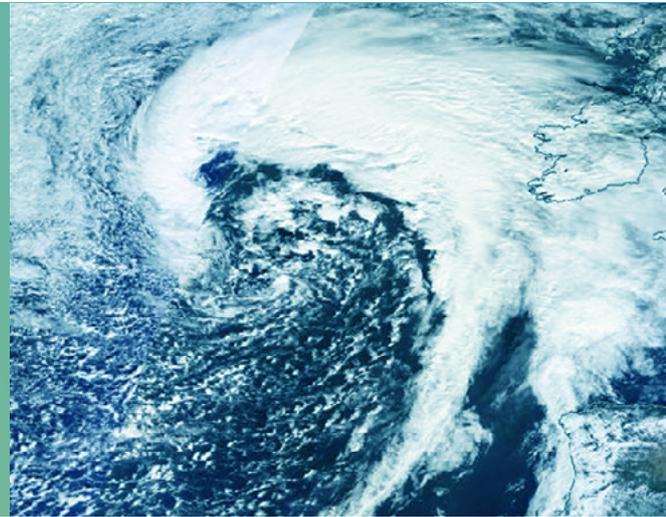


POSITION PAPER

Towards more action-oriented research and climate services



Lessons learned from IMPRES



This paper presents lessons learned on successful science-policy, science-practice and science-science interfaces for increased impact of research and innovation. The paper provides recommendations on research policy, program design and project organization for more fruitful European research.

INTRODUCTION

Population growth, urbanization and a changing climate ask for sustainable adaptation strategies of the water sector in Europe. This comes with a continued need for tailored knowledge and improved tools in the field of water management and climate services to support design and implementation of sustainable adaptation strategies. This need has been recognized in the past decades and is reflected in a multitude of funding programs that were initiated within the European Union. These programs usually require close collaboration with (water management) practitioners, contributions to relevant policy processes and networking and coordination with other research activities. Due to these requirements European research can reflect on a collection of advancements that not only includes scientific progress but are also demonstrated by a multitude

of new concepts and tools that are implemented to support sustainable water management. Their success is strongly supported by feedback-loops between science, practice and policy.

To ensure progress, it is crucial to regularly evaluate success factors as well as obstacles of large European research and innovation projects. The four-year Horizon 2020 funded research and innovation project IMPRES brought together 23 partners in 14 work packages to deliver around 60 deliverables which encompass a multitude of approaches, tools and methods for water and water-dependent sectors. Building on its collaborative approach, the project provides valuable lessons for improved cooperation with policy-making and practice as well as for project organization and design of research programs of future initiatives.



SCIENCE - POLICY INTERFACE

How can research and policy processes be aligned?

The past decades have brought increasing awareness of the benefits of collaborations between research and policy-making. Growing attempts to open policy review processes to scientific experts, a variety of exchange programs between scientists and policy-makers, and a broad range of science-policy conferences bear witness to this development.

However, despite this general development, cooperation between science and policy-making within the frame of research projects is still subject to improvement. Efforts are required from both sides.

Effective communication from science to policy-making requires significant synthesis and translation efforts, since focus of attention and style of communication differ greatly between science and policy. Moreover, it requires understanding of European policy frameworks and processes as well as networks to identify and use windows of opportunities to transfer scientific knowledge into policy processes. From the policy side, it requires willingness to learn from science and to base decisions on scientific

evidence. Moreover, entry points for research results into decision-making processes are needed.

IMPRES showed that involving with experts in science-policy interfaces (policy consultants) was a great addition to efforts taken by scientific partners. Within IMPRES, for example, this helped facilitating a presentation of IMPRES policy recommendations to high-level audiences in relevant policy events (in this case the EU CIS Working Group on Floods).

However even with expertise and experience in policy consulting, transfer between science and policy is still not straight forward and requires close monitoring of policy processes and discourse and investigation to identify available opportunities. For example, within IMPRES it was a lucky coincidence that project runtime synchronized with the review of the Water Framework Directive, which offered a variety of opportunities to contribute scientific findings to current political debates. This is often not the case for research projects of short- to medium-term runtimes.



SCIENCE - PRACTICE INTERFACE

How much collaboration and at which stage is actually beneficial for all parties?

Close collaboration between research and practice is often considered key to providing tools and methods that are relevant for and tailored to practical needs. Therefore today, most research and innovation programs successfully meet the requirement to collaborate with practitioners in research projects, and the tendency is upward.

However, time-limitation of both parties, trust issues, different expectations and the balance between transferability of results and their tailoring to the specific needs of partners make these joint research efforts challenging at times. Especially since practitioners that are well known for their willingness to be engaged are swamped with requests for collaborations.

Within IMPREX, building on established long-lasting cooperation helped joint understanding of planned research outcomes and (pilot) implementation.

