

# BRIDGING THE SCIENCE~POLICY GAP: BEST PRACTICES IN CITIZENS' PARTICIPATION



CONNECTING RESEARCH, PEOPLE AND POLICY-MAKERS IN EUROPE  
TO ACHIEVE SUSTAINABLE WATER ECOSYSTEMS MANAGEMENT





# RECOMMENDATIONS

BRING CITIZENS, SCIENTISTS, STAKEHOLDERS, AND DECISION-MAKERS TOGETHER IN A PARTICIPATORY KNOWLEDGE BROKERAGE PROCESS TO IMPROVE DECISION-MAKING AT THE LOCAL LEVEL AND INCREASE OWNERSHIP OF CHALLENGES AFFECTING CITIZENS ACROSS EUROPE

FOCUS ON LOCAL LEVEL IMPLEMENTATION WHILE ALSO FEEDING THE LESSONS LEARNED BACK INTO EUROPEAN LEVEL POLICIES

TAKE INTO ACCOUNT CULTURAL AND EMPOWERMENT DIFFERENCES WHEN IMPLEMENTING A KNOWLEDGE BROKERAGE PROCESS, ESPECIALLY TO ENSURE A FAIR LEVEL OF TRUST IN THE PROCESS OUTCOMES

BRING CITIZENS, SCIENTISTS, STAKEHOLDERS, AND DECISION-MAKERS TOGETHER REGULARLY TO ALLOW FOR TRUST BUILDING AND EFFECTIVE LEARNING AND KNOWLEDGE SHARING

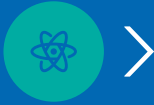
INVOLVE LOCAL CIVIL SOCIETY ACTORS TO BEST REACH AND ENGAGE WITH THE BROAD PUBLIC

ENGAGE ALL RELEVANT ACTORS TO THE EXTENT POSSIBLE, PARTICULARLY THOSE FROM RELEVANT INDUSTRY OR ECONOMIC SECTORS

INVOLVE A TEAM OF SCIENTISTS THROUGHOUT THE KNOWLEDGE BROKERAGE PROCESS. 'SCIENTIFIC AMBASSADORS' COULD COMMUNICATE CRITICAL INFORMATION TO CITIZENS, BUSINESS REPRESENTATIVES AND POLICY-MAKERS ALIKE

EXCHANGE BEST PRACTICES AND SHARE THE LESSONS LEARNED FROM ALREADY IMPLEMENTED KNOWLEDGE BROKERAGE ACTIVITIES WITH OTHERS UNDERTAKING SUCH ACTIVITIES AT LOCAL OR REGIONAL LEVELS

# THE AWARE METHODOLOGY



## LOCAL SCIENTIFIC TEAMS

A scientific team is assembled for each case study to cover various research aspects of the chosen sustainability topic



## COMMON EUROPEAN WORKSHOP

A European workshop with all citizen panels and scientific teams helps to build a common foundation regarding the chosen sustainability topic

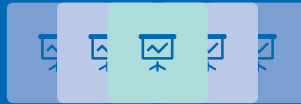


## LOCAL CITIZEN PANELS

A panel of citizens is selected in each case study to form a "jury"



## LOCAL SCIENTIFIC TEAMS LOCAL POLICY-MAKERS



## LOCAL WORKSHOPS

Workshops take place in each of the case study areas, involving the local citizen panels, the local scientific team, and invited local policy-makers and stakeholders; based on this exchange of knowledge the citizen panel develops a set of recommendations to improve sustainable management



## LOCAL CITIZEN PANELS LOCAL STAKEHOLDERS



## LOCAL SCIENTIFIC TEAMS LOCAL POLICY-MAKERS



## LOCAL PUBLIC CONFERENCES

The statements developed by the local citizen panels on improving the sustainable management of the topic at hand are presented to decision-makers at a local public conference



## LOCAL CITIZEN PANELS LOCAL STAKEHOLDERS



## ALL LOCAL SCIENTIFIC TEAMS



## COMMON EUROPEAN WORKSHOP

The local citizen panels and scientific teams all come back at the European level, exchange and compare their local results and produce a common declaration of improved sustainable management of the chosen sustainability topic



## ALL LOCAL CITIZEN PANELS



## LOCAL SCIENTIFIC TEAMS EU POLICY-MAKERS



## EUROPEAN PUBLIC CONFERENCE

The common European Citizen Declaration on improved sustainable management of the chosen sustainability topic is presented to EU decision-makers in a public conference



## LOCAL CITIZEN PANELS EU POLICY-MAKERS



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## AWARE: THE PROJECT

The objectives of the AWARE project have been to: (1) enhance connectivity between research, policy-making and the public by (2) linking research to policy development in the field of sustainable water management in order to (3) achieve a good ecological status of coastal waters in Europe. To achieve better connectivity between actors, the AWARE project focused on the role that can be played by panels of randomly selected citizens in the evaluation of management options and research goals, specifically in the area of coastal water management.

### AWARE METHODOLOGY

The knowledge brokerage methodology used in AWARE has been designed, applied, and fine-tuned in two prior European Union (EU) framework projects addressing sustainable cities ([www.raise-eu.org](http://www.raise-eu.org)) and sustainable urban transport ([www.move-together-exhibition.net](http://www.move-together-exhibition.net)). Only the AWARE project, however, tested the methodology at both local and European levels. Working in three European case studies, the AWARE project brought together four types of actors involved in coastal water management: scientists, decision-makers, stakeholders, and citizens. The activities thus undertook the brokerage of different forms of knowledge—from expert to every-day experiential—needed to understand complex issues.

