

COMMUNICATING SCIENCE

Knowledge Brokerage and Knowledge Transfer

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OUTLINE

1. PRINCIPLES OF KNOWLEDGE TRANSFER

- Trends In Science Communication
- Communication, Why?
- Terminology
- Knowledge Brokerage (KB) Approach
- Science Policy Interface
- **DISCUSSION**

2. TOOLS

- Dissemination Of Outputs – Individual Dissemination Strategies
- Web 2.0 Tools – European Water Community
- Carrying Out Dissemination - Events
- **DISCUSSION**

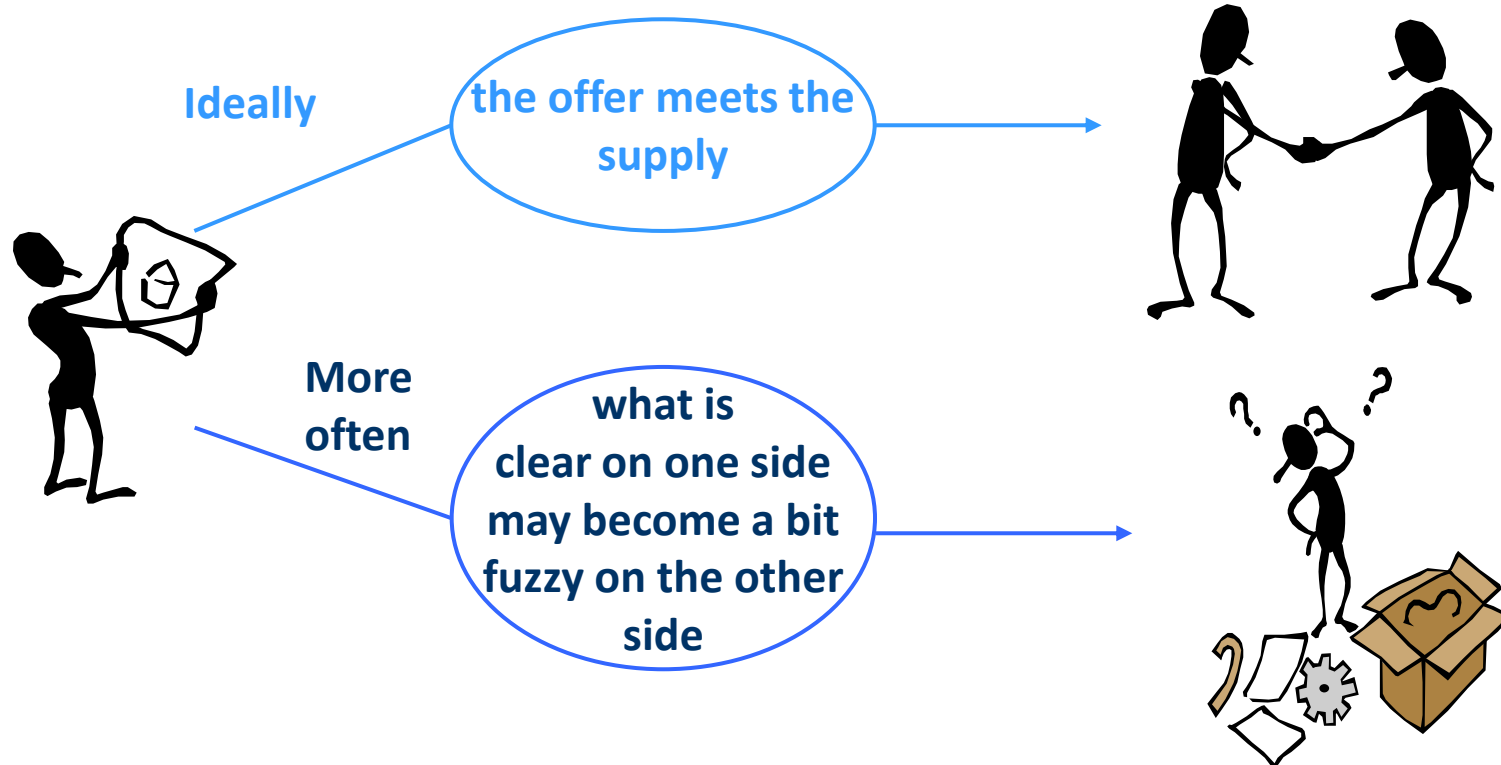
3. EXPERIENCES OF KB

- KB Initiatives In Water
- Working With Knowledge Makers
- Working With Knowledge Users
- Lessons Learned
- **DISCUSSION**

