context of the Biosphere project (in collaboration with UNESCO). Both of these two streams present bad or moderate water quality mainly due to industrial discharges at the top of the catchment. The main objective for the ERBD is thus to write a second RBMP⁵ which include one or many NWRM⁶, certainly in St Anne's Park (neighboring Dublin bay), in order to improve the water quality, according to what was recommended by the EC in the Blueprint to Safeguard Europe's Water Resources (2012).

To do that, ERBD needs knowledge and scientific evidence on:

- the effectiveness of NWRM to improve water quality,
- how to best implement NWRM,
- the relationship between water quality and ecosystem services,
- how to establish the hydrologic inter-relation between 2 rivers (as they think that the 2 urban rivers, Santry and Nanniken, are linked, as the flood problems they cause are).

► Administrative features

It was a French initiative, co-led by Onema and OIEau, requesting support from a specific river basin authority to be the pilot test. It followed up the CIS-SPI activity and was an attempt to implement in the field the recommendations drawn by this activity.

No formal applications or agreement was needed from the pilot basin to get involved in this project.

France financially supported this project. The identified river basin was not asked for any additional funding, but conversely they received no funding from France (nor from Europe). This project was carried out on a voluntary basis. Nevertheless, this project required not negligible in-kind involvement in time and effort from all the partners both from the identified river basin and France to organise and participate in meetings, write documents and search scientific information...

Proposed knowledge brokering method

► Actors and Community of practice

First, we mean by **Community of Practice (CoP)** a group of professionals (managers, policy makers, scientists and knowledge brokers) who share their knowledge and discuss the meaning of their professional needs and know-how, using different tools to communicate and exchange ideas.

⁵ River Basin Management Plan

⁶ Natural Water Retention Measure

After discussing with Irish partners, we realised that this term had created a terminology misunderstanding as for them “Community in Practices” rather refers to public participation and to people daily involved in the field (associations, citizens) whereas for French participants it refers to people who will be involved in the project. It was thus collectively decided to use the term “**Project team**” or “**Project community**” in order to refer to the group of people who was going to work together for this SPI exercise (temporally in this project but which should become permanent for SPI sustainability).

Finally, to ease the reading and the understanding of this report, it had been decided to continue using the term Community of practice (CoP). It is however important to keep in mind that this term could refer to a temporary team, held for a one-off exercise (as it is the case here) but could also be used to describe a group of persons dedicated to make a sustainable SPI.

Recommendation 1 : to constitute a CoP

As a first recommendation arising from this project, we highlight that to launch a new CoP, different actions are required before starting to work together:

- 1- determine the primary intent of the community,
- 2- define its domain,
- 3- identify a coordinator,
- 4- contact and motivate potential members,
- 5- connect community members.

To ensure an effective SPI, it is recommended to involve the following main stakeholders: water managers and implementers at the river basin level, policy makers at local and regional level, scientists, thematic experts, and knowledge broker(s) (as it is shown in Figure 1).

It is then crucial to ensure that everybody is aware of its role and tasks to do. For example, when discussing with the different Irish participants of the 3rd October meeting, one of the first questions they asked to us was about the definition of this new term: “Knowledge Broker”. This question was raised notably because we asked each participant to fill in an attendance sheet (cf. Annexe 3) in which they had to specify their role: Policy maker, Water manager, Scientist, Knowledge Broker or Other (with enough place to specify it). Yet, nobody ticked the “Knowledge Broker” box.