**The AWARE method recognises that there are different ways to connect scientists, policy-makers, and the public**

The conventional way is to treat the three actors as entirely autonomous, interacting only within the established formal procedures of democratic societies (e.g. public inquiries as prescribed by law). Today, however, it is more common to follow a ‘participation-limited’ adaptive management approach, supporting the close interaction between scientists and policy, but less with citizens or stakeholders. This approach characterises the EU Water Framework Directive for instance, which sets up several thematic working groups engaging scientists and water managers. The “integrated adaptive management approach” however, tries to design, and learn from, a closer interaction between science, policy, stakeholders, and citizens. AWARE has implemented this last management approach in three pilot coastal areas in Europe: the Gulf of Riga in Latvia and Estonia, the Southern North Sea in France and Belgium, and the Goro lagoon in Italy.

## DIFFERENT WAYS OF MANAGING THE INTERFACE BETWEEN SCIENCE, PUBLIC AND POLICY

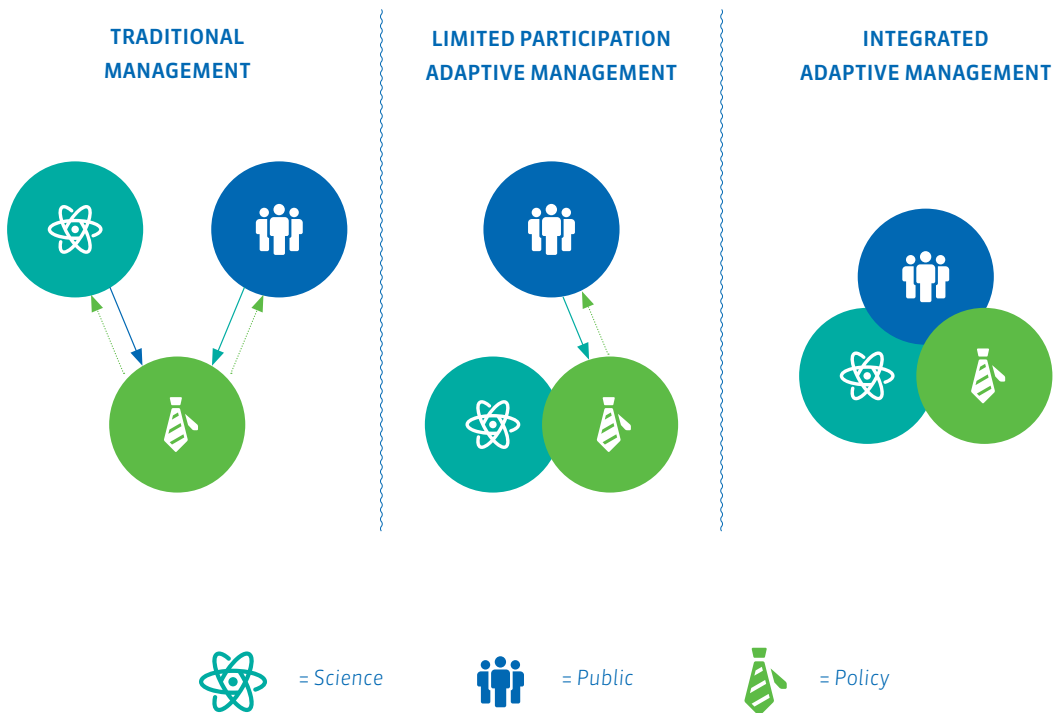


FIGURE: ADAPTED FROM THE AWARE PROJECT  
DESCRIPTION OF WORK

### AWARE PROCESS

In the initial phase of the AWARE process a group of ten individuals were selected randomly for each case study, forming a transnational panel of 30 members. This European citizens' panel has been engaged in a number of workshops and conferences, at both local and European levels, exchanging knowledge and experiences about the status of coastal waters, the best scientific understanding of existing challenges, and the water policy and management practices used with scientists and invited stakeholders.

This work culminated in a European Public Conference where the citizens' panel presented a set of recommendations to decision-makers, regarding sustainable coastal water management as well as improved connectivity between science, policy, and civil society. The workshops and the conferences aimed to create a "public sphere" for transparent dialogue among scientists, citizens, stakeholders, and decision-makers. The overall process is outlined in the figure found in the fold-out cover.

## THE AWARE CASE STUDIES IN A NUTSHELL

### The North Sea

case study includes the northern part of the French Atlantic coast and eastern Channel, as well as the Belgian coast. The drainage basin covers the Seine, Somme, and Scheldt Rivers. Nutrient pollution (phosphates and nitrates) from diffuse sources (mainly agriculture) is the main focus of this case study. The problem is highly visible in the form of algae and foam appearing in the water and on the beaches, but more subtle changes may also be occurring in the food chain, including increased fish production.

### The Gulf of Riga

is a shallow sub-basin of the Baltic Sea shared by Estonia and Latvia. The gulf's ecosystem is influenced by the rest of the Baltic Sea, as well as river watersheds from five EU and non-EU countries. The Gulf of Riga is suffering from eutrophication due to excessive nutrient discharge, and balancing the achievement of good water quality with current fishing yields in the Gulf is a major socio-economic and ecological challenge. An additional challenge lies with the fact that the costs necessary to invest in improved sewage treatment should be borne by countries with no direct access to, and benefits from, the Gulf of Riga.

### The Sacca di Goro

concerns the smallest case study area within AWARE—the Sacca di Goro Lagoon within the Po delta. The boundaries include the lagoon, the inland activities bound to agriculture and clam breeding, and the Po river channels management systems. At present, the Sacca di Goro is one of the top European sites for clam rearing: about one third of the lagoon surface is exploited for clam farming. The main socio-economic issues thus address the development of sustainable clam farming, i.e. the balance between natural ecosystem conservation, tourism, social and cultural needs, as well as strong economic interests of clam farmers.



