



## DELIVERABLE D 3.2



# Comparative Report on Case Studies

How to achieve sustainable water ecosystems management connecting research, people and policy makers in Europe (AWARE)



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# 1 Introduction

The AWARE project funded by the European Commission under the 7<sup>th</sup> Framework Programme studies how scientific knowledge is used in policy formulation and implementation, and how policy managers interact with the public and civil society in the specific field of water policy in Europe. More specifically, the project addresses the anthropogenic deterioration of water ecosystems in coastal areas. For this purpose three case studies are being carried out: (a) the Gulf of Riga, (b) the Southern North Sea, and (c) Po Delta /Sacca di Goro.

Through those case studies AWARE is testing a new way of connecting scientists and policy makers, by inviting a “third player” in the game, i.e. the citizens and stakeholders who are interested in or affected by water policy decisions, to perform pilot experiments of Public Engagement in Science (PES). These experiments will let panels of citizens living in three different coastal areas of Europe work together with scientists and local policy makers, to analyze coastal waters problems and assess future scenarios.

The assumption underpinning the AWARE experiments is that one – or even “the” - way forward to enhance the connectivity of scientists and policy makers is to develop an improved framework for science into policy processes in the context of a wider science in society framework, including lay citizens (non experts) in a process of participatory assessment of science evidence and policy making.

In the AWARE project the case studies are being supported by an accompanying evaluation that has been built into the process from the very beginning. In evaluating the procedures and processes of conducting the case studies, the objective of the AWARE Evaluation Team is to help project partners, most of whom are scientists, learn from each other and from their interaction with citizens, stakeholders and policy-makers towards a more integrative science-policy-public interface. Insofar as the evaluation team comprises mainly social scientists, this also represents an active incorporation of social science expertise in adaptive ecosystem management as recommended by the policy and scientific literature.

The evaluation observes this process and judges its relevance as well as its performance in terms of (a) contents, (b) relations among stakeholders and how these change over time and (c) procedures. Evaluation also interested in the way scientific expertise is used – both prior and during the participatory process. More detailed information on the role and scope of evaluation in the AWARE project is provided in Deliverable 3.1 of the project.

This is the second Deliverable of the Evaluation Work Package (D3.2) and its purpose is to report on the consultation processes with citizens and stakeholders taking place in each of the three case studies of the AWARE project. Accordingly, following a brief summary chapter on methodological issues, chapters 3, 4 and 5 are each dedicated to one of the three case studies. The final chapter presents some conclusions and provides an outlook to the upcoming analysis

of the evaluation results. While this Deliverable provides a largely descriptive presentation of the case study the above mentioned analysis of results will be part of Deliverable 3.3.

## 2 Methodology of evaluation

This section briefly reiterates the evaluation methodology as presented in D3.1 and lays out how this has been operationalised in the observation, monitoring and reporting of case studies.

In general, here are three standard forms of evaluation: ex-ante evaluation carried out prior to the implementation of a policy as an input into its design – at EU level this is also known as regulatory impact assessment; ex-post evaluation is carried out at the end of the policy process and is meant to provide insight into how well the policy was implemented and with what results and/or effects; finally, monitoring delineates that form of evaluation that accompanies the policy process as a form of technical assistance. It is this latter type of evaluation that comes closest to describing the scope of evaluation within the AWARE project.

The specific purpose of the AWARE evaluation is to monitor the public participatory approach to sustainable water management in the three areas under investigation by the project, i.e. the Baltic Sea (Gulf of Riga), the Sacca di Goro (and Po Delta) and the North Sea. In order to describe and situate the context in which the participatory process is being carried out the following information was requested from the case study reports:

- a) Description of the cases in terms of the environmental and water management problems faced
- b) Description of past and planned policy activities in the area of water management
- c) Description of scientific studies commissioned and their main results
- d) Description of the scientific methods / models used to deliver the above expertise and justification provided for their choice
- e) Specification of stakeholders and an analysis of their relations. Stakeholders are all those with financial, knowledge or other resources in the area with a capacity and will to facilitate or block policy initiatives at either the design or implementation phase. Stakeholders also include users and citizens directly or indirectly affected by the water management measures.
- f) Specification of the science-policy interface characteristic of the study coastal area till now.

The information necessary for evaluating the strengths and weaknesses of the participatory process was collected through documentation and participant observation. The documentation was partly derived from the partners directly involved in the organization of the public participation process and in part collected by the Evaluation Team in the course of its participant observations. In addition to observing and documenting information relevant for

answering the questions about the design and structure of the participatory process, the Evaluation Team took detailed minutes of all discussions.

In order to assess the impact of the participatory process on the individual participants, questionnaires were designed and distributed at each workshop. The following specific indicators were collected:

#### Design and process

1. What stakeholders are represented? (Do these include all those with financial and/or knowledge resources able to influence or arrest the policy process?)
2. Are citizens represented in the consultation process? What criteria were used for identifying participants? On what basis was this decision made?
3. How many citizens applied to participate in the consultation process? How many were finally selected?
4. What publicity methods were used?
5. What recruitment methods were used? Which proved more useful and/or successful?
6. Were individual interviews carried out with potential participants? (Provide questionnaire or question guide used)
7. Where individual interviews carried out at the end of the process? Did these interviews consider changes in attitudes? (Provide questionnaire or question guide used)
8. What instrument of citizen participation was used?
9. How many meetings were planned and how many took place and when?
10. Were experts involved? In what function and at what stage?
11. Was the agenda made available prior to the meeting? (Provide this and any other documentation)
12. What was location of meeting? How was it selected?
13. Who acted as moderator? Did the moderator(s) receive training?
14. Were sessions recorded? Were transcriptions made available?
15. What was the budget of the public participation? Was it within the original frame?

#### Contents and output

1. Which activities took place to communicate and exchange knowledge and information among participants?
2. What type of knowledge (expert, tacit, local) was communicated or exchanged?

3. How were the discussions structured?
4. What methods were used to disseminate or exchange knowledge?
5. What methods were used for problem-solving? (Were any ICT-based tools used to facilitate this process?)
6. Has the knowledge of participants increased through the public participation process? (What methods, e.g. questionnaires, were used to measure knowledge increase?)
7. Have the attitudes of the participants changed? (What methods were used to measure attitude change?)
8. Have skills changed? (What methods were used to measure skill change?)
9. Did any of the stakeholders involved in the process link up as a result of the consultation process? Which ones and how?
10. Did any of the stakeholders change their framing of the problem addressed through the consultation process?
11. Were any concrete actions decided at the public participation process?

### 3 North Sea Case Study

#### 3.1 Short overview of North Sea area and case study

In this section the information collected derives from the documentation provided within the case study, particularly in the framework of Deliverable 2.1. It is provided by the *partners responsible for the North sea case study* (hereafter named *North sea Team*) and it is evaluated in terms of:

- Completeness, i.e. whether the information provided is capable of describing all the issues at stake concerning the case study, as regards the scientific and the policy background;
- Coherence, i.e. whether the information is appropriate for the correct development of the process, and for feeding, in terms of knowledge, participants;

The North Sea Team includes the laboratory UMR Sisyphe at the University Pierre & Marie Curie in France and the Laboratory Ecologie des Systèmes Aquatiques at the Université Libre de Bruxelles in Belgium.

##### 3.1.1 Geographical scope

The geographical scope of the North Sea case study covered the northern part of the French Atlantic coast and eastern Channel, and the Belgian North Sea coast. This includes the drainage networks of the three main rivers Seine, Somme and Scheldt.

##### 3.1.2 Scientific background

The scientific background for the North Sea case study was provided by the North Sea team partners particularly on the basis of previous and ongoing studies. Those include, among others, the Liteau programme, Thresholds, Timothy and PIREN-Seine. Even though there is some lack on more recent data from after 2003 there is still enough information to carry out a modelling of the main areas and sources of pollution.

The main socio-economic and environmental issues as identified in the Inception and Case Study Reports are:

1. Eutrophication
2. Relationship between primary production and fish yield
3. Tourism along coast
4. Industrial activity, especially near the agglomerations of Paris, Le Havre and Brussels
5. Shellfish farming (French coastal zone and Belgium offshore)

Similarly to the Gulf of Riga case study, much of the challenge relates to increasing nutrient pollution, mainly phosphates and nitrates, whereby the concentration of phosphates seems to have been decreasing in recent years. In the specific case of the North Sea case study area this eutrophication has repeatedly lead to excessive accumulation of algae and foam in the water and on the beaches. This has led to a disturbed ecosystem in which certain types of algae replace the endemic plants and thus can break an important link in the food chain towards fish production.

The biological, microbiological and physicochemical processes in the three river basins of the Seine, the Somme and the Scheldt were modelled by the AWARE scientific partners using the MIRO and the SENREQUE-RIVERSTRAHLER models. The combination of those models was used to test different scenarios for nutrient reduction measures and how they would affect water pollution in the river basins and eventually along the southern North Sea coast. Examples include the effects on water quality of the scenarios “Good Agricultural Practices” and “Organic Farming”.

The main results showed that for the “Good Agricultural Practices” the situation improves somewhat but not as much as initially expected by the experts. In contrast, the second scenario on “Organic Farming” leads to a much more substantial increase in water quality levels. In fact, this is the only scenario in which a great majority of the rivers obtain a “good” or “very good” status in the downstream part of the rivers and a most significant reduction in the Phaeocystis concentration.<sup>2</sup>

This status is would not only be desirable to curb the excessive growth of algae along the coastline but it is also a requirement under the EU Water Framework Directive (WFD). In the modelling exercises carried out by the AWARE team it is hard to see how this mandatory improvement could be achieved without a substantial shift to “organic” practices in agriculture in the three relevant river basins.

### 3.1.3 Policy background

As a trans-national case study, the policy background is rather complex due to a large variety of relevant authorities and policy levels. The lowest level unit as defined by the WFD are the so-called “Hydrological Districts” which are managed by regional water agencies. In the specific case of the eastern Channel / southern North Sea the water agencies are closely linked to the administrative regions of Belgium and the north-west of France.

On the second level, the national governments are responsible for the marine waters and coastline by the requirements of the OSPAR Commission (Oslo and Paris Conventions for the

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<sup>2</sup> J. Garnier, P. Passy, G. Billen, C. Lancelot, V. Rousseau, N. Gypens (2009) North Sea case study content and process design report, AWARE Deliverable 2.1

protection of the marine environment of the North-East Atlantic) and EU legislation on the Marine Strategy.<sup>3</sup> The OSPAR convention includes clear targets for reducing the inputs of nitrogen and phosphorus from the Seine, Somme and Scheldt.

Finally, the European level sets the legislative framework and monitors the implementation of the targets set by the WFD. Those targets require France and Belgium to reach the level of “Good Ecological Status” of the relevant freshwater bodies and coastal waters by 2015. According to the modelling carried out by the AWARE experts this requirement will not be fulfilled.

In addition to this formal administrative system a large variety of other government agencies and non-governmental stakeholders are involved in the overall governance of issues relating to water quality. On the government side the most notable include all administrations dedicated to agricultural policy, to broader environmental policy and specialized public organisations working under the Hydrographical District authorities, such as SIAAP or SPGE.<sup>4</sup> On the private stakeholder side this diverse picture includes farmer organizations, tourism agencies, shellfish farmers, consumer organizations, etc.

#### 3.1.4 Science-Policy interface

The Science-Policy interface for the case study area has a long history and has worked comparatively well within the administrative boundaries of the three relevant watersheds and the corresponding parts of the coastline. This is mostly due to the financing structures of scientific research projects at the regional and national level. However, even projects funded at the European level were mostly confined to the individual watersheds.

The most active time for research on water issues in this area were the first three years of the new millennium. During this time many parallel studies were conducted, most notably, in the framework of the above mentioned Liteau and PIREN-Seine programmes. Since this time it has become more difficult to obtain recent data for modelling purposes.

#### 3.1.5 Stakeholders

In addition to this formal administrative system described above a large variety of other government agencies and non-governmental stakeholders are involved in the overall governance of issues relating to water quality. On the government side the most notable include all administrations dedicated to agricultural policy, to broader environmental policy and specialized public organisations working under the Hydrographical District authorities,

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<sup>3</sup> Directive on Marine Strategy (2008/56/EC)

<sup>4</sup> SIAAP - Service public de l'assainissement francilien; SPGE – Société Publique de la Gestion de l'Eau



such as SIAAP or SPGE.<sup>5</sup> On the private stakeholder side this diverse picture includes farmer organizations, tourism agencies, shellfish farmers, consumer organizations, etc.

## **3.2 Pre-consultation phase (preparation, design)**

The pre-consultation phase four distinct stages; the recruitment of the citizens, providing an overview of the main problems of the case study, organizing the local workshop, the local conference and the related evaluation activities, including the on-line survey. The main activities related to each of those stages are described in turn below.

### **3.2.1 Recruitment of the citizens**

The recruitment process is described in detail in the AWARE Deliverable 2.1. and will only be briefly summarized here. The goal was to select a group of 10 citizens from the coastal areas of Belgium and the North of France to be engaged in the entire participatory process of the AWARE project. In addition to a few other considerations it was important that the citizens speak at least some basic English to be able to engage in the European workshops and conferences of the project.

Two similar but separate recruitment processes were carried out for France and for 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 letter to relevant multiplier organizations. 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.

### **3.2.2 Overview of the main problems**

The overview of the main problems at hand was worked out by the scientific partners of the North Sea team and presented in the form of PowerPoint slides at the local workshop. This overview focused mainly on explaining the basic functioning of the coastal ecosystem, the concept of coastal zone watersheds, the identification of different point and diffuse sources of pollution and the presentation of current water management problems.