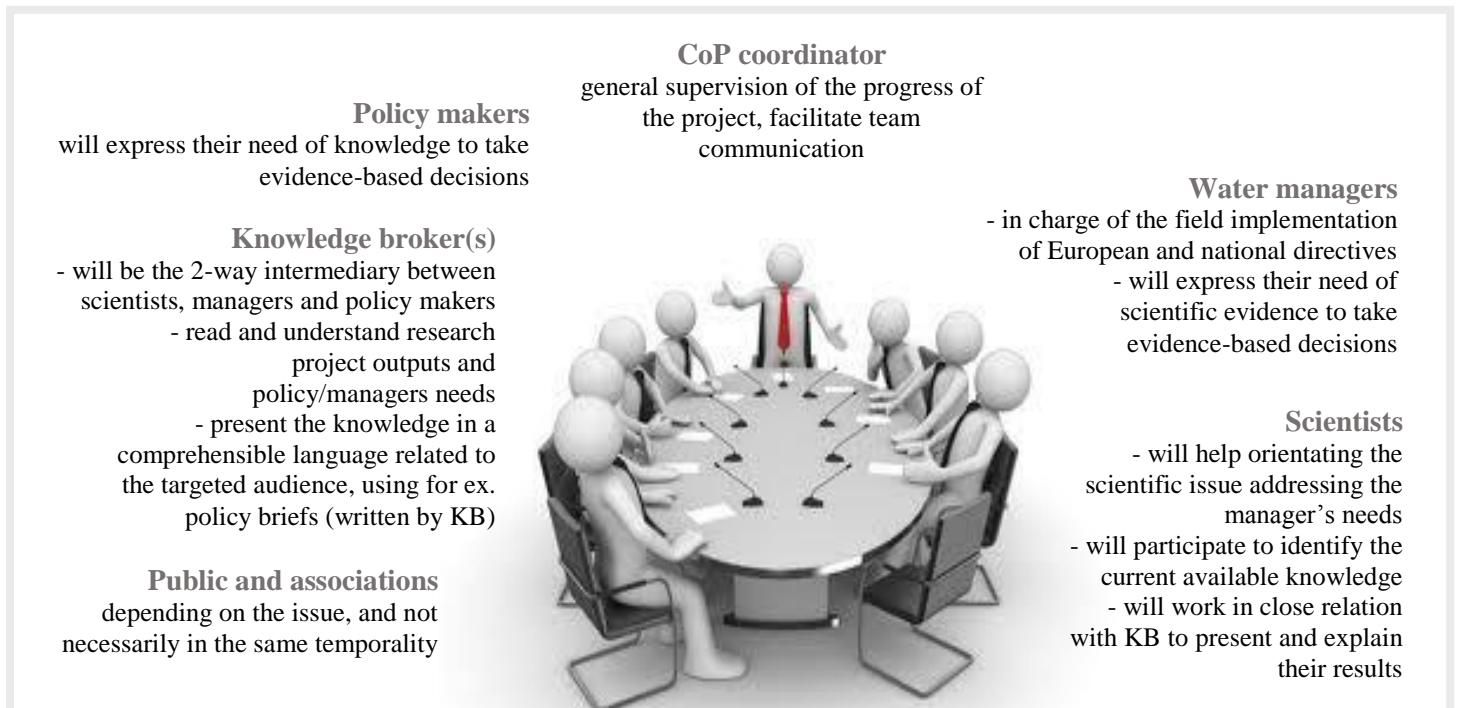


Figure 1: Community of practice

In order to clarify the role of knowledge brokers, let's begin with a definition of knowledge brokering (issued from the K* Spectrum, Shaxson and Bielak, 2012⁷): Knowledge Brokering is a two-way exchange of knowledge about an issue, which fosters collective learning and usually involves knowledge brokers or "intermediaries". The overall aim of knowledge brokering is to maximise and accelerate research impact.

The approach of *knowledge brokering* covers all the following steps:

- identification and assessment of the needs of knowledge for water managers and policy makers in order to help them take evidence-based decisions;
- collection or production of scientific knowledge which fits the needs previously identified; simultaneous identification of the gaps of knowledge in order to orientate the national and European scientific agendas in order to fill these gaps;
- if needed, presentation of the scientific results in a suitable way, understandable by managers and policy makers;
- transfer of this knowledge in a format adapted to the targeted audience.

Knowledge brokers (KB) are the main facilitators of such an approach. Depending on the level (local, regional, national, European...) KB would be people, group of experts or organizations (public or private).