1. PRINCIPLES OF KNOWLEDGE BROKERAGE

TRENDS IN SCIENCE COMMUNICATION

$$\text{SCIENCE} + \text{COMMUNICATION} = M \cdot C^2$$



TRENDS IN SCIENCE COMMUNICATION

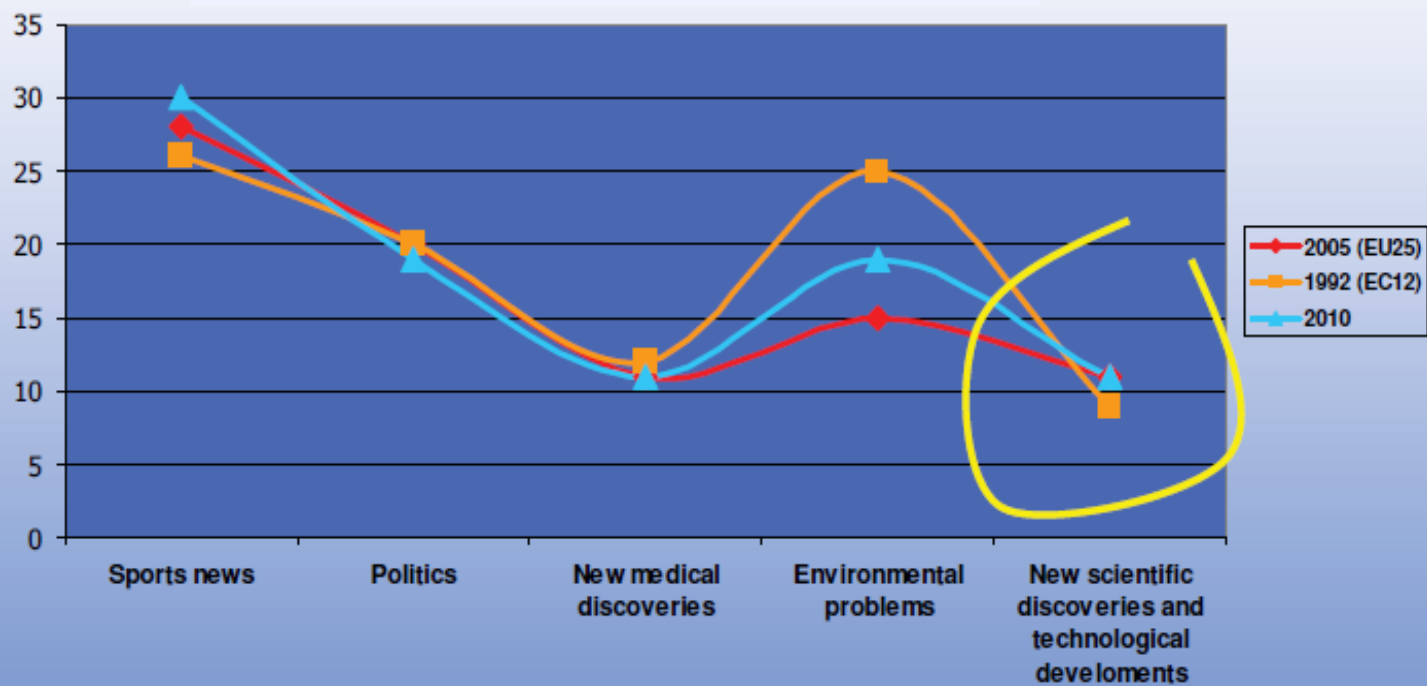
Flow of Information

- *The internet is the main source of information for learning about specific scientific issues such as global climate change.*
- *Amount of information is enormous*



TRENDS IN SCIENCE COMMUNICATION

% people well informed in science → low



TRENDS IN SCIENCE COMMUNICATION

Funding programmes are integrating contractual obligations regarding communication.

Communication in FP7

Grant agreement, Annex II, General conditions II.12. Information and communication

The beneficiaries shall, throughout the duration of the project, take appropriate measures to engage with the public and the media about the project aims and results and to highlight the Community financial support.

Communication in LIFE +

The communication obligations for LIFE beneficiaries include:

- *Creating a project website.*
- *Submitting audio-visual material on two supports.*
- *Erecting and maintaining notice boards*
- *Informing and inviting the European Commission to all seminars and public conferences.*
- *Writing a “Layman’s Report”*
- *An “After-LIFE Communication Plan” projects)*

TRENDS IN SCIENCE COMMUNICATION –

- *Communication often breaks down across disciplines / sectors: effective communication in Integrated Water Management?*

- *Research on technologies does not automatically create technological innovation*
- *Scientists are often overloaded with task of communicating*

- *Reluctance of some industries to innovate (technological inertia)*
- *Lack of investment and time in knowledge transfer and uptake*



COMMUNICATION, WHY?

Bringing science to the public... and public to the science

- To show how *societal challenges* are addressed by science
- To show how *scientific outcomes* are relevant to our *everyday lives*
- To make a better and profitable *use of scientific results*



TERMINOLOGY

Promotion – Raising awareness

- *‘The activity of making potential users aware of ‘something’ and increasing its accessibility ‘ (Garforth 1996)*

Dissemination – targeted provision of information

- *(historically) ‘The process through which an innovation is communicated through certain channels over time among the members of a social system’ (Dearing, 2008)*
- *‘The targeted distribution of information and intervention materials to a specific audience’ (Schillinger, 2010)*

Uptake – Exploitation

- *‘Knowledge or innovation utilization by target groups’ (Landry, 2003)*
- *‘Application of knowledge and technology by users’ (Garforth 1996)*

THE SCIENCE POLICY INTERFACE

The Science-Policy Interface

- *Interaction between researchers and policymakers is limited by the divergence of these two worlds*
- *Academics have often very limited understanding of the policy makers and lack awareness of benefits from learning more about these (Clark and Kelly 2005)*