In addition to providing an overview of the problem, the presentation also included a first idea of the various options in terms of solutions. For example, it explained how different solutions could be applied working at the source of the problem, i.e. reducing the amounts of pollutants

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<sup>5</sup> SIAAP - Service public de l'assainissement francilien; SPGE – Société Publique de la Gestion de l'Eau

used by human activities or how they could be applied downstream, i.e. by treating heavily polluted water.

### 3.2.3 Organization of the local workshop, conference and evaluation activities

The local workshop was organized at the Free University of Brussels on 8 and 9 October 2010. Like all AWARE workshops, it was structured as a participatory process which is described in detail in section 3.3. below. Part of organizing the process was the identification of the key questions through discussions with the citizens. Among other issues they included the question about solidarity between upstream activities and downstream consequences and alternative solutions for reducing pollution from point and diffuse sources.

The local conference was organized in Dunkerque on 7 January 2011. In addition to the local citizen group it was attended by local policy makers, stakeholders and researchers. The main issues of the conference and the process how it was actually carried out are presented in section 3.3. below.

The evaluation activities, including the feedback from citizens, stakeholders and policy makers are presented in section 3.5.

## 3.3 Consultation phase

The consultation phase itself consisted of two meetings; first the local citizen workshop in Brussels and then the local conference in Dunkerque.

### 3.3.1 North Sea case study – local workshop

The workshop was moderated throughout by the partners from Mission Publiques who took the role to introduce the citizens to the process and how this is embedded into an interface of science, policy and citizens. The first day was mainly dedicated to discussing how to improve the coastal marine ecosystem of the area and its three river basins. For this purpose a variety of stakeholders and scientists were invited to present to the citizens and discuss with them. On the second day the focus was to work towards solutions and recommendations to improve the management of the coastal area and to consider various scenarios to change the situation. At the end of the process the citizens are asked to arrive at a declaration on how to improve the situation along the coast.

The workshop was structured into presentations, (plenary) discussions and group work. The focus was clearly to draw out as much as possible from the citizens in terms of questions and their views of the situation. On the second day a draft declaration was drawn up which was

then subsequently fully formulated and edited by the AWARE team with feedback from the citizens.

### **3.3.2 North Sea case study – local conference**

The local conference in Dunkerque was attended by 91 participants. One of the main objectives of the conference was to obtain feedback from the relevant stakeholders and policy makers on the recommendations and demands made in the citizen declaration. Another goal was to build four scenarios based on the citizens and scientific input.

On the whole, the local conference was designed as a process of collective learning, of sharing the use of tools, and a confrontation with the complex reality of policy making.

### **3.4 Post-consultation phase**

The post or rather inter-consultation phase before the workshop, between the workshop and the conference and after the conference consisted, inter alia, of an on-line survey to stakeholders and policy makers and a questionnaire to the participating citizens. For the North Sea case study the online survey received 18 responses. An analysis of those responses is provided in Deliverable D3.3 of the AWARE project.

### **3.5 Evaluation of consultations**

The evaluation of consultations is the result of the analysis of three main elements:

1. the methodologies adopted: moderator, methodologies and materials;
2. the citizens' and stakeholders evaluation of the local events, provided by evaluation questionnaires; and
3. the evaluation team's observations and assessment.

However, it should be noted that this document contains only the descriptive part of the evaluation, i.e. what was organized and how; what was discussed; how did the knowledge and perception of the citizens change. The analytical part of the evaluation, i.e. how effective and efficient was the process, what were its strengths and weaknesses, is contained in Deliverable 3.3.

### 3.5.1 Background Knowledge

In the general part about background knowledge 60% of the citizens stated that they had learned about the EU Water framework Directive in preparation of the meeting, 30% had pretty good knowledge beforehand and 10% had no knowledge whatsoever.

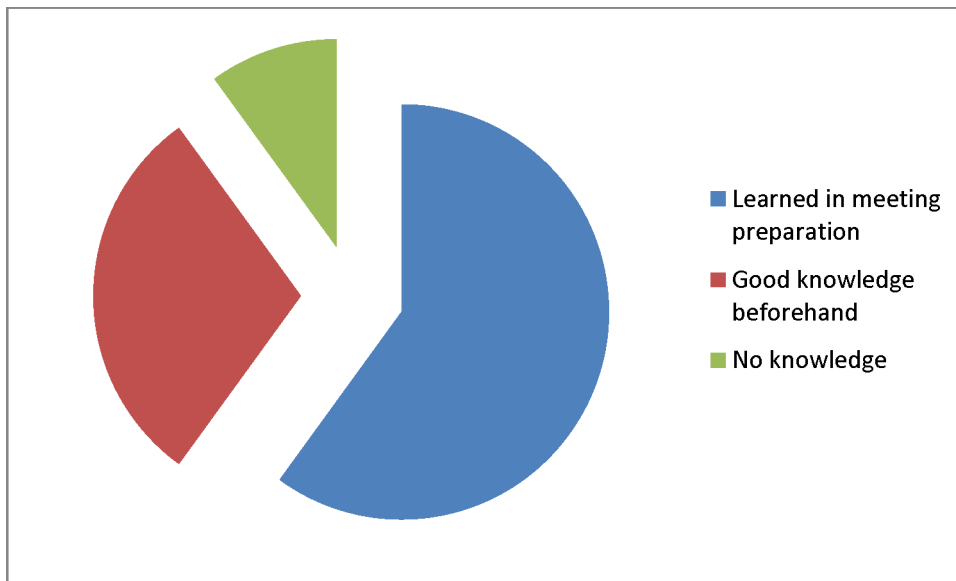


Figure 1: Background knowledge about the WFD

Similar responses were given in terms of environmental pollution; 50% learned about the specific environmental pollution of coastal waters in preparation of the meeting, 30% had a pretty good knowledge beforehand, 10% had heard about it but no more and 10% had no knowledge.

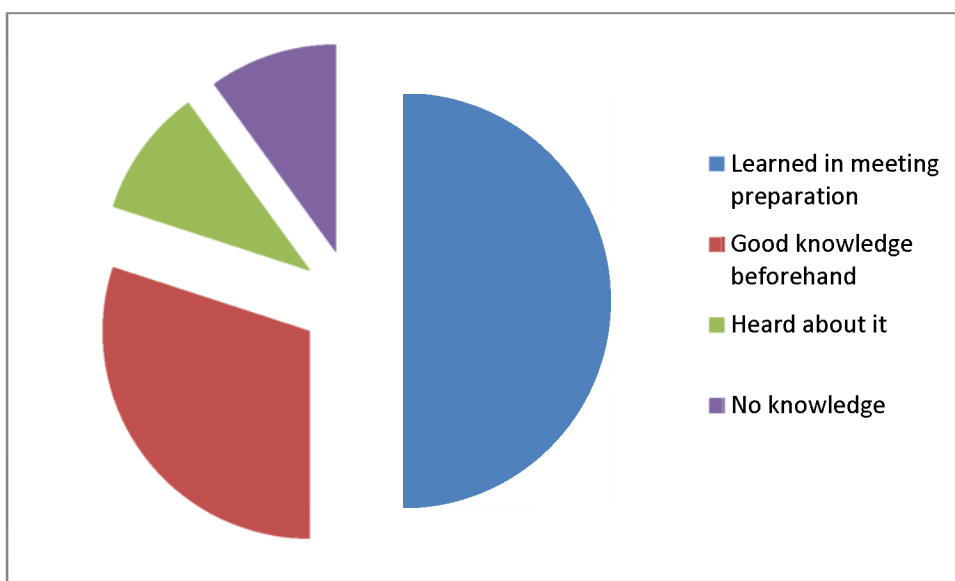


Figure 2: Background knowledge about environmental pollution

Regarding Science-Policy Interfaces and Citizen Participation, 50% learned while preparing the meeting, 20% had a pretty good knowledge, 20% had heard about it, 10% had no knowledge.

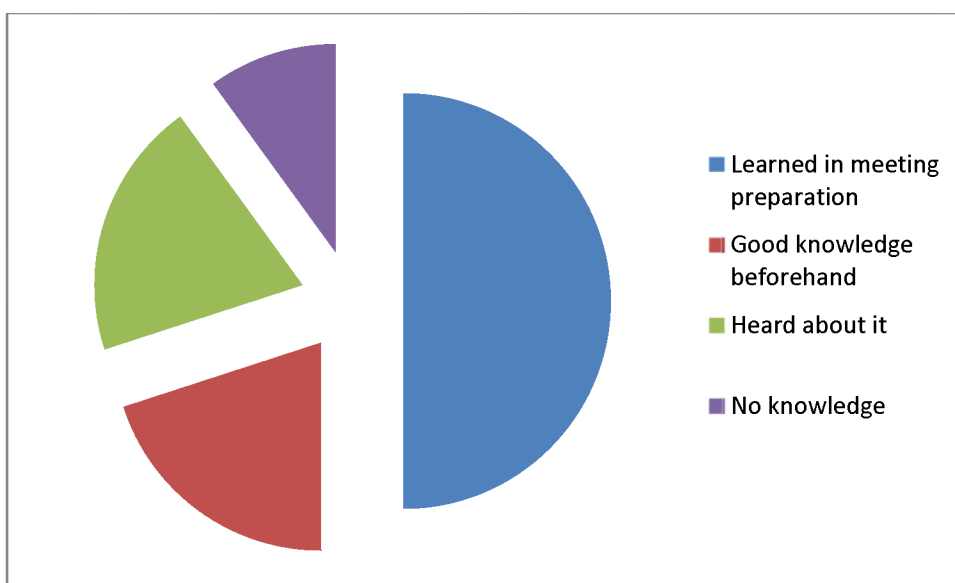


Figure 3: Background knowledge about Science-Policy interface

### 3.5.2 Assessment of what was been learned.

All citizens stated that they had learned a lot during the meetings. Various subjects were especially highlighted; water treatment, sources of pollution, complexity of organization

management, official positions of governmental agencies, experiences of fishermen and farmers, European Directives, agricultural issues (expecially organic and responsible agriculture).

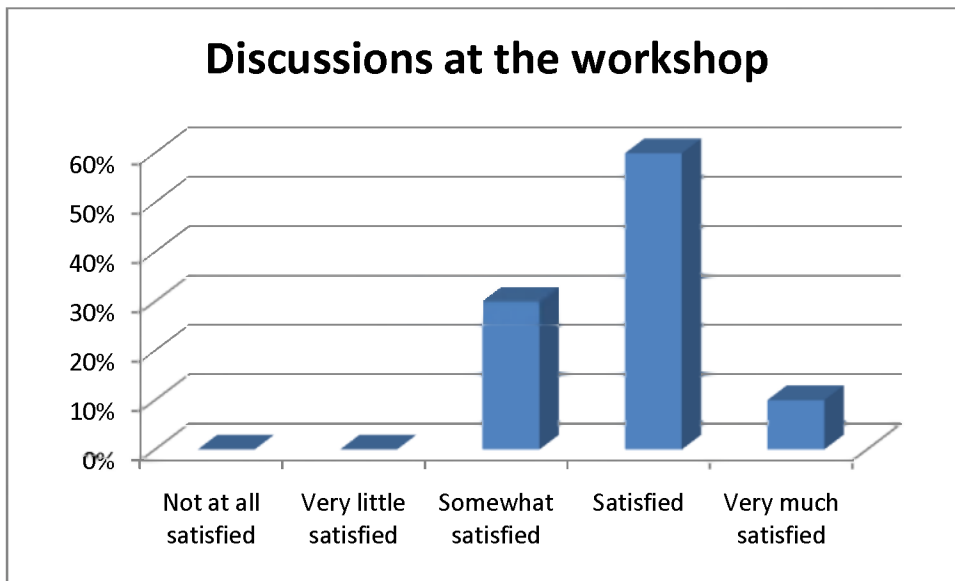
### 3.5.3 Levels of satisfaction

In terms of overall satisfaction 80% were generally pretty satisfied while while 10% were reasonably satisfied and 10% did not answer.



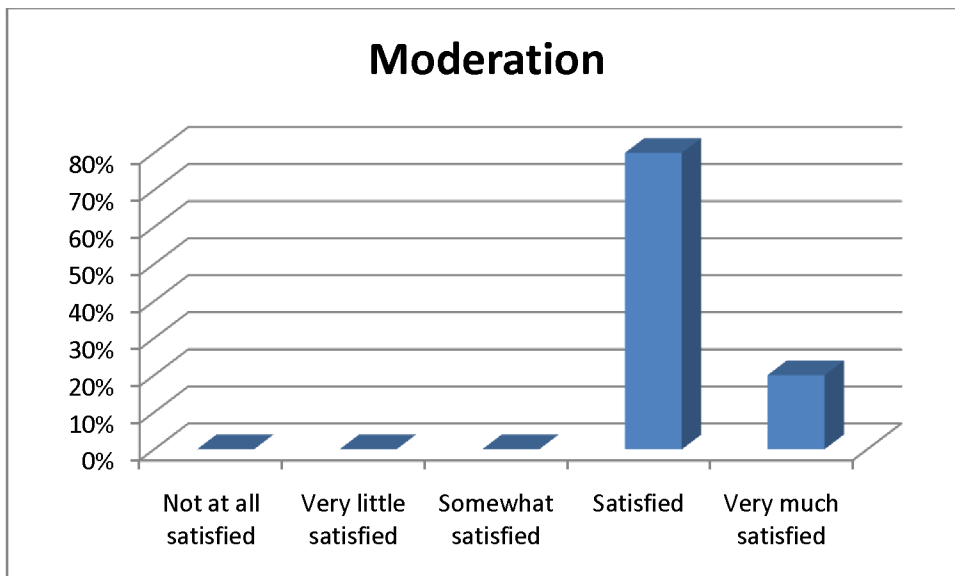
**Figure 4: Overall satisfaction**

Regarding the discussion parts of this workshop, the evaluation is by and large positive; 10% were very satisfied 60% satisfied and only 30% somewhat satisfied, leading to an overall mark of 3.8 (on a scale of 1-5 with 5 the highest mark). It is interesting to contrast this result with the question on discussion outputs where the mark is significantly lower (3.2). This seems to suggest that the solution-orientated outputs were not that clear to all participants.