⁷ Shaxson L., Bielak A. T., 2012, *Expanding our understanding of K* (KT, KE, KTT, KB, KM, etc.). A concept paper emerging from the K* conference held in Hamilton, Ontario, Canada, UNU-IWEH, Hamilton, ON, 88p.*

Their role will be:

- to assist policy makers and water managers to formulate the right scientific and technical questions; this means that the scientific issue must cover their need of knowledge, while at the same time be understood by scientists,
- to review research projects, grey literature, etc. about the available knowledge which could address the problematic, and therefore identify the possible gaps,
- to discuss directly with scientists in order to be sure of the understanding of their results and of the key messages they want to disseminate,
- sometimes, to keep the on-going research aligned to the policy needs and if needed to adjust the research accordingly (not the case for the present exercise),
- to keep the coordinator aware and interested in the progress of the review,
- to write (or get someone write) policy briefs about the selected research projects, in order to present the available knowledge to policy makers and water managers in a suitable way, avoiding therefore any language barrier,
- to prepare and sometimes facilitate, together with the team coordinator, real or virtual meetings (such as webinars) in order to proceed to the knowledge brokering.

To summarize, KB are skilled person or organization (having scientific competence as well as effective communication skills) responsible of assisting both water managers / policy makers and scientists to formulate respectively their needs of knowledge and their results to avoid language barriers. Their role is crucial on the success of a knowledge brokering exercise.

In the present context, as we will work at the river basin level, the KB should be people who temporarily play this role and who could ideally be supported by one or several assistants.

Recommendation 1 : to gather the CoP

Create and gather the project team is a crucial pre requisite requirement before starting any knowledge brokering exercise. Because of its importance in the success of such a project, the complexity and the necessary duration for this step should not be underestimated.

► Steps of the proposed method

Fundamentally, knowledge brokering is the process of ensuring that the right insights are conveyed to the right people both in the right way and at the right time. The knowledge brokering method developed is designed to help make it happen. In the present report, there are 2 different approaches for describing this method: the first one is a chronological one (paragraph directly below) and in the second one (presented in Annexe 1) the different actions have been grouped into seven main themes which are:

- 1- Establishment of the Community of Practice
- 2- Definition of the needs of knowledge
- 3- Search of scientific projects
- 4- Reading and comprehension of available knowledge

- 5- Writing of supports of communication to effectively transfer this knowledge (writing of policy briefs, for example)
- 6- Knowledge brokering
- 7- Review, feedback and lessons learnt

Chronological steps of the knowledge brokering method:

Preliminary steps:

- gather future members of the project team (pre-identification and first contacts),
- agree on the objectives and the administrative features of the project (being the present pilot test or another SPI exercise),
- identify and formulate a scientific problematic addressing the needs of knowledge of water managers and policy makers.

Knowledge brokering:

- Before the first meeting of the CoP:

Writing of a project proposal (Onema/OIEau) to explain the context of the study, the objectives and the scope. This document should also present the different actors already identified and the first formulation of the scientific issue. The aim of this short report is to constitute a first document that can be communicated to future members of the CoP in order to involve them.

- First meeting of the CoP:

Why? - to ensure a clear mutual understanding of the scientific knowledge needs and of the objectives of the knowledge brokering exercise;
- to discuss and review the scientific issue, meaning the need of knowledge for the managers and/or policy makers;
- to explain the role and future tasks of each member of the CoP (coordinator, KB, managers, etc.);
- to clearly establish a list of the CoP members, depending on the scientific issue formulated;
- to at least approximately decide a timetable for the entire project (deadlines and deliverables).

Who? At the minimum, the water managers or policy makers who were at the initiative of the demand, the future knowledge brokers and ideally the future project coordinator

- Between first and second meeting:

Writing of a more detailed proposal, based on the decisions taken during the first meeting (Onema/OIEau).

Gathering all the members of the CoP (river basin actors).