# EVALUATION OF THE AWARE PILOT EXPERIENCE

## OBJECTIVES

As a pilot project funded by the European Commission in order to test a new knowledge brokerage method, AWARE was subject to a careful evaluation by a team—formed from the project consortium—taking the role of independent observers of the participatory process and its outcomes. The objective of this Evaluation Team has thus been to observe the ways in which project partners, most of whom are scientists, learned from the interactions with citizens, stakeholders and policy-makers about how to move towards a more integrative science-policy-public interface. In particular, the evaluation has described how elements of the design and preparation phase affected the development of the process, considering as relevant sources of information the outcomes of the participatory moments (discussions, results), the evaluation of participants (questionnaires) and the role played by the partners in the interactive dynamics.

For more information about the AWARE monitoring evaluation please see the section on further reading.

## ANALYSED ASPECTS

The final goal of the evaluation was to understand to what extent knowledge brokerage was effective, according to the AWARE project scope. The analysis was therefore concentrated on:

**the level of awareness and critical knowledge achieved (about EU legislation, coastal environmental issues, the interface between science and policy, among others);**

**the level of satisfaction regarding the design and content of workshop sessions (in terms of speakers' capacity to communicate and present concepts, and in terms of the related discussions);**

**specific aspects of workshops and conferences (such as drafting the citizens' declarations).**

The following sections in the brochure highlight some of the lessons learned from the knowledge brokerage process and its outcomes.



## MORE ABOUT THE 3 AWARE CASE STUDIES

### North Sea

*In the North Sea case study, two similar but separate recruitment processes for the local citizen panel were carried out for France and Belgium. In both cases the process involved the distribution of posters at relevant events and places (e.g. Universities, nature parks), advertising through the internet and addressing letters to relevant ‘multiplier’ organisations. Citizens were selected based on their answers to two open questions about their motivation to participate in AWARE and their ideas about coastal water quality. A total of 20 applications were received for the North Sea case study. Scientists from the Université Pierre et Marie Curie and the Université Libre de Bruxelles, as well as moderation experts from Missions Publiques led the recruitment and knowledge brokerage efforts in the North Sea case.*

*This case study is transboundary and transnational and different national authorities share responsibility for coastal water ecosystem health. The hydrological districts set up under the Water Framework Directive are managed by regional water agencies, but national governments are responsible for marine and coastal waters under the OSPAR Commission (Oslo and Paris Conventions for the protection of the marine environment of the North-East Atlantic) and the EU Marine Strategy Framework Directive (Directive 2008/56/EC). In addition to this formal administrative system (including specialised public organisations working under the Hydrographical District authorities), a large variety of other governmental agencies and non-governmental stakeholders are involved in the overall governance of water quality issues. The latter include farmer organisations, tourism agencies, shellfish farmers, and consumer organisations, among others.*

### Gulf of Riga

*Scientists from the Uppsala University and from Bioforsk, together with the NGO Baltic Environmental Forum (BEF) addressed the citizen recruitment and participatory activities in the Gulf of Riga case study. The BEF published the AWARE recruitment announcement on their website, on the biggest portal for job search and vacancies in Latvia and Estonia, as well as on the webpage of the Ministry of the Environment; they also sent press releases and contacted stakeholders in their network, such as municipalities, science institutions, and public bodies. Based on an evaluation that included answers to open questions, a random selection for the local citizens’ panel was made. For this case study the goal of attaining 100 applications was achieved. Stakeholder participation was addressed using an ‘influence and interest’ matrix. Those of highest influence and interest were identified as the most critical stakeholder group, including for instance the Helsinki Commission.*

## Sacca di Goro

Those stakeholders with high interest but low levels of influence—including, for example, the Latvian Advisory Training Centre and Farmers Parliament—were considered just as important, and perhaps in need of empowerment. Stakeholders with high levels of influence but low interest—including the Ministry of Agriculture for instance—were considered useful in the context of decision-making. While the scientific community was rated among stakeholders with low levels of both interest and influence, policy-makers hold high interest as they are involved in implementation activities of the Water and the Marine Strategy Framework Directives. This case study proved—in the course of the planned public conference—that an interactive discussion between actors with various levels of interest and influence can be a highly effective way to engage in the exchange of knowledge and opinions.

The Sacca di Goro case study was undertaken by scientists from the Universities of Parma and Siena (who hold extensive experience in the area for instance through EU's FP5 DITTY project) and from Poliedra Politecnico di Milano, as well as experts from local public agencies such as the Province of Ferrara and the Department of Coastal Waters. Recruitment methods were promoted by targeted dissemination activities: the announcement was distributed through posters in the national language, through an e-newsletter and flyer sent to fishermen cooperatives, and displayed at other local meeting points. The citizens were selected for the local panel based on their answers to two open questions about their motivation to participate in AWARE and their ideas about coastal water quality. A total of 19 applications were received, and the random selection occurred from among the 12 English-speaking citizens.

Stakeholders were categorised into five groups according to influence: clam fishermen are the most influential, more so as they are organised into consortia; farmers, whose farms and crops are situated inland, are also organised into cooperatives or consortia. Stakeholders also include environmental associations, mainly local chapters of national or international associations (World Wildlife Fund, Legambiente Ferrara), tourism agencies (tourism can play an important role in the lagoon and also inland), industrial and other associations. Policy-makers were also considered at different levels: they were mainly represented by the Po River Basin Authority, the local and regional authorities, the Civil Protection, and the Ministry of Environment with its technical agency ISPRA. Although policy-makers were scarcely present during local participatory activities, two members of the citizens' panel were notably elected to the municipal government of Goro (including as mayor) during the AWARE project.