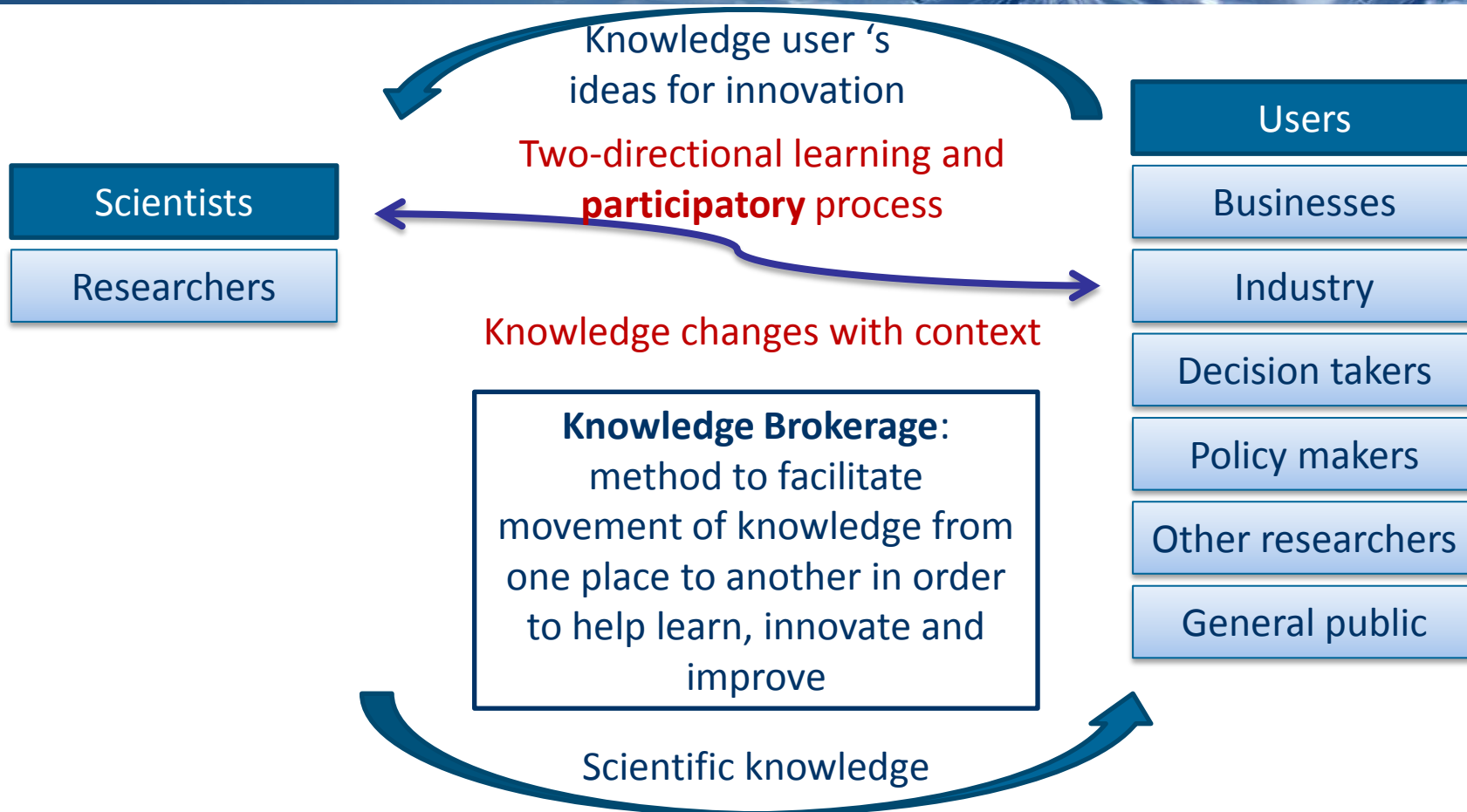
Science	Policy
Understanding the world	Managing the world
Uncertainty is a fact	„Yes‘ or „No‘ decision wanted
Clientele diffuse or not present	Clientele present and insistent
Failure and risk acceptable	Failure and risk intolerable
Underestimate the complexity of policy	Overestimate the precision of science
„they ignore the hard evidence“	„they should learn about process and context“

THE KNOWLEDGE BROKERAGE APPROACH

The dilemma

- *Water Management and its supporting knowledge are on a harmonized path among European Member States through the implementation of the Water Directive Framework (WFD), which came into force on December 22nd 2000 (Directive 2000/60/CE).*
- *More than 10 years later a lot of knowledge has been produced, yet it does not seem to have fulfilled water management needs. FUNDETEC (FP6-project) final report (12/2007)*
- *With the number of channels increasing, dissemination efforts have become more decentralized and more multifaceted, including repetitive messages being delivered through a suite of mediums*

WHAT IS THE KNOWLEDGE BROKERAGE APPROACH?