**Figure 5: Discussions at the workshop**

The work of the Moderators was very much appreciated; 80% rated 4 (on a scale of 1-5 with 5 the highest mark) and 20% even rated it 5.



**Figure 6: Moderation**

Communication tools and techniques were not as much appreciated; they are balanced between marks of 3 and 4 with an average close to 3.5 (compared to “Moderation” with an average of 4.2).

Among the text responses for to the open questions about recommendations the following points were raised;

- More preparation
- More information in advance about people we meet and the way we are going to work together.
- Still curious about the general outputs of the process.
- Respect the timing and leave enough time to the citizens to exchange ideas with each other and with other stakeholders.
- Part of the Belgium situation has not been taken into account in this project merely because of the language.

Finally, regarding the meeting of expectations a large share of one third of all citizens stated that their expectations were fully met, a further 40% that they were mostly met and the remaining 30% that they were at least somewhat met.

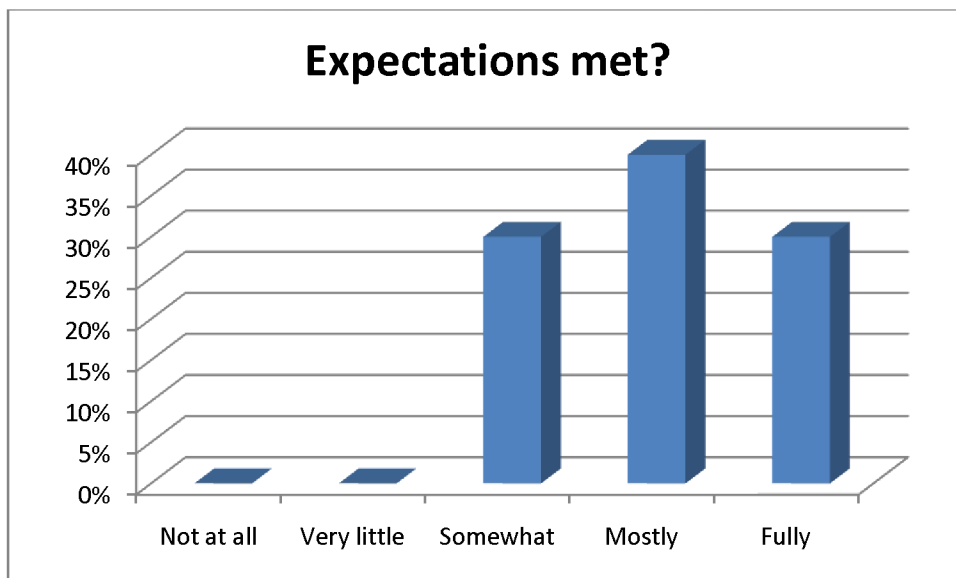


Figure 7: Meeting of expectations

Only regarding the work of formulation of the Citizens' Statement, the assessment is more critical; while half of the citizens were satisfied a significant share of 20% expressed that they were not very much satisfied.



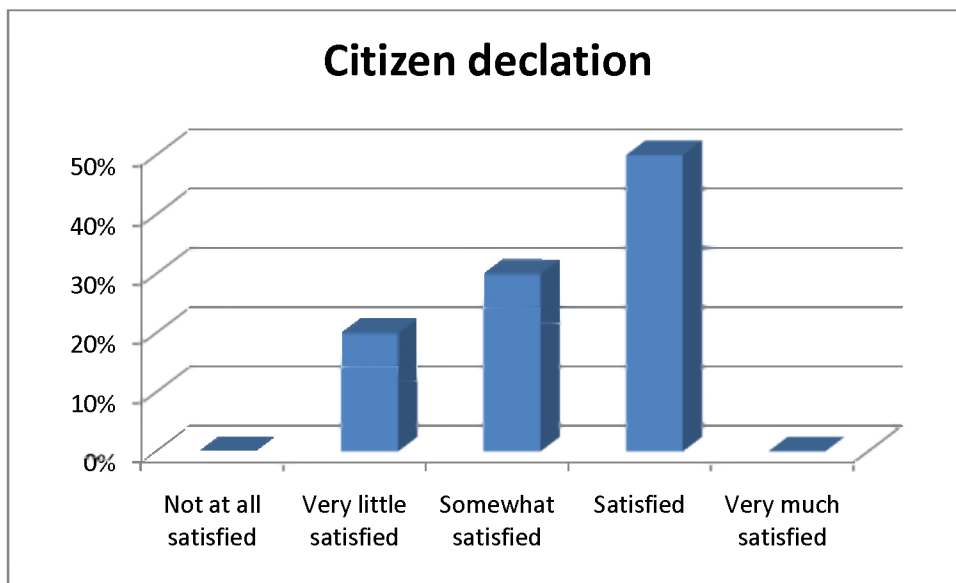


Figure 8: Satisfaction with citizen declaration

## 4 Gulf of Riga Case Study

### 4.1 Overview of the Gulf of Riga Case Study

In this section the information collected derives from the documentation provided within the case study. It is provided by the *partners responsible for the Gulf of Riga case study* (hereafter named *Gulf of Riga Team*) and it is evaluated in terms of:

- Completeness, i.e. whether the information provided is capable of describing all the issues at stake concerning the case study, as regards the scientific and the policy background;
- Coherence, i.e. whether the information is appropriate for the correct development of the process, and for feeding, in terms of knowledge, participants;

The Gulf of Riga Team includes Bioforsk of Norway, Uppsala University (Department of Earth Sciences) of Sweden, and the Baltic Environmental Forum (BEF) Latvia.

#### 4.1.1 Geographical scope

The Gulf of Riga, a shallow sub-basin of the Baltic Sea, is located in northern Europe and is shared by the two Baltic countries Estonia and Latvia. It has a surface area of 16,330 km<sup>2</sup> and borders the Estonian and Latvian main lands. The Gulf of Riga is separated from the Baltic Proper by the two islands of Muhu (206 km<sup>2</sup>) and Saaremaa (2 650 km<sup>2</sup>). These islands are important nature reserves and are protected as such. The drainage basin area of the Gulf of Riga has a total area of 138 000 km<sup>2</sup>, including Estonia (7 000 km<sup>2</sup>), Latvia (59 000 km<sup>2</sup>), Lithuania (10 000 km<sup>2</sup>), Belarus (38 000 km<sup>2</sup>) and Russia (24 000 km<sup>2</sup>). Most of the pollution in the Gulf of Riga can be attributed to activities in the drainage basin and to the input from the Baltic Sea. The drainage area is defined by the drainage basin of the Daugava River originating from Russia, via Belarus to Latvia and several smaller rivers such as Parnu (Estonia/Latvia), Salaca, Gauja and Lielupe (Latvia/Lithuania). There are more than 4,5 million people living in the drainage area of the Gulf of Riga.

Although five countries contribute to the drainage basin that affects the Gulf of Riga, only Latvia and Estonia – actually bordering the Gulf – are involved in the AWARE process. The fact that Lithuania and non-EU member states Russia and Belarus also impact the Gulf but were not involved was brought up during the local workshop process. In addition, this led to discussions on various international mechanisms of implementing abatement measures. Due to the difference in language, it was decided early on in the project that the Gulf of Riga case process, including the local events, would take place in English, which serves as a common language between the two countries. **Overall, this did not seem to have negative impacts on the discussions between the citizens, stakeholders, and scientists** – although specific individuals

may have had a somewhat more difficult time expressing their opinions. On the one hand, having all local activities in English may be considered an advantage, as **the group has seamlessly transferred information and knowledge between the EU level workshops to the local activities**. On the other hand however, **it may have also lent more of a feeling of disconnect during the local discussions**, as a common mother tongue was not available and could not act as a further bond to the group.

#### 4.1.2 Scientific background

The description of Gulf of Riga has been based on the scientific knowledge produced by several studies. Much research had also already been done by scientists from the Uppsala University, who are part of the Gulf of Riga Team. The information provided by the Inception and Case Study Reports synthesise the scientific knowledge that has been provided so far, depicting complete picture of the actual environmental, issues.

Among the socio-economic and environmental issues identified in the Inception and Case Study Reports are:

1. Eutrophication
2. Relationship between primary production and fish yield
3. Tourism and recreation along the Gulf coast
4. Rapid industrial and agricultural restructuring following the independence of the Baltic countries
5. Social and economic conditions

In summary, the ecological challenges in the Gulf of Riga centre around increasing nutrient pollution from agriculture, industry and urban sewage, which all lead to eutrophication. The scientific models that were used and shared with the AWARE project partners and citizens included CoastMab and the Nest model of the Baltic Nest Institute. The CoastMab model was used successfully in the communications of the Gulf of Riga scientist team to the citizens or stakeholders, particularly due to the ease in understanding. The model uses Secchi depth – or the depth of clarity of the water – as well as levels of chlorophyll to show predictions in outcomes from changes in sewage treatment for example. In fact, the model can predict phosphorus levels throughout the Baltic Sea sub-basins. It is a **tested and very useful tool to analyse different strategies for reducing eutrophication**.<sup>6</sup>

Thus, similar to the Italian case study, **the ecological, biogeochemical and socioeconomic investigations allowed the Gulf of Riga Team to present a good level of knowledge of the local ecosystem**.

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<sup>6</sup> Stalnacke, Per, Bryhn, Andreas C., Hakanson, Lars, Nagothu, Udaya Sekhar, and Veidemann, Kristina 2009. The Gulf of Riga Case Study. AWARE Project Deliverable D1.2.

Using the CoastMab model predictions, presented in the EU and the local level AWARE workshops, it was clear that there are some trade-offs between the amount of phosphorus reduction and the cost and time investments necessary for these reductions to be implemented. Also, the question of maintaining agriculture in the area was also compared with the benefits from reducing phosphorus concentrations. The Gulf of Riga case study is different than the others however, in that there is clear sector in which treatment would significantly reduce phosphorus concentrations: sewage treatment is cost-effective, provides visible results, and still offers potential for reductions<sup>7</sup>. Furthermore, the CoastMab model became an important part of the AWARE discussions as it can be used to predict fish yield in the Gulf of Riga – in general it can be said that with lower phosphorus and other nutrient concentrations fish stocks will also be lower.

**Using the CoastMab model for the Gulf of Riga thus made it possible for the different actors – scientists, stakeholders, and citizens – to fairly quickly have a common understanding of the ecological status of the Gulf of Riga, and thus engage in the participatory process.**

#### 4.1.3 Policy background

While the CoastMab model was used to aid the scientists in the region explore such challenges as eutrophication, a policy-related model was also used to address these issues. The DPSIR approach for the Gulf of Riga presents the following overview<sup>8</sup>:

<b>Driver</b>	Urban, industrial and agricultural sectors
<b>Pressure</b>	Phosphorus concentrations from rivers
<b>State</b>	High phosphorus concentrations lead to intensive algal growth
<b>Impact</b>	Intensive algal growth and unclear water affect tourism, recreation, and the public's perception of the Gulf's health
<b>Response</b>	Sewage treatment plants as an effective way to remove phosphorus

This model combines the scientific causes of ecological problems with their impacts, and provides also the response actions necessary. In combination with the CoastMab model this representation of the challenges helped the AWARE actors have a common understanding of the different aspects to take into account, and eased discussions. Particularly relevant for the policy discussion for examples, was the fact that regarding the EU Urban Waste Water Treatment Directive the Gulf of Riga region still has much room for improvement. This discussion is also reflected in the citizen declaration at the local level.

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<sup>7</sup> Stalnacke, Per, Bryhn, Andreas C., Hakanson, Lars, Nagothu, Udaya Sekhar, and Veidemane, Kristina 2009. The Gulf of Riga Case Study. AWARE Project Deliverable D1.2.

<sup>8</sup> Stalnacke, Per, Bryhn, Andreas C., Hakanson, Lars, Nagothu, Udaya Sekhar, and Veidemane, Kristina 2009. The Gulf of Riga Case Study. AWARE Project Deliverable D1.2.

Another interesting discussion that was brought up in the local participatory process was the issue of paying for the pollution reduction measures. From a holistic scientific perspective the pollution in the Baltic Sea and the Gulf of Riga is shared by all the countries surrounding it and discharging waters into it. Therefore the costs of nutrient reduction measures should also be shared. This is particularly relevant in light of the fact that the Baltic States are among the most severely affected – especially during 2008-2010, by the economic recession<sup>9</sup>.

In terms of national policies the Latvian Law on Water Management – dealing with the implementation of the Water Framework Directive in Latvia – came into force in 2002. In Estonia, the Water Act of 1994 oversees water management plans in river and sub-river basins. During the local AWARE workshop new information was presented to complement this policy overview: a new Law on Marine Environment Protection and Management had just been passed at the end of October 2010.

#### 4.1.4 Science-Policy interface

The lack of a complete assessment of the water ecosystem of the Gulf of Riga was identified by the Gulf of Riga Team as the main constraint in the science-policy linkage. In particular, the region lacks sufficient data (especially on the impacts of water pollution on habitats) and suffers from irregular funding for monitoring. Thus there is great uncertainty in the evaluation of the status quo<sup>10</sup>.