- Second meeting:

Why? - to present the project in more detail: context, scope and objectives;
- to definitively identify, among the CoP, the coordinator and the knowledge brokers;
- to validate data/information requirements or to slightly adjust it;
- to agree on the timetable, roles and human resources dedicated to each task;

- to identify available research outputs / knowledge and already identified gaps;
- to ask participants about the already existing tools and structures they know for knowledge brokering:

What type of tools are used to facilitate scientific results and knowledge taking-up?
What are the benefits and drawbacks?

Who? All the CoP members (coordinator, policy makers, water managers, scientists, thematic experts and knowledge brokers). The use of an attendance sheet (see example in Annexe 3) asking for participants to stick their role in the project, as it has been done for the 3rd meeting in Dublin, would allow to open the discussion about the role and tasks of each member, and especially of the knowledge brokers. Moreover, it would encourage all the actors to be rapidly involved in the project, although being only a participant to the meeting.

Where? When it is relevant, a site visit would be really interesting in order to help all the members of the CoP, and especially the knowledge brokers, to well understand the whole problematic and the context of the pilot test location.

ERBD case study example

Meetings: 8th-10th Dec 2013, 18th March 2014, 3rd October 2014

Scientific problematic evolution:

The issue has evolved along the time since the first meeting:

- 1- Consideration of Climate Change in the preparation of the FRMPs.
- 2- Screening and appraisal of NWRMs as possible measures to include in the FRMPs.
- 3- Improvement of knowledge brokering and uptake for one NWRM assessment through Ecosystem Services Approach, in the framework of WFD and FD. Irish ERBD case study.
- 4- Improvement of knowledge brokering and uptake for urban stream management including NWRM and Ecosystem Services Approach, in the framework of WFD and FD. The Santry and Nanniken rivers.

This stresses the importance of the step where the scientific issue / need of knowledge is identified by the CoP. The time necessary for this step should not be underestimated.

Knowledge brokering:

This work has started in 2013 and many projects fitting Irish problematic have been identified since then. They were communicated to the Irish team but are not presented here.

State of progress (February 2015):

The work is ongoing, but it seems that the constitution of the project team, whose members will have to work on a voluntary basis to put in place the knowledge brokering process, is actually a blocking point.

Recommendation 3 : scientific issue

As a third main recommendation, we want to highlight that a quite long time is needed to set the scientific issue which will be addressed during the knowledge brokering exercise, correctly in a well shared manner. This step should therefore not be underestimated.

- Bibliography, data assimilation and repackaging

During this step, all the CoP members are asked to communicate to knowledge brokers and their assistants (if there are some ones) the names of research projects or other initiatives and articles that could cover at least partially the need of knowledge validated during the second meeting.

Knowledge broker(s) and their potential assistants have to read and “digest” the available reports and/or publications about the research project outputs previously identified by the team, or about which they will have found themselves, notably from the projects pre-listed in the CIS-SPI report. Moreover, they have to assimilate this available knowledge and to write a policy brief about project results especially addressing the scientific issue identified by the COP, using the template recommended by the CIS-SPI activity (cf. Annexe 2).

Ideally, knowledge brokers should make validate the content of these policy briefs by the project consortia who have produced the scientific results, in order to ensure the truthfulness and correctness of the said information.

During this step, the pilot test coordinators and the whole river basin team involved in the project, have to prepare the knowledge brokering workshop.

- Knowledge brokering workshop (seminars or webinars)

During this workshop, all the projects supposed to fit the scientific issue will be presented, by mean of a power point and policy briefs on the format of the one proposed by the CIS-SPI activity and maybe also the policy briefs written by the project consortia themselves.

This event will be an opportunity to exchange on the scientific results presented and to clarify some points, if needed. Moreover, it could help identifying the remaining gaps of knowledge and as a follow-up, local and national authorities of the pilot river basin as well as the CIS groups should be informed of these gaps of scientific evidence.

- Third meeting (debriefing):

Why? - to collectively discuss about the general method proposed to make an effective SPI: identification of need of knowledge, identification of research projects which cover at least partly this need of information, knowledge brokering event (format of the event, agenda, participants...), actors involved, follow up;

- to collectively discuss about the communication tools used, and especially the policy brief, and their format:

Is this tool useful? Understandable? Written in an appropriate language?