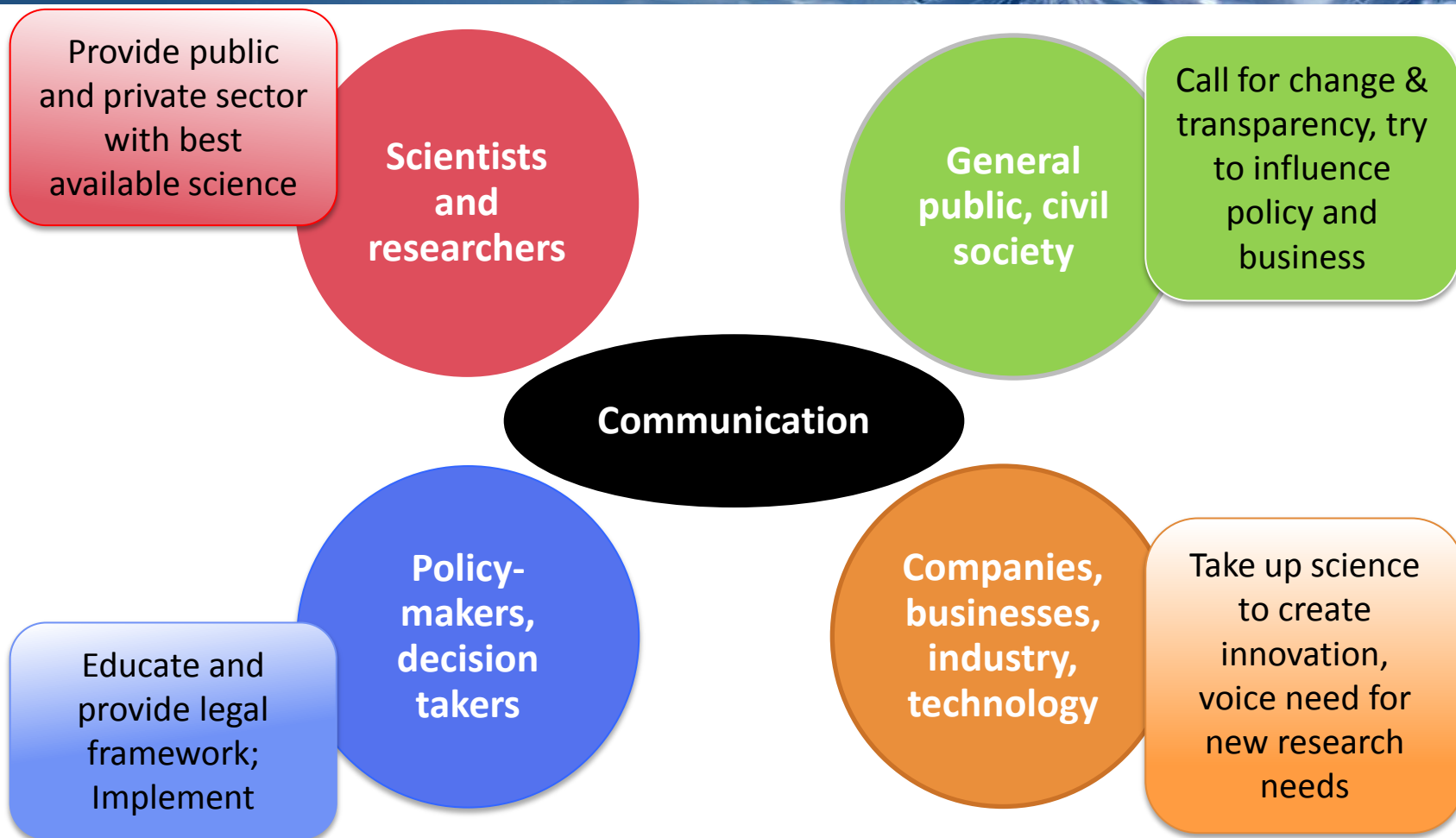


KNOWLEDGE BROKERAGE: TOOLS AND FORMATS

Benefits

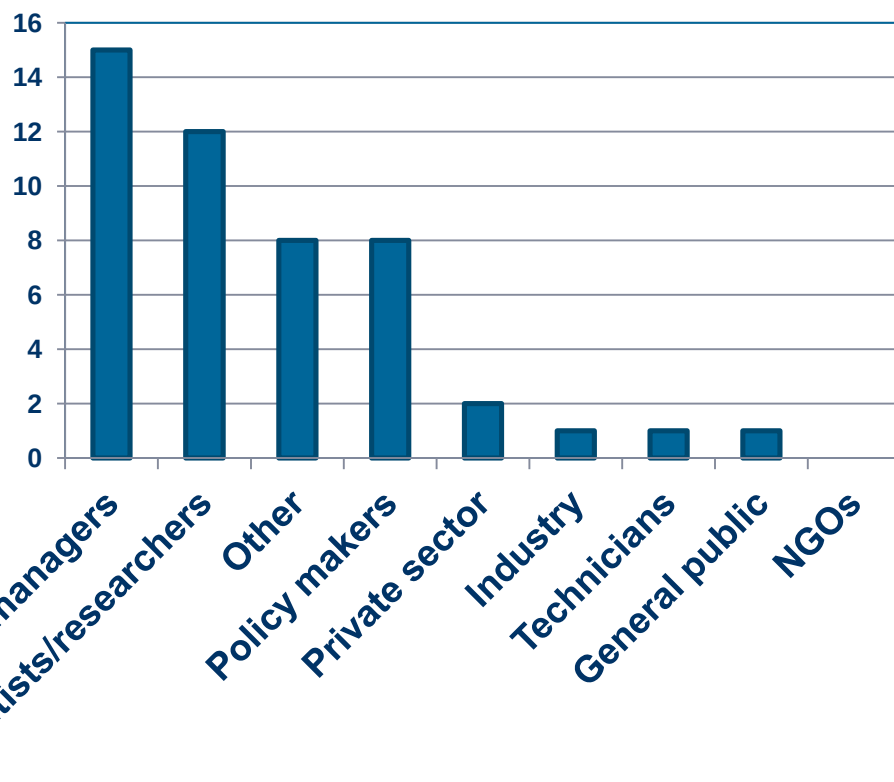
- *Shared understanding*
- *Provides responses to dilemmas and uncertainties in policy and management*
- *Support for research findings and joint action*
- *Develops a common language*
- *Matches policy and research needs*
- *Adjust timing differences between the two systems*