## LESSONS LEARNED ABOUT ... ENGAGING CITIZENS



### ENGAGING CITIZENS

*The recruitment of citizen panels was dominated by the challenge of building a representative sample from the population concerned, and to ensure sufficient English proficiency as well as interest in the topic. The language condition had to be met so that all citizens could communicate not just across borders in the transboundary cases, but also at the European level. In addition, the selection of citizens was based on their motivations and opinions about coastal water quality and management. As the case study descriptions highlighted (see p. 06+07), the citizen recruitment was different in the three areas.*

*In the Sacca di Goro and in the North Sea cases the response rate to the widely disseminated recruitment campaign was low. In Sacca di Goro especially, the selection of the 10-citizen panel was influenced by the need for sufficient English language proficiency, a prerequisite hardly met by residents in the small Goro community, but needed in order to allow an acceptable level of exchange and discussion among the three panels at the European level.*

*Compared to the other two cases, the response rates from the Gulf of Riga were more positive. This may be explained by the Baltic Environmental Forum's (BEF) experience in public communication and dissemination: advertising the AWARE project in the largest job and volunteering portal in both Latvia and Estonia contributed significantly to the fact that the Gulf of Riga citizen panel was selected at the desired rate of 1 member in 10 applicants.*

## TIPS FOR FUTURE PROJECTS ...

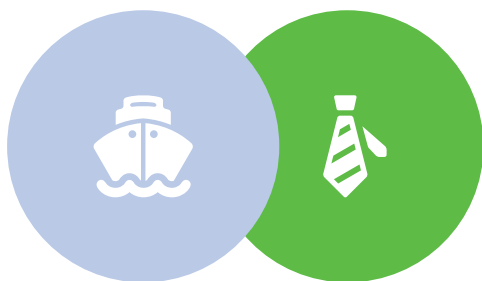
*Instead of traditional open hearings a better response and feedback may be gathered through a random selection of individuals that form a citizen panel—these should then be part of the entire policy consultation process. This requires a careful selection procedure using a call for citizens appropriately disseminated in print and online to the target audience; the collection and evaluation of citizens' application forms; and the selection of panel members and deputies from the pool of candidatures received with the support of software ensuring fair opportunity to be selected and a balanced composition of the panel (e.g. in terms of age, sex, activity, attitude and motivation towards the topic).*

*The commitment of the citizens selected as panellist need to be ensured at the very beginning of the process, by signing a letter of commitment where the terms and conditions for their participation (usually to attend workshops and conference at fixed dates) are established and a nominal fee to compensate for their time (about 6 to 10 days over one year) is agreed to be paid at the end of the process. Any travel and accommodation costs needed to attend transnational workshops must be covered from the project budget.*

*Citizen panels should aim to be representative of the socio-economic structure of the case study they represent, however considerations about language proficiency and a basic level of interest in the sustainability topic addressed are a priority. The ability to speak a common language is crucial when working with transboundary and cross-European citizen panels: the presence of language interpreters would greatly reduce the effectiveness of interactions between participants and would significantly increase costs. Substantial time however, is still needed to clarify for those involved the terminology of relevant environmental laws and directives.*



## LESSONS LEARNED ABOUT ... ENGAGING STAKEHOLDERS AND POLICY-MAKERS



### ENGAGING STAKEHOLDERS AND POLICY MAKERS

The engagement process of stakeholders presented challenges not in terms of language skills—as they have been involved only in the local knowledge brokerage processes—but in terms of achieving participation from the whole range of relevant organisations, not only from those actors with high interest or high influence. It proved to be a successful approach to use a matrix dividing them into four groups depending on their level of influence and their level of interest, as in the Gulf of Riga case study (see p. 06+07). Those stakeholders with high interest but low levels of influence, for instance, were considered as important and in need of empowerment.

It is interesting to note that in the AWARE project the task of engaging the various stakeholders rested in most cases with the scientific project partners. This gave increased credibility to the engagement efforts, from the point of view of the stakeholders, albeit it was not an easy task for partners mostly used to interacting in academic networks rather than advocacy and policy communities. In all case studies the local knowledge brokerage events were well attended by stakeholders. However, there was a notable lack of involvement from industry representatives, which was noted by the actors involved, by the parties interviewed throughout the AWARE process, and during the evaluation process.

**Even so, some differences were noted across the case studies: in Sacca di Goro for example, clam fishermen played quite an important role as representatives of the local industry. This may be due to the fact that they were found to be the most influential group in the region, especially as they are organised into consortia such as the Consorzio Pescatori di Goro, Legapesca, and Federcoopesca.**

**Differently from the other two cases, in the Gulf of Riga the engagement of stakeholders was carried out by the regional NGO Baltic Environmental Forum (BEF), which proved successful given their knowledge of the sustainability issue addressed, their perceived neutral stance, and their wide-reaching networks spanning a variety of stakeholders.**

Although the local workshops and conferences were attended by policy-makers it was often difficult to actively involve them both at the local and at the European levels. More importantly still, the nature of the interaction between policy-makers and the citizen panels remained on the level of political statements rather than producing a true exchange of ideas. Comparing this with the discussion between the citizen panel and the other actors involved, it is clear that there is room to improve the way in which the policy and public communities interact. In fact, this gap appears to be a systemic problem rather than an organisational weakness of the AWARE project.

Unlike science, the realm of policy-making is more concerned with representing and/or weighing different issues and interests, than with understanding natural or social phenomena. Moreover, it seems difficult to engage policy-makers on topics and processes that require long-term consideration and that might span beyond their mandate. The active involvement of policy-makers in the process however, is crucial given the legitimacy of any eventual decision taken on the basis of the deliberations formulated by a randomly selected small group of citizens.