Does it answer the real needs in order to allow taking well-informed policy decisions?

What kind of information is missing?

How can it be improved? Better customised?

Can somebody present a more relevant tool?

- to collectively discuss about the knowledge brokering events: seminars or webinars.

Who? Ideally, all the members of the CoP. At the minimum, the water managers or policy makers who were at the initiative of the demand and the knowledge brokers.

- Final report

A final report will present the overall project and will especially focus on the recommendations made about the tools and methods for knowledge brokering and uptake – meaning an effective SPI – at the river basin scale.

These results could be presented on the occasion of the EUROPE INBO annual conference of 2015.

► Tools

Policy brief

A policy brief is a concise summary of a particular issue, the policy options to deal with it, and some recommendations on the best option. It is aimed at all the actors who are involved in formulating, influencing or implementing policy or who have management decision to take and who need to be regularly informed about the state of the art on a specific scientific issue, in relation to their sector of activity.

While policy briefs can take different formats, a minimum of information is needed to make it relevant. A policy brief should thus:

- provide enough background for the reader to understand the scientific issue;
- convince the reader that the problem must be addressed urgently;
- provide solutions / ideas to face this problem;
- provide evidence to support these solutions (relevance, effectiveness);
- stimulate and support the reader to take a decision.

One of the CIS-SPI activity key conclusions is the need to adopt and promote a unique policy brief format for EU-funded projects, in order to ensure and improve the transfer and usability of research outputs.

The aim is therefore to improve the knowledge base of policymakers and practitioners. As they are busy people, and are probably not specialists on all research areas, they are likely to read something that looks attractive, appears interesting, and is short and easy to read. For all these considerations, the CIS-SPI ad-hoc activity have proposed and recommended a format of policy brief, which is presented in Annexe 2.

Power point presentations

To complete the policy briefs which will be distributed to each participant of the knowledge brokering seminar, power point presentations have to be prepared by the knowledge brokers in order to present the main results of the research projects.

Knowledge brokering event

Two main types of events can be organized: virtual ones (webinars) or physical ones (seminars).

Webinars are virtual sessions of about 2 hours on one or two subjects. Interaction between speakers and participants is allowed by way of a headset. A series of webinars are generally organized with an interval of many days or weeks between each one. The first advantage is that it is possible and easy to space 2 webinars, if for example, the team realizes that their needs have changed and the work of knowledge brokers have to be re-orientated. Another advantage is that it is not time consuming and it can prevent from travel costs. It is then more flexible and can allow very busy actors to schedule it in their agendas. The more significant inconvenience is the lack of personal contacts which is sometimes the key factor facilitating mutual understanding between people who don't necessarily know each other.

One-day seminars are the other typical option for a knowledge brokering exercise. The main advantage is to concentrate all the transfer of information about one scientific issue on one day. One of the main drawback is that if at the end of the day the policymakers and water managers are still not enough well informed on the theme, it will take a long time to organize a new seminar (and take time to search new projects according to the new needs thus identified), that is not necessarily consistent

with their agenda. In addition, everybody interested in the theme will have to travel (and so will have to pay for the associated costs).

► Human resources

It is difficult to clearly indicate the number of days that the work will represent for each members of the CoP, depending on their tasks.

However, the following Figure 2 gives an approximation of the amount of time that will be needed for each type of human resource to ensure a suitable progress of the knowledge brokering project.