SCIENCE COMMUNICATION: ACTORS AND ROLES



WaterDiss2.0: ANALYSIS OF DISSEMINATION AND UPTAKE

Relevant target groups

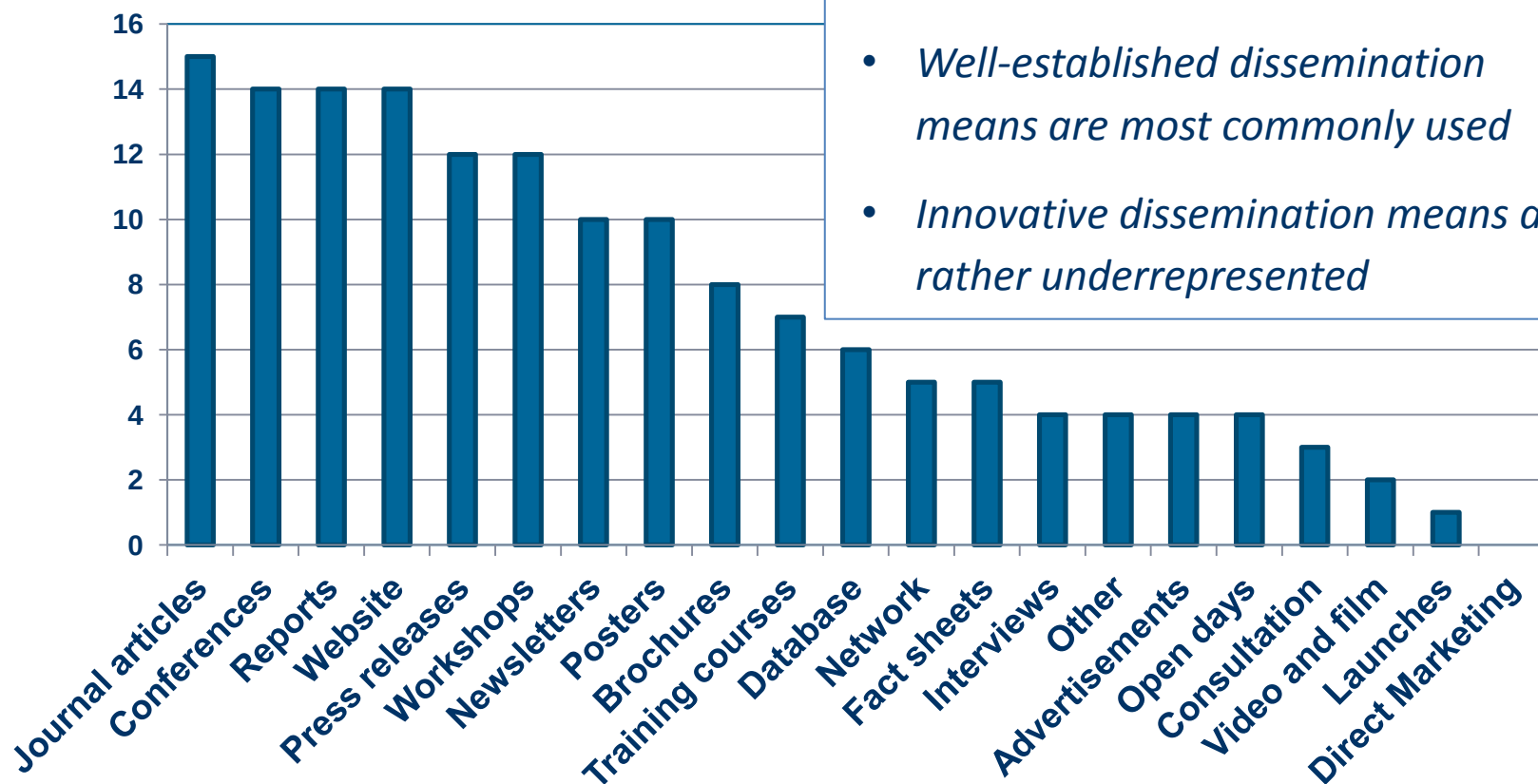


Online-Questionnaire and interviews with projects coordinators

- 22 responses from 60 projects to questionnaire
- 12 follow-up interviews with project coordinators

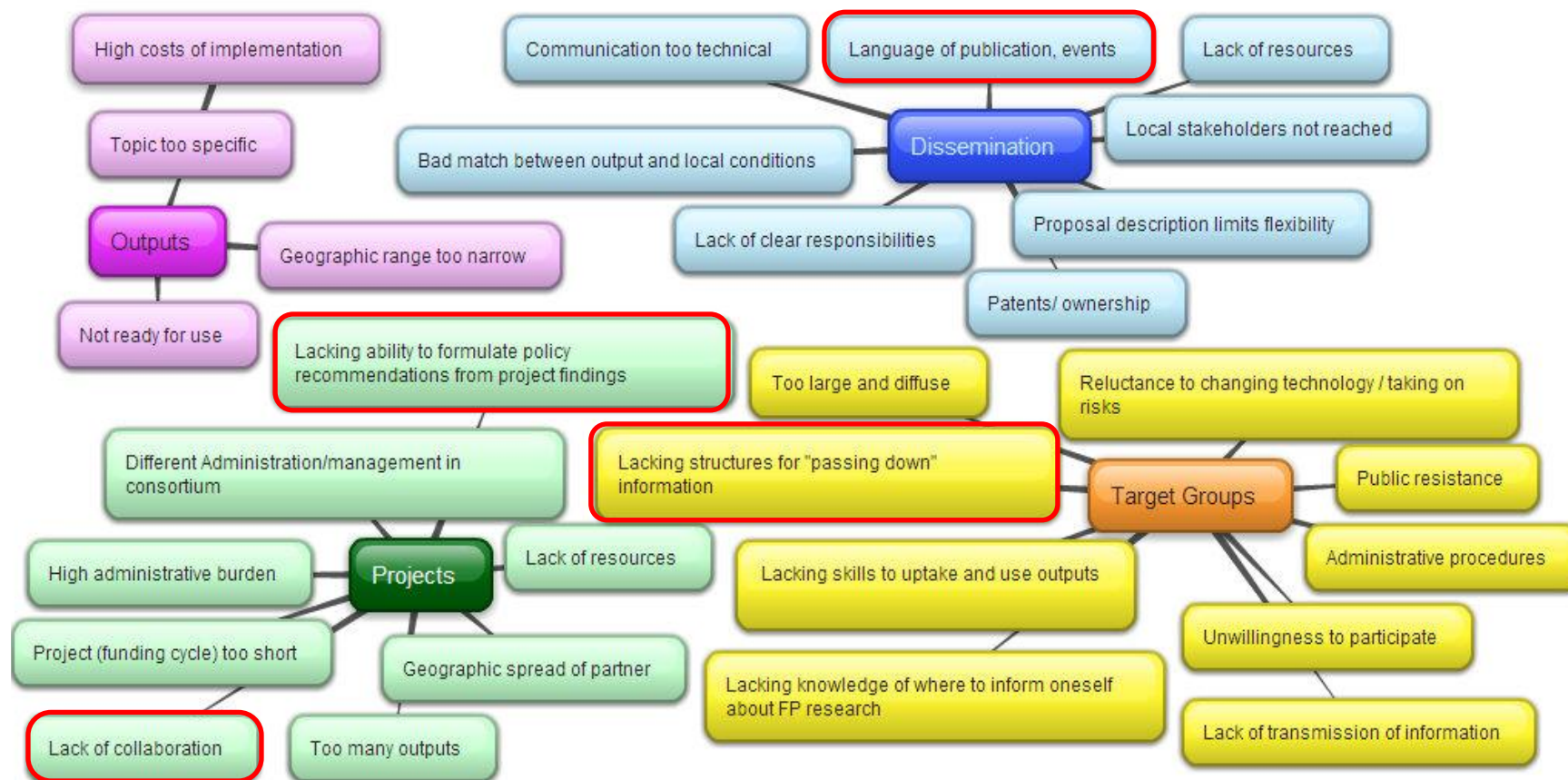
WaterDiss2.0: ANALYSIS OF DISSEMINATION AND UPTAKE