During the early 2000s there were several short-term projects funded by Sweden and Denmark for example, in order to assist Latvia and Estonia to comply with the Water Framework Directive (WFD). These projects worked to enhance coordination between the different ministries and agencies working in the water and environmental fields<sup>11</sup>. The Baltic Environment Forum (BEF) Latvia has been particularly active in increasing the role of NGOs in the implementation of the WFD and increasing public participation. At a project meeting in October 2009, a decision was made – by contractual amendment – to involve the BEF. The reason was due to the fact that the Uppsala University and Bioforsk, although having been actively involved in the region for many years, are not located in either Latvia or Estonia. The BEF, also by virtue of its networks as a local NGO, would be more suitable to carry out local propaganda activities for selecting citizens, for instance. The decision was welcomed by all

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<sup>9</sup> Bryhn, Andreas C., Veidemane, Kristina, Hakanson, Lars, Stalnecke, Per, Dimberg, Peter H., and Nagothu, Udaya Sekhar 2010. The Gulf of Riga case study content and process design report. AWARE Project Deliverable D2.1.

<sup>10</sup> Gulf of Riga Team 2010. Input for AWARE Policy Brief 1. Not published.

<sup>11</sup> Stalnecke, Per, Bryhn, Andreas C., Hakanson, Lars, Nagothu, Udaya Sekhar, and Veidemane, Kristina 2009. The Gulf of Riga Case Study. AWARE Project Deliverable D1.2.

partners and brought significant benefits to the local processes for the Gulf of Riga, and the BEF became a full partner as of 1 January 2010<sup>12</sup>.

In terms of public participation in the Gulf of Riga, the Public Information Act describes participation procedures in the decision-making processes. Environmental information is available on the Ministry websites both in Estonia and in Latvia. However, the feedback of the citizens in the local workshop pointed to the fact that although open, the information is not necessarily clear or understandable. The ministries of environment in both Latvia and Estonia formed work groups/ coordinating committees in 2005-06 with various stakeholders, in order to discuss the development of the first River Basin Management Plan. Regular meetings, later also with the wider public, took place until 2009 and resulted in river basin management plans now available on the internet.

Additionally, the Estonian Environment Information Centre provides much environmental information. Although the text of the WFD is translated into Estonian for example, it may not be helpful to the public without the context of, and an explanation of the consequences for, the local legislation. In general, **the Gulf of Riga Team noted that “top-down” approaches to participation prevail, but are balanced by local NGO-led initiatives.** Also, the engagement of citizens – although sometimes included through public consultations – often remains with NGSs of municipalities who represent the interests of, and then communicate back to, the citizens.

#### 4.1.5 Stakeholders

Stakeholders have been defined in AWARE<sup>13</sup> as *all those with financial, knowledge or other resources in the area with a capacity and will to facilitate or block policy initiatives at either the design or implementation phase. Stakeholders also include users and citizens directly or indirectly affected by the water management measures.* **Stakeholders in the Gulf of Riga centre on fisheries, agriculture, tourism, and nature conservation.**

Stakeholder participation was addressed by categorising them according to levels of influence and interest. This matrix to be used in the stakeholder mapping was proposed by the Bioforsk partner at the AWARE kick-off meeting in June 2009. Those of highest influence and with most interest – i.e. the most critical stakeholder group – were identified by the Gulf of Riga Team as:

- HELCOM (Helsinki Commission), which is of key importance in the Baltic Sea Action Plan.

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<sup>12</sup> ISIS 2009. Minutes Ferrara 22-23.10.09 FINAL.

<sup>13</sup> Giorgi, Liana, Pohoryles, Ronald 2010. AWARE Evaluation Methodology. AWARE Project Deliverable. Available at: <http://www.aware-eu.net/>.

- The two ministries for the environment, of Latvia and Estonia, as key for the implementation of the WFD and the Marine Strategy Framework Directive.
- The World Wildlife Fund, which is among the two most important transnational NGOs working in the Baltic Sea, including both in Latvia and Estonia.
- The Latvian Environment, Geology and Meteorology Agency.
- The Nature Conservation Board of Latvia
- The Association of Coastal Municipalities of Latvia

Those stakeholders with high interest but low levels of influence – including for example the Latvian Advisory Training Centre and Farmers Parliament – were considered as important and perhaps in need of empowerment. Also, those stakeholders with high levels of influence but low interest – including the Ministry of Agriculture for instance – may be useful in the context of decision-making. Interestingly, the **scientific community was considered among those stakeholders that had both a low level of interest as of influence**. It appears that until now the role of scientists has been rather passive concerning water management planning. Although they contribute knowledge, they are rarely more actively involved and engaged in the decision-making process. Recent trends however, show that **research projects are starting to include sharing data and proposals targeted for policy measures**, which addresses the science-policy gap. It is also interesting to note that in AWARE the initiative for engaging the stakeholders is put in the hands of the scientific community, which gave increased credibility to the activities, from the point of view of the stakeholders<sup>14</sup>. Policy makers were interested in the AWARE process due to the implementation requirements – to include both scientific information and public participation – of the Marine Strategy Framework Directive.

## 4.2 Pre-consultation phase

The design activities that contributed to the development of the Gulf of Riga case study were undertaken in collaboration between the Team members (Bioforsk, Uppsala University, and BEF). A meeting also took place in March 2010, in order to assist the organisation of the local case study details. There, the three case study teams discussed in detail the organisation, agendas, participation, and outcomes of the different local workshops and conferences. Although the discussions were not very concrete, they were still able to learn from each other and exchange considerations for a better process.

During the AWARE project meeting that took place immediately after the first EU level citizen workshop, the organisation and format for the local workshops were discussed again. Among the decisions taken were to invite individuals to the workshop based on answers to the online survey (which was planned for the months of June-September 2010); to discuss scientific

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<sup>14</sup> Gulf of Riga Team 2010. Input for AWARE Policy Brief 1. Not published.

scenarios in an integrated manner between all the actors present at the workshop and then present the results at the local conference; and to make sure the workshop addresses those issues about which the citizens expressed doubts during the EU level workshop. For the Gulf of Riga, it was decided that the first day of the workshop would include discussions between citizens and scientists, as the groups of citizens expressed more interest in the status of the coastal waters than was presented during the EU level workshop.<sup>15</sup>

Due to the international nature of the Gulf of Riga Team, most of the rest of the communication was over email or phone. Responsibilities and roles however, were shared and agreed among the different organisations. The use of a “dropbox” available both online and offline was used by the Gulf of Riga Team to facilitate the communication between them and the sharing of documents.

#### 4.2.1 Citizens’ recruitment

The selection of citizens for the AWARE project started with the dissemination of an invitation letter and an application form. Recruitment methods were promoted by dissemination activities distributed on the territory and in significant places such as universities and libraries. Posters were also used, printed in English for the Gulf of Riga case. The posters displayed several pictures (provided either by the AWARE partners or selected from online photo portals) – from all three AWARE case studies. The poster also included a short introduction of the project, including the slogan “Let’s save the sea, your opinion counts!” as a way to motivate individual involvement. Posters redirected people to the website, which provided all the necessary information for citizens’ involvement. In the Gulf of Riga case the main partner that undertook publicity activities was the Baltic Environmental Forum. The BEF used the following ways to attract citizen applications:

- Publishing the announcement on the biggest portal for job search and vacancies: [www.cv.lv](http://www.cv.lv) in Latvia and its cooperation partner in Estonia;
- Sent press releases;
- Publishing the announcement on the BEF website as well as on the web page of the Ministry of the Environment;
- E-mailing to BEF stakeholders (municipalities, science, public bodies).

The methodology used in performing the selection was made up of two steps:

- 1 Evaluation of the candidatures
- 2 Random selection of the AWARE citizens’ panel members

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<sup>15</sup> ISIS 2010. Minutes 26 April 2010.



A score (Low, Medium or High) has been assigned to each evaluation, based on the answers provided to the two open questions:

- Why you want to apply to participate to a Citizen's conference?
- What is your current perception of the quality of the coastal water environment you are mostly related with: good or bad, and why? Do you have any idea on how to improve it?

The answers to these questions allowed the Gulf of Riga Team to evaluate the level of written English, the degree of motivation and the perception and understanding each candidate shows of the problems at stake. Three evaluators from ISIS and Missions Publiques looked at all the applications. Three additional evaluators from the case study partners were selected to evaluate the applications received for each case studies (one evaluator each from BEF, Bioforsk and Uppsala University for the Gulf of Riga case).

Citizens were motivated to apply by the topic and the nature of the activities (coastal water health, and public participation in decision-making). Additionally, they receive a one-time compensation fee of 500 Euro for participating in five meetings along the course of the project.

A summary score, equal to the most frequent score assigned to each candidate by the eight evaluators, has been computed and used in the random selection procedure to assign a different probability of being selected according to the high, medium or low (summary) score.

For the Gulf of Riga case, the team received a great number of applications. In fact, of the total number of citizens applying from the five different countries, 53 percent were from Latvia and 18% from Estonia (see Figure 1). Since the announcement was on national portals, some applications came also from locations quite far from the Gulf of Riga. A suggestion was made to exclude them from the selection. **The goal of attaining 100 applications was achieved by BEF by 4 February 2010.**

Individual interviews were performed in English by the Gulf of Riga Team, after the submission of the application forms.

After the EU level workshop, all citizens that applied received a thank you letter, and an invitation to join the AWARE Facebook site.

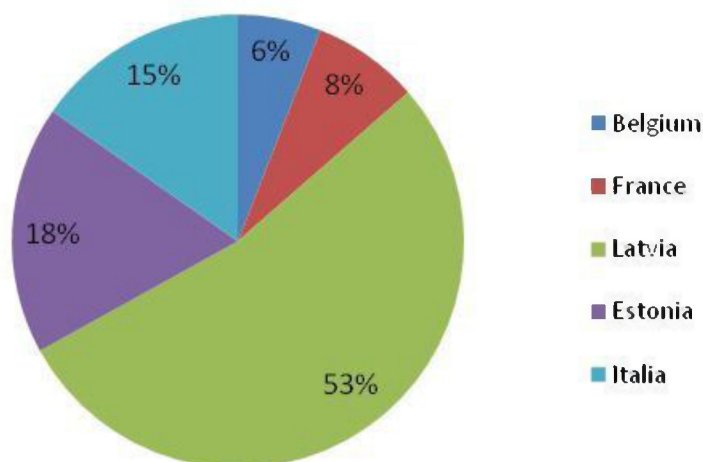


Figure 9: the percentage of citizen applications received from the five AWARE case study countries

The selection of citizens for the Gulf of Riga was seemingly less complicated than for the other two case studies. This could be due to the fact that BEF, an environmental NGO with good networks and experience in mobilising the public, took charge of the recruiting process. Also, the announcement was placed in a job portal, which also had a good chance of attracting people that were inclined to remain involved in the process. The composition of the citizen group: 8 Latvian and 2 Estonian members reflect partly the composition of the AWARE partners, but also partly the ecosystem and policy environment of the region.

#### 4.2.2 Design of the Local Workshop

The Gulf of Riga Team collaborated on the design of the local processes. The scientist teams from the Uppsala University and Bioforsk illustrated significant research outcomes and studies. They were joined by a further local scientist, from the Latvian Institute of Aquatic Ecology. The addition provided further information for the citizen, and an opportunity to see the AWARE scientists, whom they had already met previously, in a context of greater scientific exploration of the Gulf of Riga.

Both the workshop and the conference took place in Latvia, given that the majority of the citizen came from there. Earlier on it was decided, however, that due to the longer distances the citizens would have to travel, and the inconveniences associated with travel and work days lost, the workshop and the conference would be organised back to back. The Local Workshop took place on 29-30 October 2010 in Jurmala, 30 minutes from Latvia's Capital Riga. The location was chosen due to its position on the coast of the Gulf, and to its association with recreational activities along the Gulf of Riga. The location was also appreciated by all participants, including the stakeholders invited to speak; a total of 25 people took part in the workshop. The two-day workshop was preceded by a meeting of the Gulf of Riga Team who

was joined by the AWARE evaluator of the Gulf of Riga case study, from adelphi. At this planning meeting the agenda was finalised; the logistics were discussed; and the discussion questions for the two days were agreed upon. There it was also decided, in order to make best use of the time available, that the adelphi evaluator would take notes over the two days and keep a running list of those statements made by the citizens that could be included in their local declaration. In order to make sure that the proceedings of the two days would not be lost, a recording device was used throughout the presentations and the discussions.

As mentioned above in Section 4.3, the Gulf of Riga citizen group wished to receive further scientific information on the state of the ecosystem (please see the workshop agenda in Annex A). Therefore, the first day of the workshop was dedicated to the “Present Situation in the Gulf of Riga”, including the trophic status, and pollution from oil spills and other hazardous substances. The first part of that day concluded with a model presented by the AWARE scientist team on the pollution reduction required for the Gulf of Riga to attain the good status goal of the Water Framework Directive. In the second half of the first day the citizens – divided into two groups – worked on a future vision for the status of coastal and marine waters. The day ended with a view of relevant national policies and legislation from both Latvia and Estonia, as well as with a presentation on international cooperation with Russia and Belarus.

During the second day of the workshop four key topics for the Gulf of Riga – urban waste water, agriculture, fisheries, and tourism – were analysed in greater detail with the assistance of relevant invited speakers. The last part of the day was devoted to the formulation of the citizens’ recommendations for action on connectivity between science, policy makers, and citizens. Because the local conference was scheduled to take place just two days later, the citizens would not have had the time to work on the recommendations at another date. Therefore, preparations for the conference on 1 November, including the citizens who would present the declaration, were made at the end of the workshop. For more detailed information on the workshop please see also the AWARE Project Deliverable D2.4<sup>16</sup>.