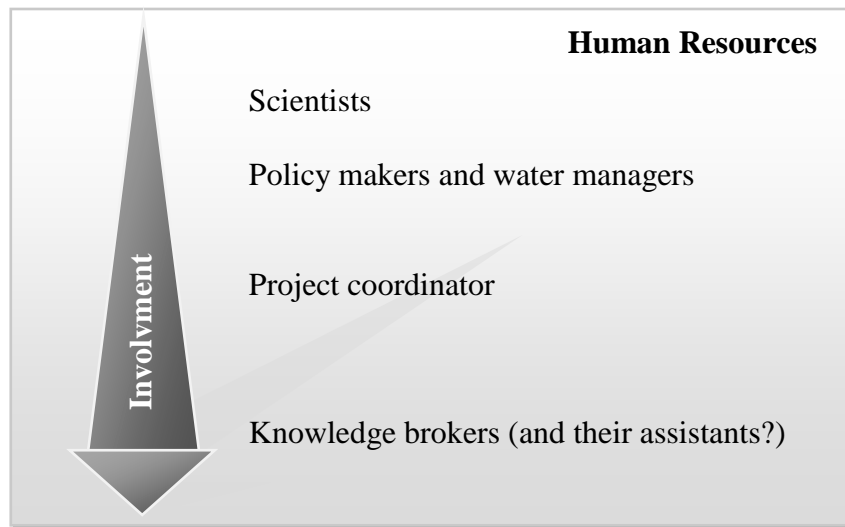


Figure 2: Relative amount of days of work for each type of human resource

► Possible timetable

A possible timetable for a knowledge brokering exercise is proposed in Figure 3. It may largely evolve depending on the project: theme, availability of actors, available data and knowledge addressing the scientific issue, agenda for policymakers...

Based on our on-going experience with the Irish river basin (ERBD), one of the main lesson-learnt is that the establishment of the Community of Practice is certainly the main blocking point. Depending on the ability of the project coordinator to involve all the stakeholders, to plan the project and to save early all the meeting dates and deadlines, the project could take more or less time. It is the reason why we mention in the timetable a first step consisting in pre-identifying the members of the CoP. This preliminary step also aims at ensuring the acceptance and the comprehension of the project by each actor.

Moreover, attention must be paid to the definition of the policy needs which have to be formulated in a clear sentence: “the scientific issue”. As it is highlighted in the blue box (page 11), the Irish scientific issue has largely evolved and it took a long time to clearly define the needs of knowledge of the Irish actors. Therefore, the time needed for this step must not be underestimated and in order to avoid it, the formulation of the scientific issue was identified as a preliminary step of a knowledge brokering exercise.

To finish, another important point is the choice of the people who will play the role of knowledge brokers. They who must be skilled persons, able to understand scientific results and to prepare communication tools, who have enough time to do correctly their mission, according to the planning decided by the whole CoP. These persons should also have good communication capacities.

► **Permanency of this knowledge brokering exercise?**

In this report, we describe, through our on-going experience with an Irish river basin, a method for knowledge brokering which we developed and are testing in the field, at the river basin scale. Our results on how to make an effective Science-Policy Interface at this local scale can nevertheless be transferred and applied to other European river basins.

Moreover, it is important to highlight the fact that the proposed method and tools for knowledge brokering, while being presented through a punctual exercise, could be used in a more systematic way with permanent actors at the river basin scale, allowing the permanency of such a SPI approach to support decision making and to ensure scientific knowledge dissemination.