## TIPS FOR FUTURE PROJECTS ...

**Engaging stakeholders from across the low-high interest and low-high influence continuums is crucial in order to achieve a balanced exchange of knowledge, views, and information.**

**The participatory process gains credibility by tasking scientists and trusted regional NGOs with the stakeholder engagement.**

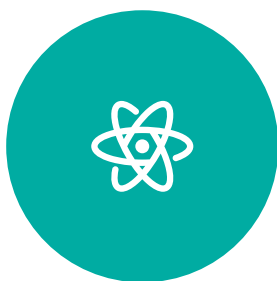
**The participation of a permanent “Policy and Science Advisory Group”, as in AWARE, can provide significant feedback and positive inputs both during the knowledge brokerage events and during the evaluation. Members of this group should be key actors in the study areas, have a relatively high interest in the process, and come from different backgrounds.**

**Industry representatives are a key actor—when they are missing from the discussion a wide array of needed knowledge is lost, which has repercussions on the process and outcomes. Reaching this target audience in future projects may include bilateral consultations with industry representatives around concrete outcomes and recommendations.**

**Use the AWARE method to engender a continuous informal process of consultation on key sustainability issues, enabling a more productive public-policy interaction. Such an awareness raising process could help bridge the gap between the citizens’ locally specific and experiential knowledge, perspective and understanding of the topic, that of elected representatives, and the more technical perspectives usually held by the water managers and the experts involved in the water policy formulation process.**



## LESSONS LEARNED ABOUT ... ENGAGING SCIENTISTS



### ENGAGING SCIENTISTS

The AWARE experience, and in particular some of the interviews undertaken, show that there is a gap in the dialogue between scientists and policy-makers, as well as between policy-makers and the general public especially on complex topics that require a technical background. As for the first gap, the dialogue is often unidirectional, with policy-makers asking the scientists for advice but with scientists not always directing their research to answer policy questions. This dialogue works unevenly across different European countries as well as at different EU, national and local levels, and this fact calls for a better connectivity between the body of research produced across the whole European Research Area and the advice provided to EU, national and local policy-makers. As for the second gap, the interface between policy-makers and the public lacks efficiency in part because technical knowledge of lay citizens is generally low, thus hampering productive dialogue on complex sustainability policy issues.

*In the Sacca di Goro case, Nobel laureate Elinor Ostrom's general framework for analysing sustainability of socio-ecological systems was used in the knowledge exchange process (see section on references). In addition, the Analytic Hierarchy Process (AHP) multi-criteria method was used as an evaluation tool to measure the mutual distance of the stakeholder groups from a common vision of the Goro system, as well as the priority of actions to be implemented for improving the social, environmental and economic situation of the same system. The AHP analysis of the stakeholders' answers was an object of discussion during the local Italian conference, serving to link the workshop and the conference.*

Another barrier may be that communicating scientific knowledge to a lay audience is a difficult task both for scientists—who would need public communication expertise to which they are often not used to—and for citizens—for whom workshop attendance alone may not be enough to acquire a complete scientific knowledge. The AWARE process has demonstrated, however, that a well-structured participatory process—where citizens meet scientists with a clear purpose, to discuss a specific sustainability challenge, with enough time and commitment available—can greatly help to overcome this barrier. An important outcome of the project highlighted that throughout the process the citizens became somewhat more like scientists and scientists more like citizens: AWARE built a common language between the two groups, based on a common understanding of complex issues and on increased awareness gained in a neutral forum.

## TIPS FOR FUTURE PROJECTS ...

*In the Gulf of Riga the connection between the local workshop and conference was strengthened by having only a one day break in between. Although the time proved sufficient for the case study scientists to adapt existing models and scenarios with the input from the citizens and workshop, and for these latter to prepare for the deliberations with the policy-makers and stakeholders at the conference, more time would have been useful for the citizen panel to further develop the Local Citizen Declaration, potentially allowing for meetings outside of the planned project activities.*

*The scientific background and participatory modelling for the North Sea case study was provided by the North Sea team partners particularly on the basis of previous and on-going studies such as the Liteau, Thresholds, Timothy and PIREN-Seine research programmes. Although the modelling goals of the participatory process were achieved across all case studies, the final evaluation comparison between the three case studies showed that the process and the outcome—in the form of Local Citizen Declarations—may have benefited from a lengthier consultation with scientific and policy experts, both in terms of the group cohesion and in terms of the concreteness of the citizens' recommendations.*

*Citizens' input can help scientists to focus on a more comprehensive view of the problem at stake, avoiding the pitfalls of compartmentalisation.*

*Including the opinions of stakeholders and citizens enriches scientific models and scenarios and helps develop more robust results. Systematic approaches should thus be developed to promote this type of interaction.*

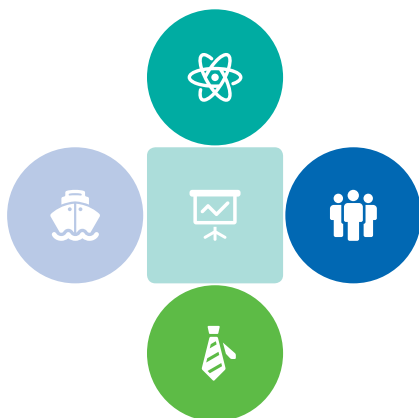
*Citizen-scientist interactions benefit from a regular consultation process across time, during which knowledge and information can be exchanged; trust built; and a 'common language' based on understanding of complex challenges and mutual awareness can be developed.*

*Complementing participatory workshop interactions with public conferences helps maintain actors' motivation and interest in the process and provides an ideal public forum for the presentation of the achieved results and a consultation around citizens' recommendations.*





## LESSONS LEARNED ABOUT ... ORGANISING THE KNOWLEDGE BROKERAGE PROCESS



### ORGANISING THE KNOWLEDGE BROKERAGE PROCESS

Knowledge has been provided throughout the AWARE process by all the participants in different forms and measures: expert knowledge was provided mainly by scientists, tacit and local knowledge mainly by stakeholders and local policy-makers. Citizens also provided local knowledge, as well as personal experiences of the state of the coastal water resources. The AWARE activities were thus specifically designed to allow an exchange between these different types of knowledge and for learning to occur between the different actors.

The knowledge brokerage events were organised in a similar manner across case studies, using sessions to present specific expert knowledge from scientists or stakeholders, followed by a moderated discussion between presenters and citizens (and often among presenters), taking into account the various opinions represented. As part of the monitoring evaluation, the sessions were carefully documented and minutes were made available. In fact the transparency of the information (e.g. minutes, individual presentations, and project deliverables) proved a key requirement in building confidence in the process itself.