#### 4.2.3 Design of the on-line survey

A core set of questions for the online survey was developed by adelphi for all the case studies. Each of the local teams worked to tailor the questions based on their local environmental and policy related differences, while preserving comparability with the other case study surveys. Bioforsk was the Gulf of Riga Team member that led the work on the online surveys. The survey’s final page included data (name of the responsible, telephone number, e-mail address) useful for any eventual other question. The on-line survey targeted about 40 stakeholders,

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<sup>16</sup> Bryhn, Andreas C, Comardicea, Irina, Veidemann, Kristina, Stalnacke, Per, Ovstegard, Rebekka, Sessa, Carlo, Dimberg, Peter H., and Vitina, Dace 2011. The Gulf of Riga case study report: results of the local events, online survey and interviews. AWARE Project Deliverable 2.4.

covering all the areas at stake in the Gulf of Riga. Please see Annex B for a copy of the survey in text form.

#### 4.2.4 Design of the Citizens' Declaration

As mentioned above in Section 4.3.2, the citizens' declaration was already developed at the end of the second workshop day. The outline was presented by the Gulf of Riga Team based on the notes taken by the adelphi evaluator.

The recommendations in the Declaration were structured around the following main themes:

- Water Framework Directive classification of water quality
- Hazardous Substances
- Scenarios for the Future
- Pollution Loads and Impacts
- Policy (including agriculture, fisheries, tourism, and urban waste water)

The drafting work itself took place in collaboration with the citizens and the Gulf of Riga Team. However, since a presentation of the Declaration was planned to take place two days later at the local conference, the thoughts were not elaborated fully, but an outline was developed on which all those present could agree. Please see Annex C for the presentation used by the citizens to present the Declaration at the local conference.

#### 4.2.5 Design of the Local Conference

The Local Conference took place at the Ministry of Environment in Latvia's capital of Riga. A total number of 49 people took part in the conference (although more had registered), where the policy framework, the status and scientific analysis of the Gulf of Riga were discussed. Two citizens from the AWARE group (one from Latvia and one from Estonia) presented the recommendations developed during the workshop. Additionally, a panel discussion was held, moderated by a member of the Gulf of Riga Team, and composed of two policy makers, two scientists, and two citizens (every time one from Latvia and one from Estonia). Participants ranged from students to policy makers, and were engaged and interested in the results of the workshop and the AWARE methodology. The Baltic Environmental Forum was the lead partner for organising and chairing the local conference. Please find more detailed information on the local conference in AWARE Project Deliverable D2.4<sup>17</sup>.

#### 4.2.6 Participatory methods and techniques adopted

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<sup>17</sup> Bryhn, Andreas C, Comardicea, Irina, Veidemane, Kristina, Stalnacke, Per, Ovstegard, Rebekka, Sessa, Carlo, Dimberg, Peter H., and Vitina, Dace 2011. The Gulf of Riga case study report: results of the local events, online survey and interviews. AWARE Project Deliverable 2.4.

Based on the preparatory meetings in the pre-consultation phase, on the planning meeting before the workshop, on the advice and model of Missions Publiques, and the guidance of ICCR (the AWARE partner in charge of evaluation), the local workshop and conference took place to the extent possible in a participatory manner. The invited speakers were asked to use both formal presentations (lasting fifteen- twenty minutes) to present their points, but also to engage with the citizens in a question and answers session. They were asked to explain concepts and to provide participants with open questions in order to collect their attention and feedbacks.

The presenters were asked to tailor their talks with the citizen audience in mind, and to give all relevant information in the way of clear messages. Questions pre-selected by the Gulf of Riga Team served to guide the discussions following the formal presentations. These questions had been already prepared the night before and written on flip chart paper, which meant they were ready for discussion notes when the speaker finished. The BEF partner Kristina Veidemane served as facilitator during the workshop's two days, and she also took notes on the flip chart paper during the discussions.

Aside from the open discussions following every speaker's presentation, the citizens also had the opportunity to work in smaller groups on a vision of the future, which they then presented back to the group in plenary.

### **4.3      Consultation phase**

In this chapter, the evaluation focuses on describing how consultations took place.

#### **4.3.1    Participation at the Local Workshop**

Stakeholders from the fishing, tourism, agriculture, and waste water treatment sector were present at the local workshop, along with members of the research and policy communities. Please see Annex D for a list of participants at the workshop. Please see also Annex E for the full Evaluator's Notes from the workshop.

#### **4.3.2    Participation at the on-line survey**

The online survey, tailored by the Gulf of Riga Team and based on the core set of questions developed by adelphi, was available to stakeholders between July 26 and August 15. Five questionnaires were completed by:

- A policy maker from the Department of Fisheries of the Latvian Ministry of Agriculture
- A policy maker from the Latvian Ministry of the Environment
- A policy maker from the Latvian State Environmental Service

- A member of the Pärnu City Government, Estonia
- A scientist from the Latvian Institute of Aquatic Ecology

The Gulf of Riga Team estimates that the low response rate was due in large part to the summer holiday season, and consider this result a weak part of the case study<sup>18</sup>. Although few in number, the respondents agreed that the state of the coastal waters and the overall ecological status of the Gulf of Riga are “moderate”; also, they agreed that conditions have improved during the last five years due to increased environmental awareness, improved handling of oil, nutrient and other hazardous substances, and international cooperation.

Interestingly the respondents also pointed out some ways in which other actors could strengthen their roles. For instance, civil society (NGOs) could raise general awareness of environmental issues and promote stakeholder cooperation regarding specific environmental measures; scientists were also seen as able to point to optimal actions for improving the ecosystem status – both from an environmental as well as an economic perspective; policy makers should have the role of promoting appropriate and strict regulations, and taking the views of other actors into account; citizens and tourists also were seen to have a role in protecting the environment – by taking individual actions and increasing their awareness.

#### 4.3.3 Participation at the Local Conference

The Local Conference, titled “How to achieve a sustainable ecosystem in the Gulf of Riga”, gathered citizens, local stakeholders and policy makers to discuss the state of the Gulf of Riga, possible scenarios for the future, the current state of connectivity between the various actors, and recommendations for the future connectivity among these actors, as well as for the health of the Gulf of Riga ecosystem. Please see Annex E for the agenda. The first part of the day was focused on the policy framework of both Latvia and Estonia, as well as on the state of the Gulf of Riga from the perspective of an international body of scientists. The AWARE scientist team, as well as the external representative that had spoken during the workshop, took part also in the conference. Due to the convenient location of the conference within the Ministry of the Environment in Riga, participants from the policy arena were encouraged to participate. The policy-related presentations had various levels of impacts on the audience, depending on the clarity of the message. The presentation from the Estonian Ministry of the Environment representative was particularly useful for giving the regional context perspective and for inciting active questions.

Before the AWARE citizen group presented their recommendations, a break was scheduled for refreshments. Due to the break in the proceedings several members of the audience left the

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<sup>18</sup> Bryhn, Andreas C, Comardicea, Irina, Veidemane, Kristina, Stalnacke, Per, Ovstegard, Rebekka, Sessa, Carlo, Dimberg, Peter H., and Vitina, Dace 2011. The Gulf of Riga case study report: results of the local events, online survey and interviews. AWARE Project Deliverable 2.4.

conference before being involved in the more participatory aspects of the event, i.e. the citizen presentation of their recommendations, and the panel discussion. Please see the Annex for the agenda for the complete Evaluator's Notes from the conference.

#### **4.4 Post-consultation phase**

This chapter describes the phases that followed each participatory moment, analysing how outcomes have been managed and how the Gulf of Riga Team supported the process of use and exchange of knowledge in preparation of the successive participatory events.

##### **4.4.1 From the on-line survey to the Local Workshop**

The online survey results were expected to feed the interactions towards both the scientific team of the local case study, citizens and stakeholders. However, due to the low response rate to the online surveys, the results were not as helpful as the Team had hoped. The results were taken into account when considering the topics of the workshop, but other considerations – such as the consultations with other AWARE local case study partners, or the wishes expressed by the Gulf of Riga citizens during the EU level workshop – weighed in more heavily in the design of the workshop.

##### **4.4.2 From the Local Workshop to the Local Conference**

The major post-consultation outcome has been the set of Recommendations developed by the citizens during the workshop. Developed with the assistance of the Gulf of Riga Team it nonetheless included the opinions and statements made by the citizens throughout the two day intensive workshop, and based on conversations they had previously had during the EU level workshop. Before the end of the workshop the citizen group selected two members to present the joint recommendations; it was decided that the team would include one Latvian and one Estonian citizens. Since the local conference took place only two days after the workshop, the time did not allow for further work on the declaration after the end of the workshop. However, informal coordination between the Gulf of Riga Team, the Evaluator, and the citizen members selected to present at the conference did take place before the conference. A PowerPoint presentation of the citizen recommendations was jointly developed and agreed upon by the citizen presenters.

#### **4.5 Evaluation of Consultations**

The evaluation of consultations is the result of the analysis of three main elements:

4. the methodologies adopted: moderator, methodologies and materials;
5. the citizens' and stakeholders evaluation of the local events, provided by evaluation questionnaires; and
6. the evaluation team's observations and assessment.

The evaluation tries to describe how the choices made during the design and preparation phase affected (foster or hindered) the development of the process, considering as sources the outcomes of the participatory moments (discussions, results), the evaluation of participants (questionnaires) and the role of partners. The goal is to understand to what extent the participatory efforts were effective in the AWARE project context. In this sense, the analysis provided in 4.5.1, 4.5.2 and 4.5.3 considers the following aspects:

- *the level of knowledge* regarding central topics such as EU legislation, the coastal environmental issues and the actual interface between science and policy;
- *the level of satisfaction* regarding the designs and the contents provided within the single presentation sessions, in terms of capability of speakers to communicate and present concepts and in terms of the development of the relative discussions;
- *focused topics* related to the peculiarity of Workshop and Conference, such as the drafting work on the Citizens' Declaration (Local Workshop) or the Public Authorities interventions (Local Conference)

#### 4.5.1 Interface with citizens and stakeholders at the Local Workshop

Two questionnaires were distributed at the beginning of the Local Workshop, one for citizens and one for stakeholders. The two versions were basically very similar; two questions more were added into the citizens' version, asking them about their expectations towards the following steps of the process (the Local Conference) and the general satisfaction regarding the drafting work on their Declaration (please see Annex H for the Citizen Questionnaire). In total, ten citizens and six stakeholder questionnaires were collected.

##### 4.5.1.1 Level of Knowledge

*How would you assess your level of knowledge on the following subjects PRIOR to the Local Workshop?*

The subjects were: the EU Water Framework Directive, the Gulf of Riga coastal area and the environmental pollution problems it faces, and the Science-Policy Interface and Citizen Participation.

*Please assess what you have learned and If yes, what issues did you learn most about?*



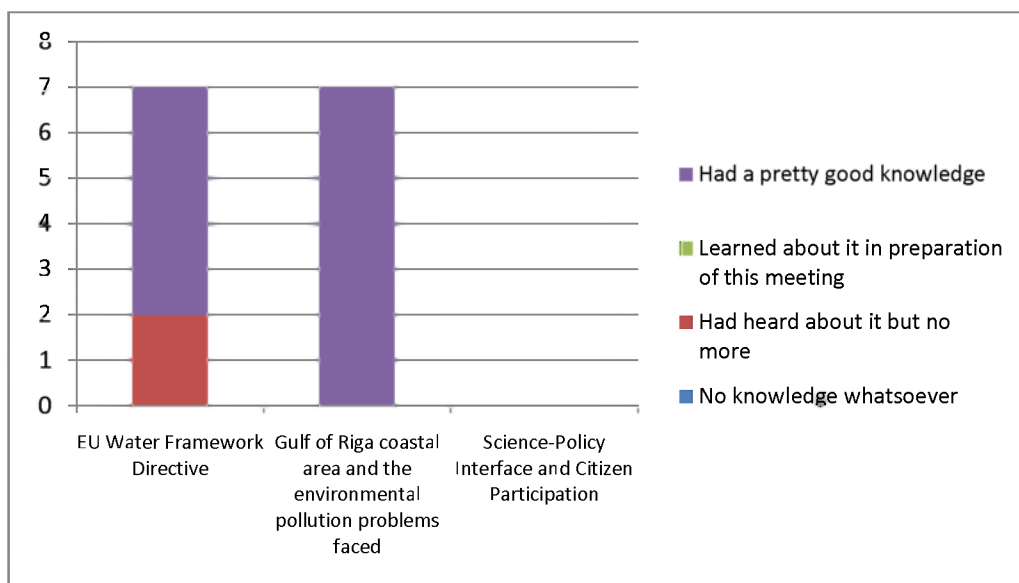


Figure 10: the answers of stakeholders as regards three main subjects

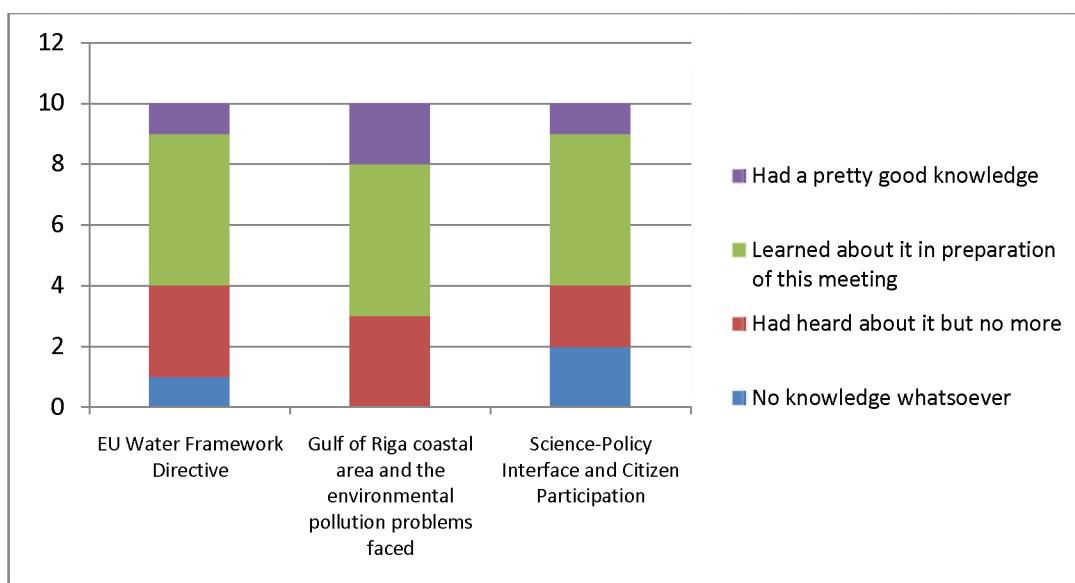


Figure 11: the answers of citizens as regards three main subjects

Different perspectives are displayed in Figure 10 and Figure 11. **Stakeholders generally state to have a pretty good knowledge, especially for the Gulf of Riga coastal environmental problems and mostly for the EU WFD.** Interestingly, the stakeholders gave no answers on the question of science–policy interface.