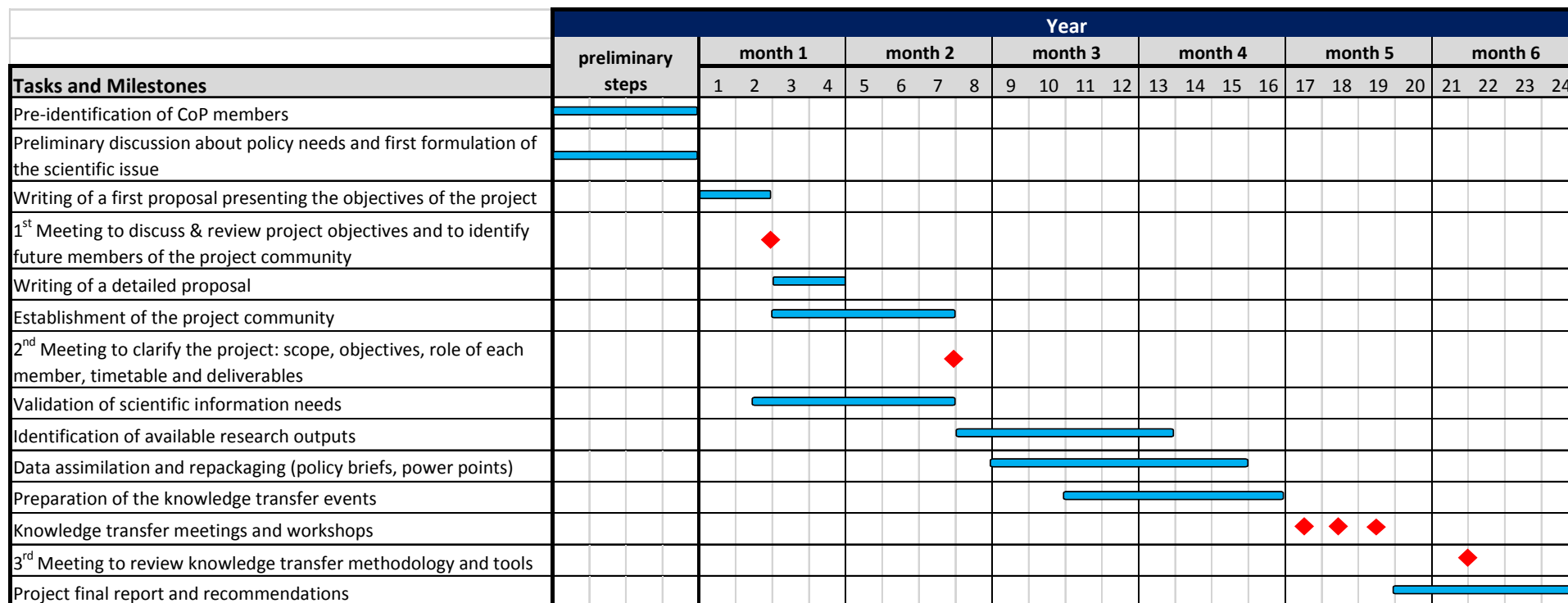


Figure 3: Possible timetable for a knowledge brokering project

Annexe 1: Knowledge brokering method based on CIS-SPI recommendations

1 Establishment of the Community of practice⁸



- Identification of a coordinator (accompanied by a team if possible) for the knowledge brokering exercise.
- Making preliminary contacts with the river basin authorities and/or managers in order to start developing a clear view of the needs of information.
- Writing of a first proposal to describe the delineation of the knowledge brokering exercise (report n°1).
- Identification of potential members to form a Community of Practice - CoP - that will contribute to the knowledge brokering exercise, with ensuring an appropriate balance between researchers, water managers and policy makers.
- Identification of knowledge brokers (be sure of their skills and availability).
- Writing a second detailed proposal (report n°2) and communicate it to all the members of the CoP to ensure that all are on the same lines (theme, scientific problematic, data needs, list of the team members and role of each, timetable).
- Organization of a meeting with all the CoP to agree on the knowledge brokering exercise objectives and frame or modify it and to clarify the role and the tasks of each member of the CoP.
- Starting monitoring of the progress of the knowledge brokering exercise, the work done and the involvement of each member (role of the coordinator).

2 Definition of the needs of information



- Pre-identification of the scientific issues to be addressed and covered by scientific knowledge with the river basin authorities and water managers (part of the CoP).
- Description of these data/information requirements in a first proposal (report n°1).
- Review and validation of them with the CoP.
- Formal writing of the knowledge needs in the second detailed proposal (report n°2), validated during a meeting with the whole CoP.

3 Search of scientific projects



- Identification, with the whole CoP, of all the available research they know (either national or European ones) about the theme – *the scientific projects could be finished or on-going*.
- Compilation of all these research projects by the knowledge broker(s).
- Identification of relevant research projects that are supposed to fit knowledge needs (related to the knowledge needs) for instance among those listed in the CIS-SPI report or more recent lists (that is a prime role of knowledge brokers).
- Review of literature by knowledge broker(s) in order to find additional research projects.