Communicating openly on resources required from both parties as well as on restrictions, e.g. in data availability and sharing, helped create realistic expectations and trustful relationships. A well designed stakeholder participation process supported efficiency and effectiveness of cooperation throughout the project. This included a more intensive kick-off phase to identify stakeholder needs, followed by looser stakeholder engagement throughout the research process and again closer engagement in the final implementation phase. The experience shows, good expectation management as well as well-designed engagement cycles are key to making cooperation successful! Nevertheless it also became apparent that stakeholder engagement - no matter how well managed - retains considerable resources on both sides which gives rise to the question: “how much collaboration is actually good and needed and at which stage?”

SCIENCE- SCIENCE INTERFACE

What is needed to learn from one another?

One interface that still receives relatively little attention in making the output of research more efficient is the science-science interface in terms of coordinating research and communicating results in the research world.

It is taken for granted that research builds upon the latest insights in the field. However, in designing research projects, scientists are often not aware of all relevant work conducted by other research groups - or valuable research outcomes, like models and data sets are simply not shared openly and transparently. A major driver hereof is the ever growing competition in the scientific world, a general publication bias towards “successful” research paired with a lack of investigation of unexpected results. Consequentially research misses opportunities to learn from experience thus proceed efficiently.

While this calls for a paradigm-shift in research towards more openness and acknowledgement of the value of unexpected results, research projects can attend to related issues effectively.

For instance, collaborating with legacy-rich institutes in research projects, as done in IMPREX, facilitates exploitation of knowledge of latest research and scientific developments (in addition, it promotes implementation of research findings in operational applications.) IMPREX furthermore showed that building an open and transparent atmosphere, characterized by data exchange and sharing and frankly discussing all results (not only expected or desirable ones) is an important step to open debates, an increased level of learning from each other and creating well-reflected results. Furthermore, IMPREX required different research groups to provide results, data and models to other work packages right from the beginning.

RECOMMENDATIONS

RECOMMENDATIONS FOR THE EUROPEAN COMMISSION:

- **Actively invite and facilitate contributions from research to policy processes.** Continuous and active reaching out to the scientific by policy-makers world will support evidence-based policies. New formats, like regular workshops or scientific consultation could facilitate research contributions. Moreover, permanent communication channels, like platforms, could support continuous engagement that is independent from e.g. review processes.
- **Ensure coordination between policy processes and research programs.** Close coordination between DG Research and DG Environment helps align processes and opens up entry points supporting transfer of research results into policy processes.

RECOMMENDATIONS FOR RESEARCH PROGRAM DESIGN:

- **Acknowledge that transferring research results into policy processes requires significant time and expertise.** In order to care for fruitful output from science-projects to policy-making, research funding program should allow for allocation of respective resources.
- **Carefully evaluate the right level of required involvement of practitioners.** Building and maintaining trustful relationships with practitioners takes time. Requirements for cooperation between science and practice within short- and medium-term research projects therefore need to be realistic and time-frames be adjusted accordingly, e.g. by extending project runtimes and/or allowing for longer kick-off phases if much cooperation is required.
- **Facilitate implementation of research results.** Uptake of research results beyond the end of research projects can be facilitated e.g. by supporting spin-offs or funding implementation programs, like EU Life.
- **Provide funding for replication studies and follow-up research.** Unexpected results and “unsuccessful” experiments may offer great opportunities to learn and develop innovative solutions. Providing the means to follow-up prevents missing out on potentially important insights and not starting from scratch.

RECOMMENDATION FOR ORGANIZING RESEARCH PROJECTS

- **Collaborate with intermediaries to translate research results into policy advice.** Transferring science into meaningful recommendations for policy-makers requires dedicated effort. Cooperating with partners with specific expertise and experience in this work is sensible and helps finding appropriate formats, networks and windows of opportunities.
- **Building-up and sustaining networks with practitioners should be made a constituent task of project management.** Long-standing cooperation between research and practice provides the basis for most effective and successful collaborations. To ensure networking is attended with enough attention, it is sensible to make it an explicit task in research design right from the beginning.
- **Plan cooperation and stakeholder engagement well in advance.** Prescient interaction management right from the beginning saves time and resources throughout the course of the project.
- **Acknowledge the value of unexpected and “failed” research attempts.** To learn from mistakes and progress jointly, sharing all results is crucial. Project coordinators are well advised in making this a priority and caring for the needed open and transparent atmosphere.

This policy brief was compiled by **Theresa Lorenz and Annika Kramer** (adelphi) with special contributions by **Prof Bart van den Hurk** (Deltares). It is based on the work of the research project **IMPRES** and inputs from **IMPRES partners received during a workshop** on “Challenges and opportunity of/for applied science (Lessons learned from IMPRES)” at the **IMPRES General Assembly** (18– 20 June 2019)

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