**The majority of citizens, however, answered all three questions with “learned about it in preparation for this meeting”.** Although the citizens had already received information on all three topics during the EU level workshop, these answers could be interpreted to address: **the large amount of information provided to them and asked to understand; and the complexity**

**of the information provided to them.** This type of answer is also reminiscent of several comments made by the citizens during the workshops, regarding their own knowledge: although their level of knowledge is great and increasing with every meeting, they see themselves as “only” lay citizens and may therefore **underestimate their capacity to contribute with concrete knowledge.**



Figure 12: stakeholders (left) and citizens (right) evaluate their level of learning

The pie charts in Figure 12 display how much stakeholders (on the left) and citizens (on the right) have learned during the workshop. Both stakeholders and citizens have learned from the two day workshop, but citizens have definitely evaluated their learning at a higher level (90% said they learned a great deal) than the stakeholders.

The results above go hand in hand with question 3, which asks what participants have learned most about. **Citizens mentioned a variety of topics about which they learned most** – biased naturally by their own personal interests. Included in their answers are: differences between organic and conventional agriculture; the difficulties of the science-policy gap; sewage treatment; pollution legislation; international cooperation; and detailed scientific information on the Gulf of Riga ecosystem. From the stakeholder evaluations however, there was only one answer given to the question, and that stakeholder mentioned **having learned most about citizen involvement.**

#### 4.5.1.2 Level of satisfaction

The second part of the questionnaire was focused on the level of satisfaction, asking participants to rate the individual sessions as well as the overall logistics of the workshop.

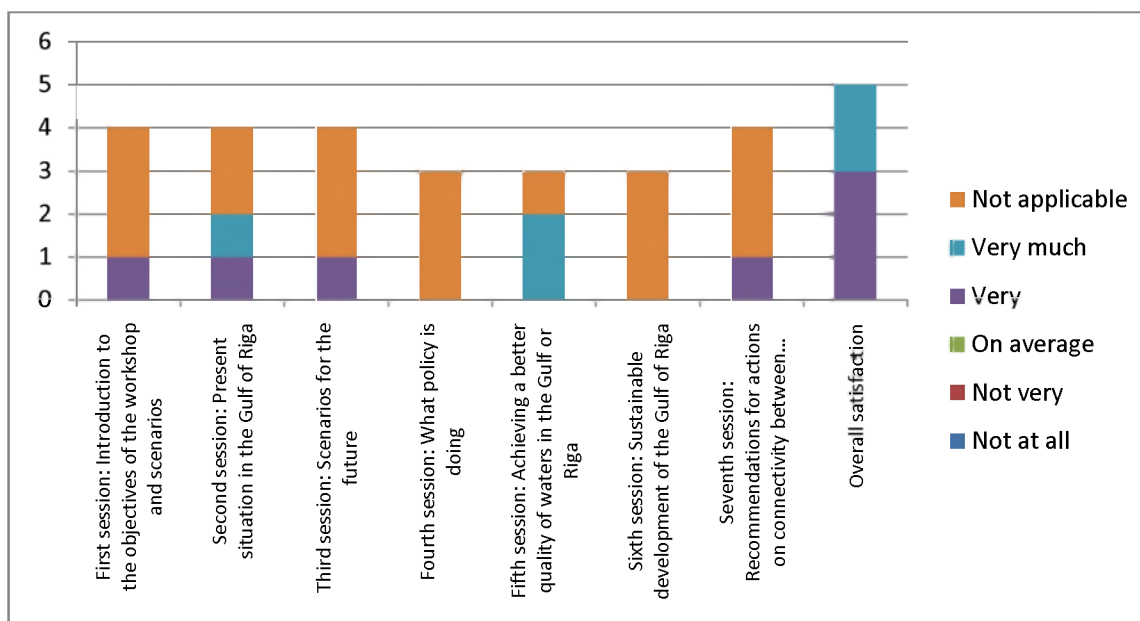


Figure 13: the level of satisfaction for stakeholders of the Workshop single sessions

The graph in Figure 13 displays the level of satisfaction attributed to the single session presentations by stakeholders. Several of the sessions were not applicable for certain stakeholders, since most of them only listened to one or two presentations during the two days. However, where they participated stakeholders had a high level (“very” to “very much”) of satisfaction with the single sessions, and a high level of overall satisfaction.

The graph in Figure 14 displays the citizens’ answers to the same questions. Overall the level of satisfaction with the sessions was high, and the overall level of satisfaction similar to that of the stakeholders. However, it is interesting to note that **the only session that received a score of “not very” was the one related to policy solutions**. It was clear also from the session that the citizen group had a hard time understanding the very complicated presentation.

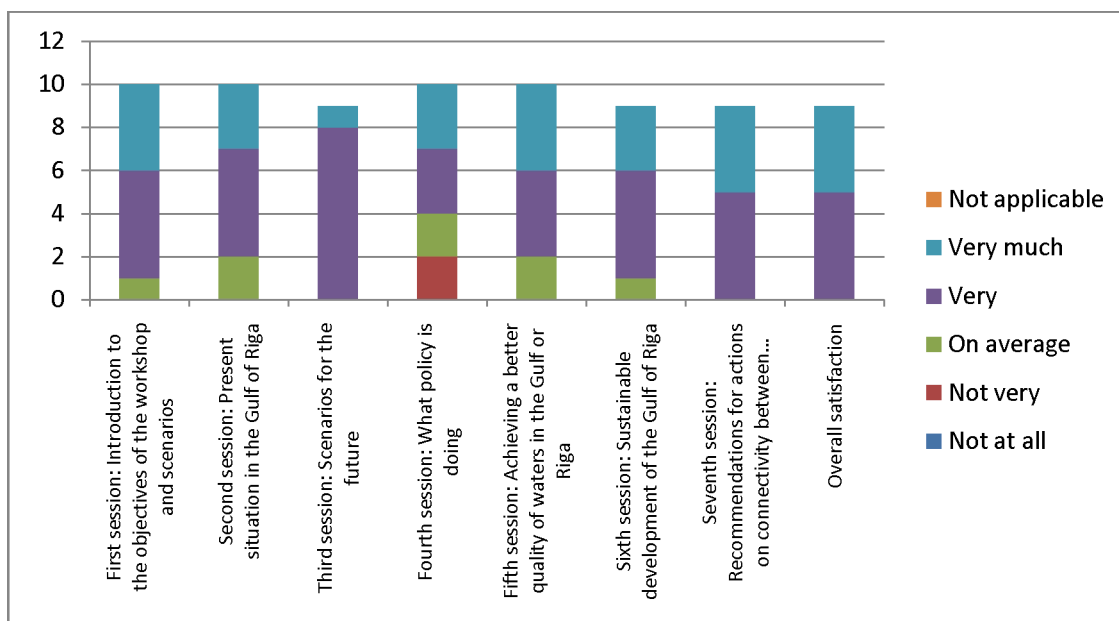


Figure 14: the level of satisfaction of single sessions for Citizens

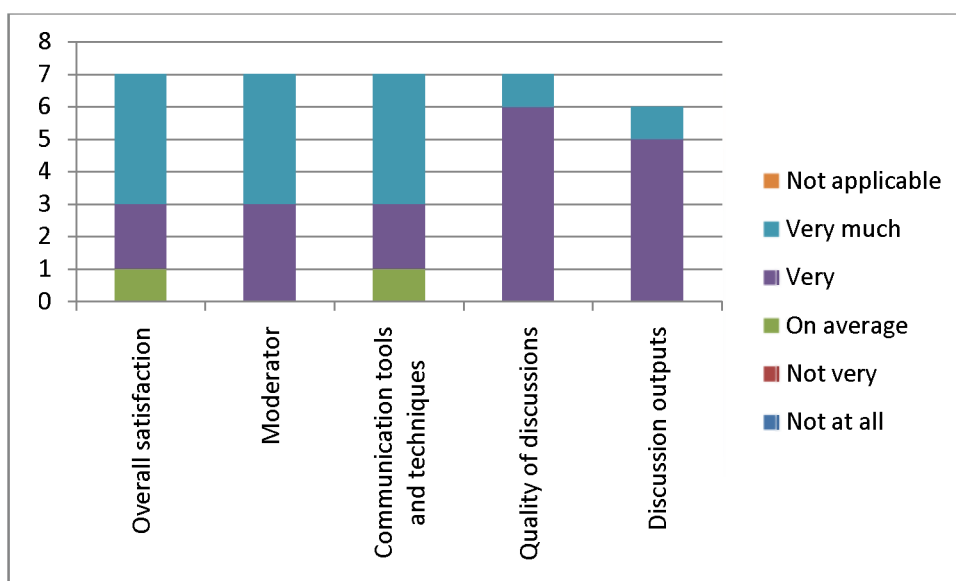


Figure 15: the level of satisfaction as regards the participatory elements of the workshop for the Stakeholders

Participants were also asked to rate the participatory elements of the workshop. Overall the stakeholder (Figure 15) and the citizen participants shared similar opinions regarding elements such as the moderator and the quality of discussions. Overall **the most appreciated elements of the discussions were the moderator skills and the communication tools** – mainly the time allowed for discussion and questions. The citizens did seem to give a more nuanced set of answers (Figure 16), which could probably be explained by the fact that they participated over the entire two days and received a holistic use of the facilitation and participation tools.

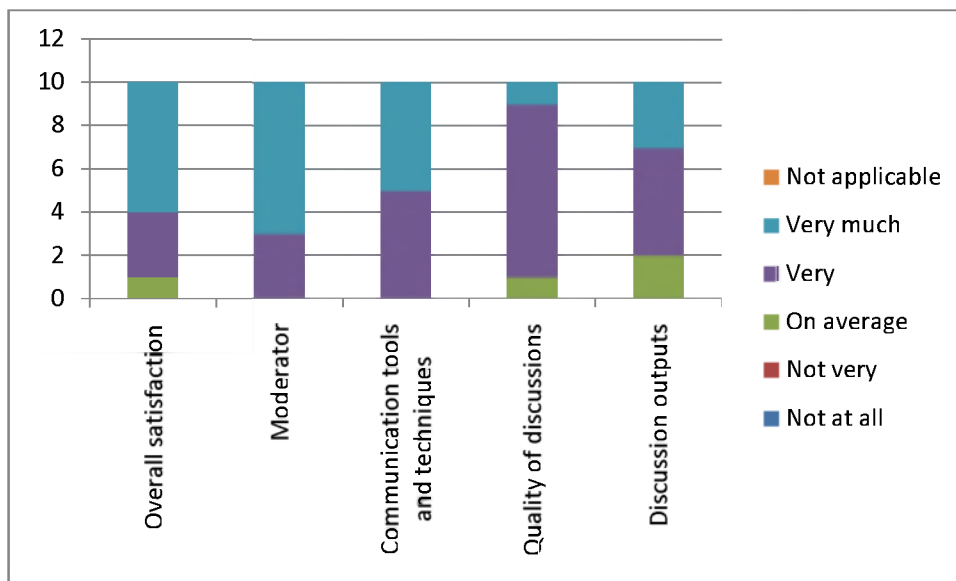


Figure 16: the level of satisfaction as regards the participatory elements of the workshop for the Citizens

Regarding the extent to which expectations of the participants were met by the workshop (Figure 17) the answers of the stakeholders and the citizens also rate positively. **The majority of stakeholders answer with “very”, whereas the citizens were divided into two equal groups between “very” and “very much”.**

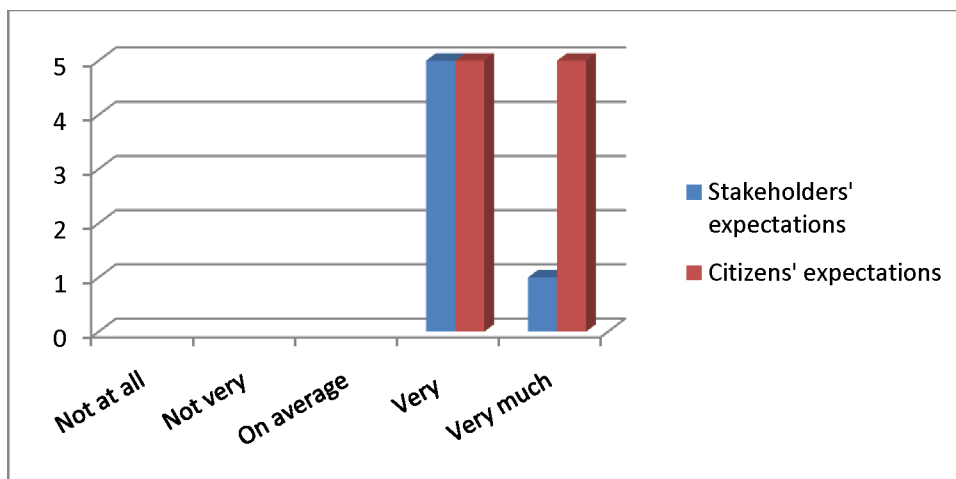


Figure 17: Citizens' (in red) and Stakeholders' (in blue) evaluation of the extent to which their expectations were met

In order to further investigate this more subjective inquiry, two open questions were asked: “Name one thing you liked especially about this Workshop and one thing you did not like so much”.