Relevant dissemination means

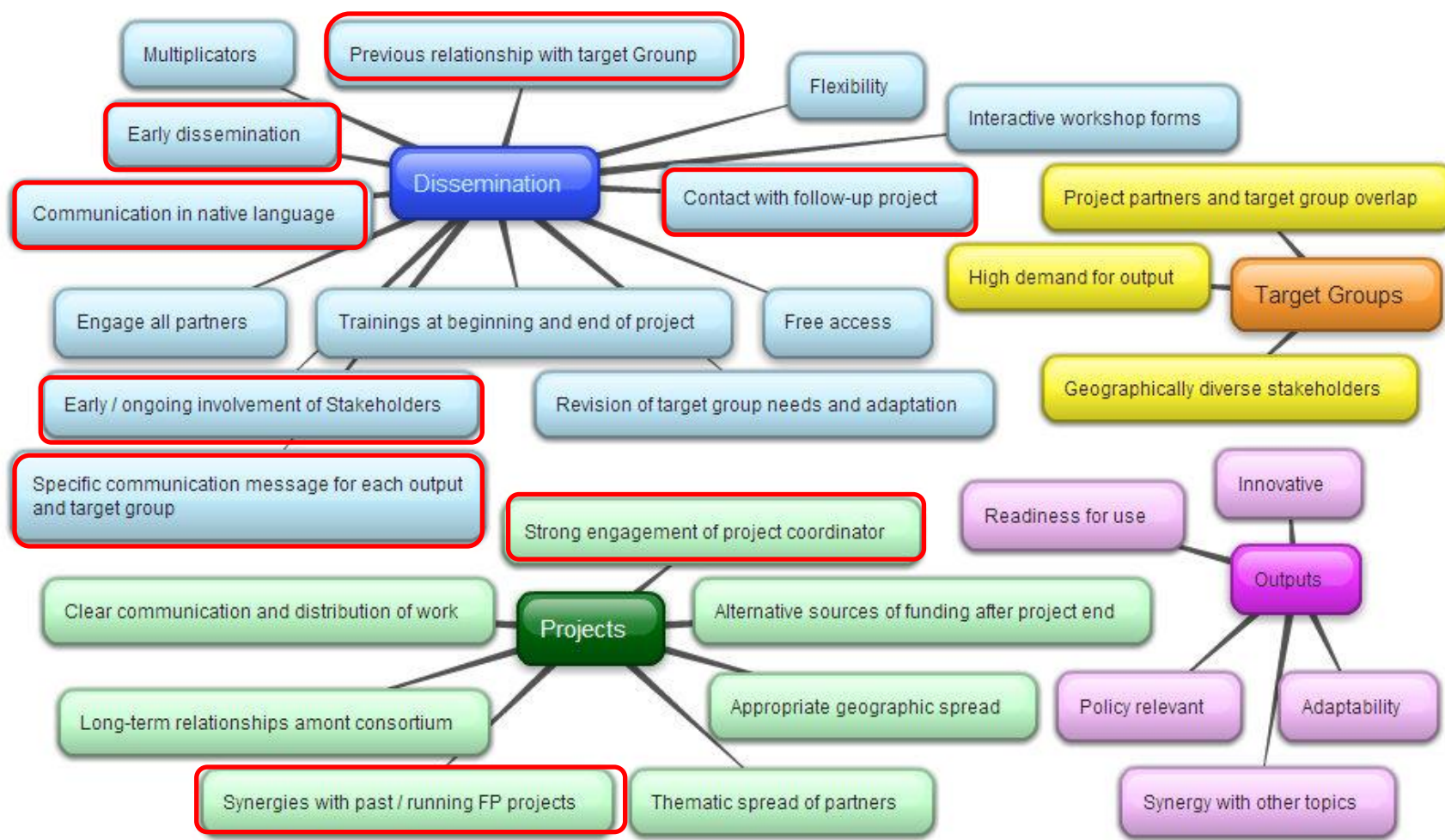


- All projects used multiple means to reach their target audiences
- Well-established dissemination means are most commonly used
- Innovative dissemination means are rather underrepresented

TYPICAL BARRIERS FOR KNOWLEDGE TRANSFER



TYPICAL FACILITATORS FOR KNOWLEDGE TRANSFER



QUESTIONS FOR DISCUSSION

Your own experiences

- *Which dissemination means do you normally use?*
- *Which cited barriers for uptake do you recognize? Which facilitators?*

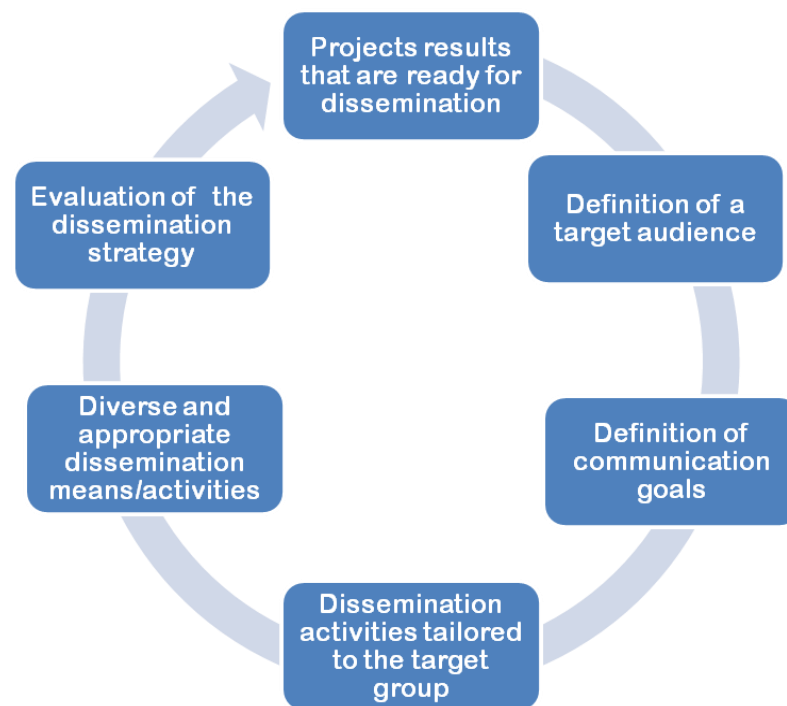
General trends

Are contractual obligations regarding dissemination in research funding problems good enough to guarantee quality of dissemination? How to monitor its success? Should there be some procedures?