In all the case studies, the moderators of the events were carefully selected from among the project consortium, bearing the advantage that instead of being recruited solely for one event, they were involved in the process from the beginning. Additionally, training on more technical topics was provided by the scientists' teams and invited experts, and their interventions were reviewed in advance by the facilitation team to ensure sufficient clarity of technical presentations for a lay audience. The evaluation indicated that across case studies satisfaction with the moderation was quite high.

## TIPS FOR FUTURE PROJECTS ...

Following the local workshops, local public conferences were designed to disseminate the knowledge gained and exchanged to a wider audience: in all case studies around 50 participants attended the conferences, including policy-makers who commented positively upon the outcomes and the innovative approach of the AWARE process. The time and space allocated to the interaction between different types of actors are important aspects to consider in order to build trust between different groups of actors: in general it was noted that citizens seemed to trust scientists from the beginning, but more time and opportunities for interaction were needed to increase the trust between citizens and policy-makers, and between policy-makers and scientists.

Regarding the interaction between citizens and the scientific experts, the latter were asked to make presentations regarding models or the state of the environment clear and understandable for a lay audience and, with a few exceptions mostly coinciding with invited external actors, this proved to be quite successful. In fact the evaluation team noticed a marked decrease in the amount of 'community-specific jargon' used by the different actors as the participatory process progressed. The greater challenge derived from the unavoidably incomplete scientific information conveyed by the experts to the citizens, due to clear time constraints. In some cases even small bits of incomplete information resurfaced in the form of erroneous assumptions in the citizen deliberations. This weakness is difficult to overcome: it is impossible to predict which path the citizen deliberations will take, and it is certainly not desirable to determine this path beforehand.

**Good moderation by a team (moderator plus assistant) of communication or social experts that is trusted and involved throughout the participatory process is essential.**

**Citizens' panels need the time to consult not only with experts during workshops and conferences, but also among themselves, if they should produce concise, concrete, and cohesive statements on a given sustainability issue.**

**Facts and figures presented by experts should be easily understood and available; sufficient time should be allotted for digesting the facts presented, and clarification questions should be encouraged.**

**Expert knowledge should be shared and embedded continuously into the knowledge brokerage process. In order to better convey complete scientific information to the participants, experts could be involved throughout all events, serving as a "knowledge repertoire".**



## LESSONS LEARNED ABOUT ... DELIVERING OUTCOMES



### DELIVERING OUTCOMES

*In the AWARE project the outcomes of the knowledge brokerage process were the three Local Citizen Declarations—produced during the local workshops and presented at the local conferences—and the common European Citizen Declaration. The evaluation of the outcomes showed that participants gained new and significant understanding and insights on coastal water management through participating in the workshops and conferences. They exchanged views on a broad range of issues relating to the short and long term health of coastal waters. They also addressed specific problems related to agricultural policy, water quality and pollution, and socio-economic trade-offs.*

*Thanks to the participatory process, the citizens involved in AWARE committed to taking personal actions to protect the environment (e.g. by changing consumption patterns), and the experts gained new perspectives to apply in their research fields. A clear and positive outcome was an increased awareness for all participants of the complexity of the coastal water management systems, as well as a deeper understanding of the need to engage the whole spectrum of actors in a continuously adaptive process to produce truly sustainable benefits.*

*Additionally, while managing the expectations of the actors involved—in particular of the citizens' panels—a real challenge was to find the right “entry points” for changing current policies towards sustainability. While it was crucial that all actors engage honestly and openly with each other during the knowledge brokerage process, participants perceived the outcome, in the form of the Local Citizen Declarations, to have limited capacity for concrete change. Such perception was even more pronounced at the level of the final outcome—the European Citizen Declaration.*

## TIPS FOR FUTURE PROJECTS ...

Thus, it seems that such a knowledge brokerage process may be more appropriate at the local or regional level, where long-term informal interactions between all the actors are more practical. This idea has been supported by a number of interviews undertaken in parallel to the monitoring activities, although it has been also stated that the lack of resources at local level may hinder this kind of initiative.

However, the flexible manner in which European sustainability goals can be reached at national and local levels—under the umbrella of the Water Framework Directive for instance—increase the benefits of implementing a knowledge brokerage processes at such levels, by helping policy-makers to build consensus towards evidence-based sustainability targets. This “evidence-based” consensus implies that scientific evidence should be provided in a clear and understandable manner to all actors including policy-makers, citizens, and other scientists—in the form of a knowledge brokerage process.

Although mentioned above, it bears repeating that trying to pre-determine the direction in which discussions will move—by providing only specific sets of expert information for instance—is not useful. In addition the evaluation of the AWARE process also showed that it is crucial to allow sufficient time for the citizen panels to consult, during and after the participatory moments such as the workshop. This is necessary in order to achieve the best possible outcome, in the form of Citizen Declarations.

**In addressing complex sustainability issues, the outcomes of a knowledge brokerage process are closely affected by the extent to which the whole spectrum of actors is involved.**

**In a knowledge brokerage process engaging citizens’ panels, it is necessary to address expectations regarding the outcomes of the process, and the concrete possibilities of implementing certain options. The willingness of individual policy-makers to communicate openly and take up insights from a body of lay citizens is a key prerequisite to achieving concrete impacts on policy processes and decisions.**

**All participatory events should be planned to maximise their communication effectiveness, including clear definition of roles and objectives. Facilitation should encourage inclusion and proper balance of all the participants, time for discussions, understandable information, and respectful ways of interaction. Giving ample time for the participants to consult in the co-creation process is crucial for a cohesive outcome (Declaration) that has the full support and ownership of the citizen panel.**

**Achieving a common basic knowledge of the issue at stake and using a commonly-understood language are key aspects to developing synergies between actors. Informal types of knowledge may be accepted by some participants (e.g. lay citizens) while more formal knowledge is required by others (e.g. implementers). One effective solution proven in AWARE was to develop a multi-language glossary of technical terms (in this case related to eutrophication) to help the citizens’ panels in understanding and comparing different terms.**