Although the stakeholders were more reserved in their answers than the citizens, they did not mention anything they did not like. However, they most enjoyed the moderation, the

discussions, and the interaction with a group of citizens who had the opportunity to share their own points of view.

The citizens however, provided much more detailed information in these open questions. Among the things they liked were: the glimpse into the various ways scientists, policy makers, and the public can and do cooperate; the open atmosphere and the chance to express their views; the variety of topics and different points of view presented; the search for consensus among participants; and the small and comfortable setting. Among those elements they did not like so much was: the broad and complex information; the lack of clarity of some (scientific or policy) presentations; and the long and intense daily schedules. A specific comment made in regard to the policy presentation explains the lower score in Figure 6: the participant mentioned that this presentation was very confusing and did not provide very useful information. It is important to note here that **the member of the Ministry who was scheduled to give the presentation was ill and that her replacement was not as familiar or comfortable with the topics presented**. She mentioned this to the group, but this fact did not aid the overall challenges to understand the presentation.

Although both stakeholders and citizens were given the opportunity to write some suggestions to the organisers regarding the next or a similar workshop, or “what they would have done differently in organising it”, only the citizens availed themselves of this opportunity. Among the things they wished for were: more time for discussions; more participatory collection of their opinions and statements; more time in general for the workshop to allow for more in-depth analysis of issues affecting the ecosystem; and a short meeting before the workshop with the moderator in order to clarify the goals.

#### *4.5.1.3 Focused topics*

The Citizens’ questionnaire included a separate question, not included in the Stakeholder Evaluation. It asked how satisfied the participants were with the work of formulating the Citizen Declaration (Figure 18). **Although half of the group was “very” satisfied and three participants were “very much” satisfied, it is also important to note here that two participants achieved only a middle level of satisfaction.** This can be explained by the fact that there was fairly little time left at the end of the long and intense two days for drafting the Declaration, and that part of the work had already been done by the Evaluator and the Gulf of Riga Team. In fact, in the Evaluation section on “Further Comments” one participant mentioned that the **statements were too broad and “too standard” in the end. Another comment repeated through the last couple of hours of the workshop was that the citizens were surprised by the statements shown, although they had been taken note of during their discussions by the Evaluator. However, this could partly be explained by the fact that participants had low ownership of the process because they were not directly involved in collecting the statements, and also by the fact that the language was edited for language and changed slightly by the Evaluator and the Gulf of Riga team to fit a “policy audience”.**

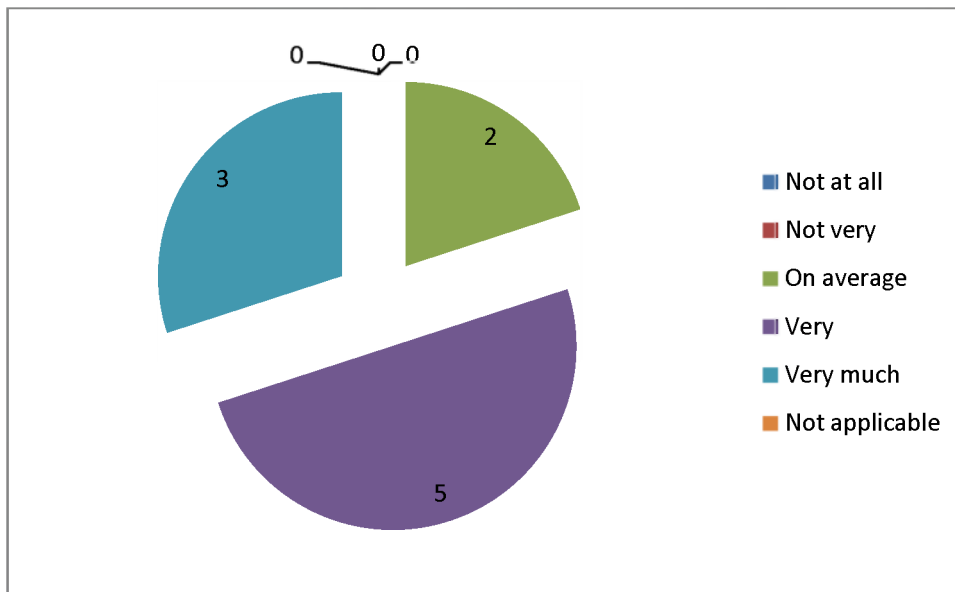


Figure 18: Citizens' level of satisfaction with preparing the Declaration

#### 4.5.2 Interface with citizens and stakeholders in the Local Conference

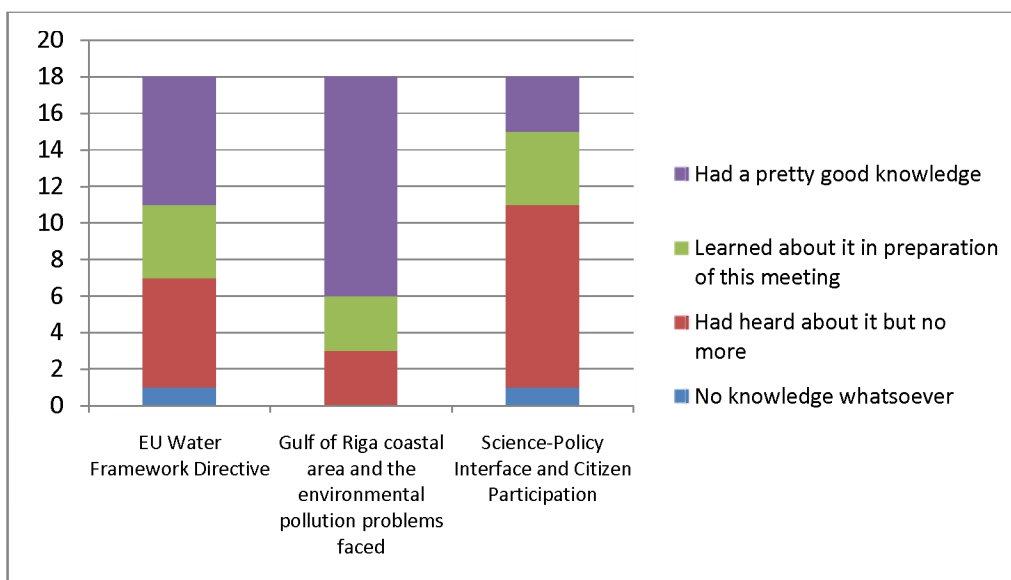


Figure 19: the level of knowledge on three topics declared by Local Conference participants

As regards the learning process (Figure 19) most participants learned only a little, and a smaller number learned a great deal. One participant did not learn anything at all. Complementing this question, some of the responses to the open question "If yes, what did you learn most about" included: appreciation of the clear presentations using visual elements; the future scenarios on

the Gulf of Riga; the various ideas of what constitutes a “good environmental status”; the value of the AWARE project; and the citizen recommendations.

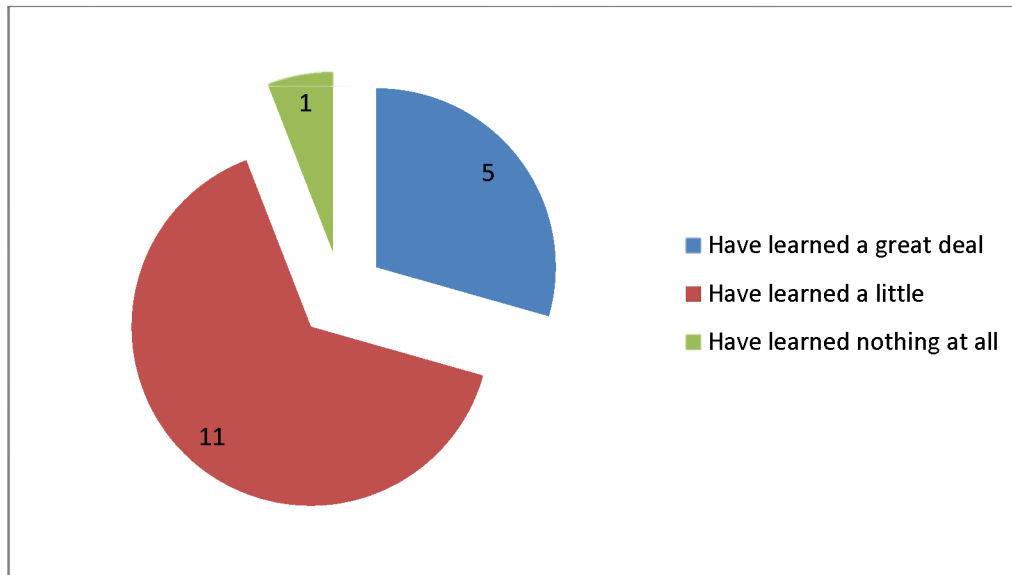


Figure 20: the amount learned by participants during the Conference

#### 4.5.3 Science-policy-society interface

The first focused question asked from the Conference participants was “What recommendations or expectations do you have regarding the European Conference?” Given the open nature of this question only few responses were given, including: to learn from the other case study recommendations and select solutions that may also work in the Gulf of Riga; to improve collaboration between citizens, policy makers and science; and to share the experience of other case studies. One fear was voiced regarding whether the recommendations /AWARE actions will really affect the ecosystem in the end. Another comment however, stated that this process can help and brings a positive attitude to problem solving in coastal water management.

The next question, regarding the practical contribution of discussions for participants’ daily work may not have been relevant to all participants. Figure 21 however, shows that **for 12 of the respondents the discussions either contributed somewhat (“on average”) or “very” to their daily work. This can be seen as a very positive outcome.**



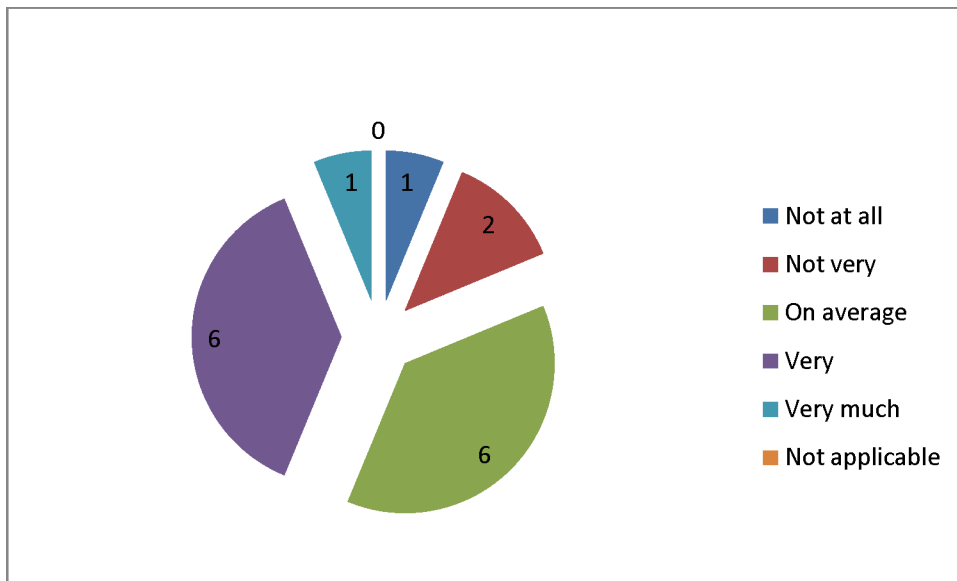


Figure 21: the level of practical contribution of discussions to daily work

Regarding the extent to which the Conference met the expectations of the participants, responses were generally high, with over 60 percent of participants having either “very” or “very much” met their expectations.

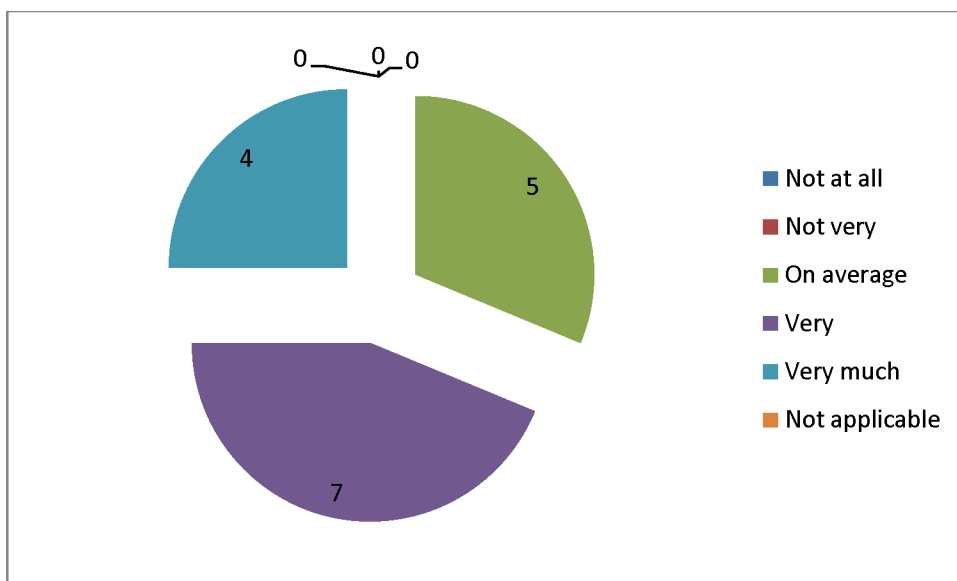


Figure 22: extent to which the Conference met participant expectations

Lastly, three open questions were asked. The first asked participants how satisfied they were with the debate on the citizens’ Declaration and the panel discussion. Although not all 18 respondents answered these open questions, all but one person were quite satisfied with this part of the discussion. Respondents felt that important questions were raised, different points of view were represented and expressed, and that the discussion included concrete

suggestions. One participant also pointed to the fact that the discussion showed a gap between generations, with younger generations wanting a “safe environment” and older generations, even some scientists, preferring to focus on “living standards” and economic growth.