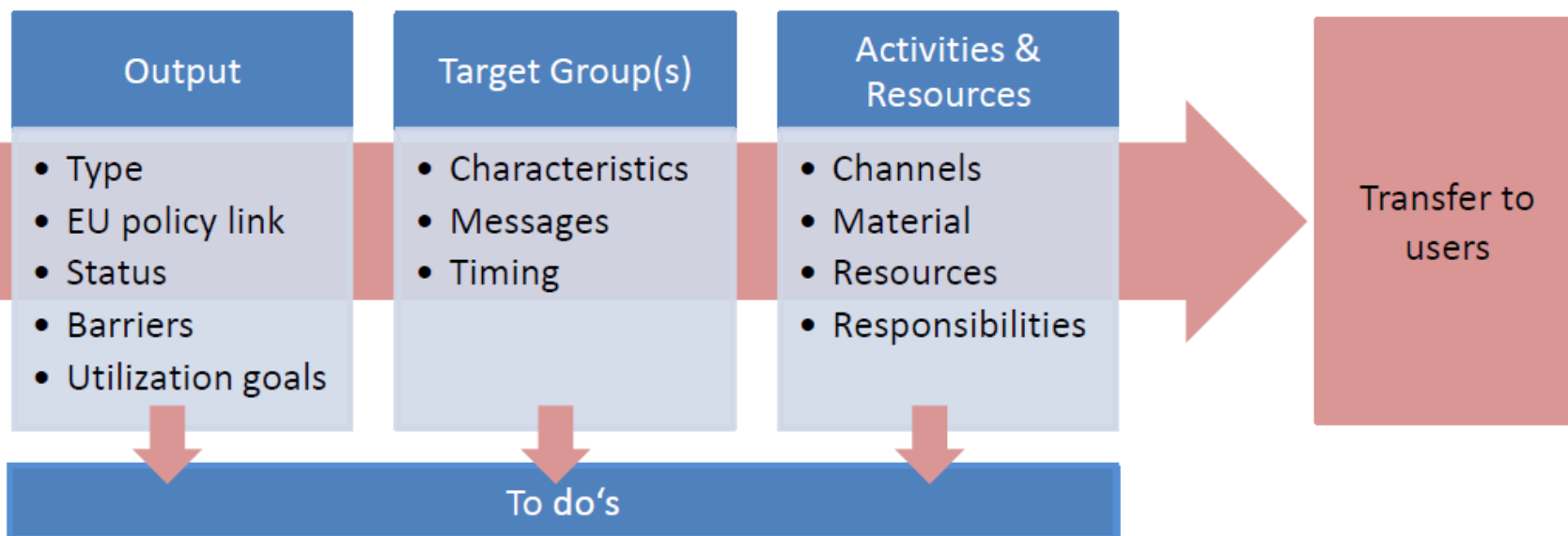
2. KNOWLEDGE BROKERAGE TOOLS

DISSEMINATION STRATEGY

- *To support the dissemination of research outputs to the potential users*
- *Adapted to a specific output*
- *Ensuring the good dissemination format and language*
- *Develop the DS right at the beginning of a project*



INDIVIDUAL DISSEMINATION STRATEGY (IDS)



INDIVIDUAL DISSEMINATION STRATEGY EXERCISE

**Saturday
10th August**

**Developing an Individual Dissemination Strategy (IDS) at
research output level**

BEFORE SATURDAY:

KEEP AN EYE ON THE RESEARCH OUTPUTS PRESENTED DURING
WEDNESDAY, THURSDAY AND FRIDAY SESSIONS.

WEB 2.0 TOOLS: EWC

The European Water Community

provides **dedicated space** to water stakeholders:



For **researchers** to promote outputs and ensure they reach the operational area

For **practionners** (Water managers, consultants, suppliers...) to access the appropriate tools/methods to fulfill their needs

Join now on

www.europeanwatercommunity.eu

WEB 2.0 TOOLS: EWC



WEB 2.0 TOOLS: WISE-RTD

Water Knowledge Portal

WISE-RTD

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News

- STEP-WISE 3rd Newsletter...
- SPI-Water Conference 3-4 Dec 2012...
- New eLearning available

Policy related information

- Towards efficient use of water...
- Implementing Water Assets...
- Water resources in Europe in the...

Science & technology related information

- Adaptive strategies to Mitigate...
- Development of remote sensing...
- (COROADO) Technologies for Water...

CARRYING OUT DISSEMINATION EVENTS

Workshops

- A **brief intensive course** to disseminate information about relevant projects and their outputs to water managers and practitioners. The scope of this dissemination is spatially and topically focused on **specific target groups**.

Brokerage Events

- Typically **1-day side-events** organized **back-to-back** with larger regular events such as **trade shows, exhibitions, or conferences**. **Project representatives interact with stakeholders** through booths, stands, and posters.

Summer Schools

- Target **young researchers and practitioners**. They aim to promote inter-relationships, interdisciplinary approaches, and sharing of research. They also **facilitate networking** for future consortia.

E-Seminars

- **One-two hours session, low attendance**, specific topically oriented (useful to explain outputs to key contacts). **High percentage of effectiveness**.