## RECOMMENDATIONS

**Should knowledge brokerage processes based on the AWARE-proven methodology be used to improve the science-citizen-policy interface in Europe and support decision-making on sustainable water management and other sustainability issues? How should such participatory modelling exercises best be implemented—what are the main obstacles and paths to success? The following set of recommendations are based on the AWARE experience and aimed at water managers that are applying participatory processes:**

**Bring citizens, scientists, stakeholders, and decision-makers together in a participatory knowledge brokerage process to improve decision-making at the local level and increase ownership of challenges affecting citizens across Europe.**

Implementing a knowledge brokerage process for improving decision-making at the local level can help increase ownership: citizens and stakeholders have a higher incentive to participate around local issues where they will be able to track and measure the impact of the decision process. Nevertheless, working at larger, European, scales provides more relevance to the process for all actors involved, as it also includes the top-level policy framework for sustainability issues. Thus, depending on the objective of each participatory process, a compromise between these two perspectives—local/national and supranational—should be found. At all scales ownership and personal involvement is significantly increased by clearly defining the outcome that is expected from the participatory modelling process.

**Focus on local level implementation while also feeding the lessons learned back into European level policies.**

A knowledge brokerage process may best influence the local implementation process of European Directives, since these provide some flexibility and room to manoeuvre at the national and local scales. The participatory process also benefits significantly from informal-regular opportunities for various actors to interact, which is easiest at the local levels. However, it is also important for local participatory process to provide feedback on the ways in which European Directives can be implemented, which will be useful at the EU level in the design of future policies.

**Take into account cultural and empowerment differences when implementing a knowledge brokerage process, especially to ensure a fair level of trust in the process outcomes.**

Taking into account cultural and empowerment differences is important before implementing a knowledge brokerage process, especially regarding trust in the outcomes of such a process: it is important that the broader public—from among which a representative panel will be selected—believes that concrete results can be expected from the process, given clearly defined outcome goals. These outcomes are not necessarily a specific set of decisions, which are ultimately to be taken by legitimate powers at EU, national, regional or local level, but may be more broad and informal outcomes (actions or initiatives) that can help to determine policy strategies supported by a deeper consensus, built upon a greater awareness of the issues at stake from all actors concerned.

**Bring citizens, scientists, stakeholders, and decision-makers together regularly to allow for trust building and effective learning and knowledge sharing.**

Implementing a knowledge brokerage process in a geographically delimited area is more efficient: the necessary permanent or regular informal processes involving different types of actors to support decision-making will be more effectively carried out. Such regular opportunities for interaction—focused in time and space on a particular area and topic—also allow the activities to take place in a common language.

**Involve local civil society actors to best reach and engage with the broad public.**

Involving local NGOs and civil society actors is key to reaching and engaging a broad public: because of their good knowledge of local societal structures, they are able to act as ‘mediators’ between actors. They can also act as catalysers of action and as ‘multipliers’ to ensure a wide dissemination that reaches all types of lay citizens—not only those with access to most resources and networks, or those groups of selected individuals that consider themselves especially environmentally-friendly.

**Engage all relevant actors to the extent possible, particularly those from relevant industry or economic sectors.**

Try to reach actors from relevant industry or economic sectors by engaging on concrete topics with representatives and federations who are likely to arrange regular contacts between industry actors, policy-makers and science. Future EU funded knowledge brokerage processes between scientists, citizens and policy-makers should aim to connect with the European Innovation Partnership (see Outlook) on water efficiency and other sustainability challenges.

**Involve a team of scientists throughout the knowledge brokerage process. 'Scientific ambassadors' could communicate critical information to citizens, business representatives and policy-makers alike.**

AWARE has shown that involving a case study team of scientists throughout the knowledge brokerage process is significant: the expert teams can share scientific knowledge but also help design the output of the process with the citizens' panel, to ensure that relevant knowledge is accessed and processed accurately. To help with complex sustainability issues, 'scientific ambassadors' could "translate" critical information for citizens, business representatives and politicians alike. These experts should have cutting edge knowledge of research advancements in a given sustainability domain, personal communication skills, a mind open to a broader dialogue, and an understanding of the socio-economic implications of their research. Increasing academic engagement with projects similar to AWARE is one way to do this, but the scientific award system should also be encouraged to recognise individual participation in similar participatory initiatives and efforts done to tailor scientific results to wider target audiences.

**Exchange best practices and share the lessons learned from already undertaking knowledge brokerage activities with others implementing such activities at local or regional levels.**

To increase the relevance and appeal of participating in more innovative knowledge brokerage processes, existing processes also need to be identified and reviewed: exchanging and comparing results is important for action learning and for improving the visibility of knowledge brokerage activities at local and regional levels across Europe. Feedback on this kind of experience is also needed at the EU level, where active involvement of different parties through participatory processes is encouraged, particularly on sustainability issues.

## **MAINSTREAMING THE AWARE APPROACH INTO EU INSTITUTIONS**

While AWARE addressed coastal water management specifically, it should be made clear that the methodology could also be useful to deal with other sustainability and social challenges that unfold in the long- rather than the short-term. The type of knowledge brokerage process that AWARE undertook is in fact particularly useful for issues that transcend electoral timelines because open exchanges between various stakeholders triggered by the process contribute to building a stronger understanding of complex undertakings and a greater commitment towards durable actions and policies.