⁸ Community of Practice: meaning the project team or the project community, cf. Figure 1

4 Reading and comprehension of available knowledge



- This step is certainly the most time-consuming one and then the step during which knowledge brokers must dedicate the most of time of work.
- Knowledge brokers have to read all the research projects potentially relevant and to identify among them those who are really relevant.
- Knowledge brokers may need to contact the consortia of research projects to ensure their good understanding of their scientific results.

5 Writing of Policy briefs



- Knowledge brokers have then to prepare material to transfer the available knowledge (e.g. power points and policy briefs) of each relevant research project fitting the needs – a model of policy brief has been proposed by the CIS-SPI activity (cf. Annexe 2).
- Knowledge brokers may need to contact the consortia of research projects to ask for some detailed information (not available to the public) such as for example the policy milestones.
- Ideally, these 2 transfer supports should be validated by the consortia of each project (at least by their coordinator), before being presented to the CoP.

6 Knowledge transfer



- The knowledge brokering could take the format of 1-day seminar or a series of webinars to present the different scientific projects which have been identified and to allow discussions about their results.
- It should also be the occasion to highlight new needs of knowledge or gaps of scientific data.
- These events have to be organized by the coordinator with the CoP.

7 Review



- Meeting with the whole community of practice:
 - To review knowledge brokering method and tools: advantages and drawbacks.
 - To answer to the following questions, about the policy brief template proposed:
 - Is this tool useful? Understandable? Written in an appropriate language?
 - Does it answer the real needs in order to take well-informed policy decisions?
 - What kind of information is missing? How can it be improved? Better customised?
 - Can somebody present a more relevant tool?
 - To have the knowledge needs been covered? Are the policymakers enough informed about available scientific evidence on the theme?
- Writing of a final report with recommendations to improve the present knowledge brokering method and the associated tools in view of another knowledge brokering exercise.

8 Follow up



- Note: This step is not formally part of the knowledge brokering exercise but may surely help share and improve the knowledge brokering principles.*
- Presentation of the results of this knowledge brokering exercise on the occasion of the annual conference of EUROPE INBO.
 - Communication of the results and the scientific knowledge gaps to SCG and CIS WG and to the national policymakers of the river basin (local policymakers of the team).

Annexe 2: Policy brief format template proposed by CIS SPI ad-hoc activity

The table hereafter is specific to the framework of the WFD and the European projects. The fields to fill are given, but the format can be totally different and more friendly/ attractive, while respecting the graphical chart of the project: logo, pictures, contact, etc.

Study area
Objective/theme of the supporting activity
Two-three lines about the theme of the research/demonstration/capacity-building activity with policy relevance
Contribution to ... Reference of the policy (directive & specific milestones)
Policy focus:
Short description of the policy goals
CIS group thematic concerned:
Key policy milestones requiring technical/scientific support:
<ul style="list-style-type: none"> ◆ Policy technical milestone(s) ◆ Explaining why technical support is needed (and recalling possible previous related decisions)
Key outputs in support of policy milestones
Short introduction of the policy milestones and
Summary of key inputs provided by supporting activities (including possible implementation and/or validation by users):
<ol style="list-style-type: none"> 1. XXXXXX (specify potential target groups) 2. XXXXXX 3. XXXXXX 4. XXXXXX 5. XXXXXX
Shortcomings
Experiences gained – Recommendations to policymakers – Next steps
Short description about recommendations and perspectives

Annexe 3: Attendance sheet used to help roles identification within the project team

NAME Firstname	Position	Organisation	e-mail	Phone number	Possible role (you can tick several roles)				
					Policy maker	Water manager	Scientist	Knowledge broker	Other (please specify)



*Office
International
de l'Eau*

15 rue Edouard Chamberland
87065 Limoges Cedex
Tél. (33) 5 55 11 47 80
Fax. (33) 5 55 11 47 48 www.oieau.org



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