CARRYING OUT DISSEMINATION EVENTS

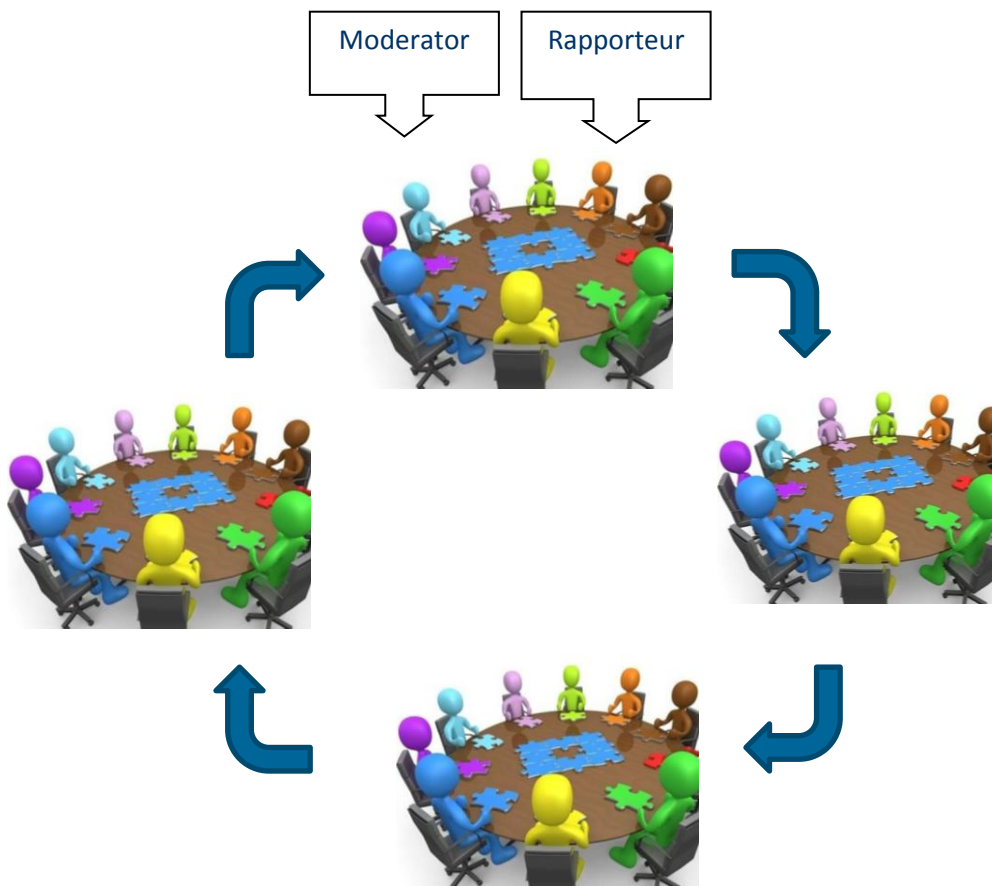
Engagement methods

- *Role playing games*
- *Scenario workshops (20-25 p.)*
- *Focus groups (20-25 p.)*
- *Face to face interviews (1-3 p.)*
 - Informal, conversational interview
 - General interview
 - Standardized, open-ended interview
 - Closed, fixed-response interview
- *World cafe (15 and 40 participants)*



WORLD CAFE

- *Workshop on a topic of mutual interest*
- *1-2 open-ended questions*
- *Change table/topic after approximately 30 minutes*
- *Rapporteur presents a summary from each table*



QUESTIONS FOR DISCUSSION

- *Have you ever used one of the mentioned tools? What was your experience (good/bad examples)?*
- *Do you think those tools can improve the impact of your research?*
- *What do you think is the added value of engaging target groups?*

3. Dissemination – Good practices & recommendations

EXPERIENCES TACKLING SPI AND TECHNOLOGY INNOVATION

- The SPI activity of the [Common Implementation Strategy \(CIS\)](#) developed in the context of the WFD.
- The **WSSTP (European Technology and Innovation Platform)** is a legal entity operated by the European water sector. WSSTP aims at accelerating knowledge and technology transfer.
- The “**European Innovation Partnership on Water**” (EIP) being currently developed by the European Commission. EIPs help to pool expertise and resources by bringing together public and private actors at EU, national and regional level .
- The **Joint Programming Initiatives (JPI)** on “**Water challenges for a changing world**” coordinates between research funding bodies of Member States .
- Several support projects launched in 2010 and 2011 by the European Commission for improving the dissemination and uptake of previous research outputs: **AWARE, PSICconnect, STEP-WISE, STREAM, INNOWATER, WaterDiss2.0**

GOOD PRACTICES: EXAMPLES

FP6 BRIDGE - Background criteria for the IDentification of Groundwater thrEsholds (2005 – 2007)

- *Strong involvement of project partners in the national WFD implementation*
- *Used a diversity of dissemination tools, from scientific papers to websites and newsletters*
- *Strong involvement of the advisory board with DG-ENV and DG-RTD*
- *Timing of dissemination activities according to the timetable of the CIS WGC on Groundwater*

LESSONS LEARNT FROM WATERDISS2.0: WORKING WITH KNOWLEDGE MAKERS

- *Success of KB much depends on:*
 - *the stage of a project in its lifecycle*
 - *the willingness of the project coordinator to engage in the process*
 - *a close cooperation of all partners*
- *Frequently collaborative projects have multiple target groups, but show a lack of sound characterization of potential users*

LESSONS LEARNT: WORKING WITH KNOWLEDGE USERS

- *Identification of target groups in an early project stage is needed (proposal phase!)*
- *Effectiveness depending on the **right choosing of representatives***
- ***Knowledge users** are often lost in the web and sources of information*
- ***Messages** need to be 'translated' for users*

LESSONS LEARNT FROM WATERDISS2.0 : DISSEMINATION MEANS AND CHANNELS

- *Face-to-face meetings and **participatory approaches** are effective communication channels but are time-consuming*
- ***Virtual aspects and social media** are highly relevant (e.g. Twitter)*
- ***Social media** need a critical mass of 'followers' and active participants*
- ***Open access to data and information** - requires paradigm shift
(Gatekeepers: Public, Journals, researchers)*

QUESTIONS FOR DISCUSSION

- *How can river basin managers and water authorities use knowledge created from your research?*
- *Which adjustments are necessary to improve and increase usability of the output?*
- *Do you think KB is a useful method to increase the impact of research?*
- *How can new technologies and social networks be useful and what are the factors limiting their use?*

FURTHER LINKS

- *European Water Community: sign up and start sharing!*
www.europeanwatercommunity.eu/
- *WaterDiss2.0 events: waterdiss.eu/events*
- *STREAM: Sustainable Technologies and Research for European Aquatic Management, www.stream-project.eu*
- *Summer School 2012: Flood Risk Management, Oxford, 16th – 20th July 2012, <http://www.waterdiss.eu/node/57>*

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