Future European projects inspired by the AWARE method can bring researchers and citizens from across Europe together in collaborative research experiences to address cross-cutting societal and sustainability challenges that Europe is currently facing, including energy and climate change, and sustainable transport among others. In such projects citizens' participation will be key—opening to the public knowledge networks that today are obscure to them. The basis for such projects is found also in the EU's Europe 2020 Strategy, which formulates ambitious policy objectives in areas such as climate change, energy security, demographic ageing, and resource efficiency. The Europe 2020 flagship initiative Innovation Union called for the closer linking of future EU funding programs to these objectives by launching European Innovation Partnerships (EIPs) in areas in which government intervention is clearly justified and where it is deemed necessary to combine EU, national and regional efforts. Examples include active and healthy ageing; smart and liveable cities; water-efficient Europe; smart mobility for Europe's citizens and business; and agriculture productivity and sustainability.

These EIPs create new opportunities for doing sustainability research and social innovation, bringing scientists, policy-makers, citizens and civil society organisations, and business stakeholders together in shared processes.

The call for integration by the Innovation Union and the aims supported by the EIPs reflect the approach taken by AWARE. Linking such participatory processes on complex sustainability challenges to European goals and policy roadmaps can also contribute to enhancing the participants' perception of being truly “European citizens”—an important and positive side-effect for building European citizenship and social capital—and to bridging the awareness gap between citizens and decision-makers. However, in order to deliver a significant impact at EU policy level, a fundamental requirement would be to institutionalise and systematise the application of the AWARE method. This would be especially useful for establishing transboundary activities and connections between policy-makers, scientists, stakeholders and citizens, for instance in the water sector at the level of international River Basin Organisations.

The AWARE approach needs endurance to be successful—the lessons learned need to be implemented at all levels, and acting on a single project basis will be not enough. In this respect, EU level institutions to which the AWARE approach can and should be disseminated are especially those that hold a political representation of European citizens, from the European Parliament and the Council to national, regional and local governments. Another important EU level institution is the Committee of the Regions, in consultation with whom the European Parliament can also be reached.



## CITIZEN VOICES

*“We have realised that there has been little room given to citizens so far in the implementation of the Water Framework Directive. We believe we are legitimate actors that should be part of the decision-making process, defining what “good” environmental status is, and sharing our opinions with scientists and key policy-makers.”*



*“We know that we are paying for several decades of human practice and that the ecosystem has a strong capacity of inertia: change will come slowly. That’s why it is not time for talks anymore, it is time for actions.”*

*“It is clear to us that challenges are different for every region and we therefore encourage solutions that make sense and are most effective at the local level.”*

*“Giving accurate information to citizens about an issue allows shedding light on it, allowing them to engage themselves to bringing a solution. Keeping us, citizens, in the dark prevents us from making full use of our ability to contribute to the decision-making process.”*

*“We as citizens are willing to take the first steps and hope other parties will follow. Join us in this change!”*

*“Scientific experience and consultations are crucial. But so is the information from citizens, farmers, fishermen, and other involved actors. ‘Scientific ambassadors’ in fact could ‘translate’ critical information for citizens, business representatives, and politicians alike—as it happened with the information we benefited from in the AWARE process.”*

*“A balance between socio-economic aspects and the environment is needed in building scenarios for an improvement of the situation.”*

*“Citizens are not the only ones who should benefit from better and clearer information on water quality issues. Other stakeholders also need to receive full information in order to help them make better choices. Dialogue with farmers, fishers, tourist organisations and other stakeholders should be strengthened and reinforced.”*

*“We underline that only a holistic, or multi-dimensional, approach can help all involved actors understand the complex issues surrounding water quality.”*





## COORDINATION AND CONTACT

Carlo Sessa  
ISIS  
Via Flaminia 21 · 00196 Rome · Italy  
Tel. +39 063 612 920  
Fax. +39 063 213 049  
www.aware-eu.net  
info@aware.eu

## PARTNERS

adelphi, Baltic Environmental Forum (BEF), Bioforsk, European Commission—Institute for Environment and Sustainability (EC-JRC-IES), Interdisciplinary Centre for Comparative Research in Social Sciences (ICCR), Istituto di Studi per l'Integrazione dei Sistemi (ISIS), Missions Publiques, Popiedra—Politecnico di Milano, Provincia di Ferrara, Servizio Ambiente (PROVFE), Università di Parma (UNIPR), Università di Siena (UNISI), Université Libre de Brussels (ULB), Université Pierre & Marie Curie (UPMC), University of Uppsala (UU)

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Relevant documents are available for download in the "Deliverables", "Citizens Workshops" and "AWARE Conferences" sections at [www.aware-eu.net](http://www.aware-eu.net). They include: the Learning Outcome Evaluation Report, the European Citizen Declaration and local Declarations, the AWARE Background Paper, Interview Reports, and a Comparative Report on the Case Studies.

## LIST OF ABBREVIATIONS

AHP	Analytic Hierarchy Process
BEF	Baltic Environmental Forum
EU	European Union
NGO	Non-governmental Organisation
OSPAR	Oslo and Paris Conventions for the Protection of the Marine Environment of the North-East Atlantic
WWF	World Wildlife Fund

*This brochure provides water resources management practitioners the lessons learned in the AWARE pilot project and the recommendations that can be drawn in replicating the AWARE experience. These results support knowledge brokerage and public participation processes in water governance across Europe. AWARE draws from the guidelines provided by Article 14 of the Water Framework Directive (Directive 2000/60/EC), requiring Member States to encourage the active involvement in its implementation of all interested parties through participatory processes, in particular public consultation.*

*The specificity of the approach chosen by AWARE was to connect the general public with the scientific community and, once a common understanding had been reached, enlarge the interaction to policy-makers and stakeholders. The goal was to move together towards sustainable coastal water ecosystems management. AWARE used a variety of methods and activities to achieve this aim—including workshops, interactive conferences, online surveys and personal interviews. In its course, a demand emerged to identify ways to streamline the implementation of such a process and to take the citizens' participation in sustainability governance issues to a broader arena.*

*With this brochure we attempt to answer this demand by sharing our results and providing recommendations to help the AWARE pilot experiences to become common practice for interfacing scientists, citizens and policy-makers in order to address water management and other sustainability issues.*



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