The second open focused question regarded the level of participant satisfaction with the speeches of the local authorities. Here the answers were more reserved and showed the difficulty in hearing speeches that were too “political, formal, and vague” in nature and language. Several comments mentioned the difficulty in understanding the meaning behind confusing language in the presentations, especially of the Latvian Ministry of Environment. Some respondents however, also commended the policy representatives for being ready to answer many questions from the audience and for being prepared to explain complex concepts to a varied audience.

Finally, the participants had the opportunity to leave some further comments for the evaluators. Most respondents took the opportunity to comment positively on the well organised and interesting conference. Once again, the presentation from the Estonian Ministry of the Environment was praised for his clear, interesting, and easy to understand presentation and message. One participant also mentioned the difficulties of involving “simple citizens” in policy processes, and that more awareness raising is necessary in this context to learn how to take part in environmental protection.

## 5 Sacca di Goro

### 5.1 Short overview of Sacca di Goro area and case study

In this section the information collected derives from the documentation provided within the case study. It is provided by the *partners responsible for the Sacca di Goro case study* (hereinafter named *Sacca di Goro Team*) and it is evaluated in terms of:

- Completeness, i.e. whether the information provided is capable of describing all the issues at stake concerning the case study, as regards the scientific and the policy background;
- Coherence, i.e. whether the information is appropriate for the correct development of the process, and for feeding, in terms of knowledge, participants;

#### 5.1.1 Geographical scope

Sacca di Goro is the most geographically delimited case study within the AWARE project as it concerns mainly the Sacca di Goro Lagoon; it includes actors from the Emilia-Romagna Region and Province of Ferrara. In practice, the boundaries of the system are not so easy to determine: the Sacca di Goro is a relative close system from a physical point of view and most of the economy is driven in Goro and in the nearby municipalities. Though, the Sacca di Goro can be also considered as the final ecosystem encountered by Po river waters. This means that, virtually, even the whole Po river watershed could be considered within the geographical scope. The boundaries defined by the AWARE project approach, eventually, include the lagoon, the inland activities bound to agriculture and breeding and the Po river channels management systems. Such an approach differed from the previous EU projects which the Sacca di Goro has been involved in, since the area they considered was mainly the lagoon waters. In AWARE, through the involvement of high level policy makers, citizens understood and claimed in their declaration the importance of acting at a global level; they suggested, for example, to apply for a better cooperation between the Parco del Delta del Po dell'Emilia-Romagna and the local private operators in order to develop new facilities and improve the present touristic fruition infrastructures.

The boundaries of the system also affected the process for what the language is concerned. Unlike the North Sea case study and the Gulf of Riga case study, all the actors involved in the Sacca di Goro case study share the same native language. **This had a positive impact on the discussion and sharing activities (people feel comfortable with their own language) at a local level and a less positive impact at the European level; moreover, since the proficiency in English language is low in the Italian citizens panel, it will not be easy to reach a satisfying level of sharing with the other two case studies.** Of course such a potential problem will be a point to observe in the final European steps (Workshop and Conference).

### 5.1.2 Scientific background

The description of Sacca di Goro has been based on the scientific knowledge produced by several studies, many of these financed by EU (e.g. FP5 DITTY project). Moreover, given the great interests weighing on this site, contribution to scientific knowledge also derives directly from local public agencies (Province of Ferrara, Department of Coastal Waters). Information provided by the Case Study Report synthesizes the scientific knowledge that has been provided so far, depicting complete picture of the actual environmental, issues.

The main socioeconomic and research issues are summed up in the case study report as five:

6. Development of a sustainable clam farming activity.
7. Engineering works in the lagoon.
8. Natural conservation and touristic development.
9. Mitigation of global climate changes.
10. Social and economical conditions.

These issues make the Sacca di Goro a really particular environmental system. This peculiarity also explains why it has been object of several European , national and local research projects<sup>19</sup>.

**Thanks to the ecological, biogeochemical and socioeconomic investigations made so far, the Sacca di Goro Team could count on a satisfactory level of knowledge of the ecosystem.** The Sacca di Goro is identified as a fragile and highly impacted system. The stored scientific knowledge has been used in the EU DITTY project: a Decision Support System and an extensive geo database have been developed and they are still available on line. Moreover the Province of Ferrara is responsible for monitoring and collecting oceanographic data and elaborating geographic maps and other information tool for the Sacca di Goro.

The above mentioned Decision Support System tool runs through the use of both mathematical models and multicriteria analysis model. The mathematical biogeochemical models (e.g. COHERENS 3D model [1] or the simpler 0D model [2]) simulate the simplified lagoon behaviour and provide, as outputs, scenarios that, of course, are different according to initial conditions and to the set values of parameters. Multicriteria analysis models use scenarios for evaluating options [3]. Within the experience of DITTY project, it was proved that multicriteria models, applied to the lower layer of the mathematical models, can support decision makers in dealing with complex systems and in aiding to set priorities and to make the best decisions. In fact, scientific models do not deal directly with people's experience, while

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<sup>19</sup> CLEAN - Coastal Lagoon Eutrophication and Anaerobic Processes (1993-94), NICE - Nitrogen Cycling in Estuaries (1996-99), ROBUST: the ROLE of Buffering capacities in STabilising coastal lagoon ecosystems (1996-99), DITTY - Development of an information technology tool for the management of european southern lagoons under the influence of river-basin runoff (2003 – 2006).

multicriteria models consider experience as a fundament for structuring the problem; in AWARE, the decision to use multicriteria models was fully in harmony with the goal of enhancing linkages between citizens, policy makers and scientists; the “very” mathematical models have not been taken into account in the development of AWARE participatory process since the focus is not on building up new scientific knowledge (a grand amount of knowledge has been produced so far) but to share both scientific and empirical knowledge among stakeholders. Thus, it can be stated that in AWARE the scientific model used is represented by scientists themselves.

**For what described so far, the advantage of using multicriteria models, without a very scientific modelling layer in AWARE, consists in making possible to consider all the different kinds of knowledge owned by actors (scientists, citizens, stakeholders, policy makers) and in not limiting the participatory process with the constraints of the ecological models; the disadvantage is the consequent and predictable loss of capability in specifically analysing complex environmental behaviours.**

#### 5.1.3 Policy background

Few policy actions are described in the *Sacca di Goro Case Study Content and Process Design Report*. The most information has been collected and organized in the *Goro Input for Aware Policy Brief* document. A detailed description of the historical development of the policy background can be found in [4].

The first strong policy action was setup in the mid of 90s with the establishment of a sort of a management authority, the Sacca di Goro Management Consortium, composed by the Goro municipality and the Province of Ferrara. The establishment of the Consortium was the answer to the difficulties encountered in regulating the clam farming activities, mainly due to:

- the miscommunication between public institutions (Po river Magistrate, Province of Ferrara, Municipality of Goro, Consorzio di Bonifica, Harbour office and Ministries);
- the lack of on-site scientific knowledge in the field of clam farming ;
- the very high economic interests and the lack of a structured and expert management team.

In the following years, as a consequence of the tensions between the Ferrara Province and Goro Municipality, the Management Consortium was going to be paralyzed and finally drop away. In the same years (1992, 1993 and 1996, 1997), phenomena of anoxia affected the Sacca di Goro; they drew the attention of the national governmental levels: the environmental emergency state was announced and an extra - ordinary Commissioner was nominated. Rapid economic interventions succeeded in restoring the Sacca and since that moment the clam productivity kept on growing. In 2003 a new Environmental Management Committee was

established for the maintenance of an environmental and economic equilibrium. The Committee included:

- a decisional unit, made up of public institutions (Municipality of Goro, Province of Ferrara and Emilia-Romagna Region) and of three main Fishery Associations;
- a technical unit, the Sacca di Goro Management Bureau, under the control of the Province.

In the next three years, the Committee carried out interventions of ordinary maintenance, channels resizing and retrieval of hydraulic circulation. In the recent years, fishermen, through their Consortium<sup>20</sup>, used their own funds for financing interventions, mainly to dredge sediments that constantly accumulate in the lagoon. Besides this, a focus group on touristic navigation has been built by the Province of Ferrara with the aim of favouring the collaboration among different actors, public or private, to find out common guidelines for fostering touristic attractiveness.

**What eventually emerges is that lagoon waters management is a complex task: it has to involve not only fishermen and local stakeholders but also those belonging to the whole watershed and academic world. As the focus scale enlarges, the variety of stakeholders increases, including crop farmers, consortia for irrigation, consortium for land reclaim, regional parks, the interregional Po river agency, private associations and different levels and departments of public institutions.**

#### 5.1.4 Science-Policy interface

The Sacca di Goro and the Province of Ferrara display a long tradition in adaptive ecological management through the active sharing of clam farmers' knowledge. Though, historically, the input of other stakeholders and citizens has not equally pursued. Fishermen above all have been strictly working [4] with policy subjects since their interest on coastal water management is very bound to their economic interests.

Actually the Province of Ferrara has a central role in the research and maintenance activities of the Sacca di Goro; it collects oceanographic data through an extensive monitoring network, coordinates the dredging activities with the support of the fishermen consortia and elaborates thematic GIS maps and other informational tools for the management of the Sacca di Goro.

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<sup>20</sup> COPEGO, Consorzio Pescatori di Goro. More information can be found at [www.copego.it](http://www.copego.it)

### 5.1.5 Stakeholders

From the definition provided in [5], stakeholders are *all those with financial, knowledge or other resources in the area with a capacity and will to facilitate or block policy initiatives at either the design or implementation phase. Stakeholders also include users and citizens directly or indirectly affected by the water management measures.* Stakeholders hold interests as regards the following activities:

- Clam farming. At present the Sacca di Goro is one of the top European sites for clam farming and the corresponding economic revenue oscillates between 50 and 100 millions of Euros per year.
- Agriculture. Approximately 80% of the Sacca di Goro watershed (about 650 km<sup>2</sup>) is exploited for agriculture.
- Conservation. The eastern part of the Po di Volano watershed and the Sacca di Goro lagoon belong to the Regional Park of the Po River delta; the area between the Po di Goro and the Po di Volano embraces the Gran Bosco della Mesola, a Mediterranean wood; the Sacca di Goro itself, with minor aquatic ecosystems, is important for waterfowl protection and conservation.
- Tourism. Tourism activities are not developed in the lagoon even the system has a high values for its naturalistic aspects. Some tourism is developed along the southern coast outside the system but is not related to the lagoon being mainly addressed to beach activities. The naturalistic tourism and eco- fishery are at an early stage as most of the resident workers are involved in clam farming activities.

As regards the Sacca di Goro case study, stakeholders have been categorized into five groups, according to their areas of influence.

1. Clams fishermen, the most influent group, even more as it is organized into consortia (Consortio Pescatori di Goro, Legapesca, Federcoopesca...)
2. Farmers, whose farms and crops are situated inland, also organized into confederations or consortia (Unione Agricoltori di Ferrara, COPAGRI...)
3. Environmental Associations, mainly local points of national or international associations (WWF, Legambiente Ferrara, ...)
4. Touristic Agencies, as tourism is the lagoon and also in the inland can play an important role in terms of conflicting interests
5. Local Trade, industrial and SME associations

Besides these, obviously Policy Makers are considered, at different levels, till the national one. They are represented by the Po River Basin Authority, the Civil Protection and the Ministry of Environment. The main concerns of citizens or consumer organizations are about the decreasing water quality, particularly when it affects bathing and the use of waters for recreation. Good environmental quality is seen as a major indicator for making the

municipality of Goro a good place to live. Though, policy makers are concerned about increasing costs for water treatment and farmers are worried about the impacts on their income since they will have, perhaps, to pay the costs of pollution reductions.

Stakeholders' activities are interrelated and such an interrelation has often generated conflicting situations. Actually the main conflicts and troubles encountered within the science-policy interface are well describe in the *Goro Input for Aware Policy Brief* document and in the followings they are reported:

- Conflicts among interests related to opposite consideration of the system, namely place either to exploit as much as possible or to be conserved and managed for a balanced exploitation.
- Ecological and environmental research is not sufficiently integrated with economical and social sciences to give definitive answers. EU, national and regional research projects are directed to improve our knowledge of the system but with continuous reduction of resources. A better comprehension of the system would avoid unnecessary conflicts and help to define common objectives.
- Policy objectives are not clearly defined.
- Social aspects are often not considered or they are managed without considering the "sustainability" (the lagoon as a "welfare" tool).
- Market is subjected to wide fluctuations and can drive resource exploitations: both high and low prices can result in high exploitation levels.
- Need of high investments for maintaining or improve the actual production.

**The mapping of stakeholders and of their complex relations stressed, within the AWARE process, the importance of involving all of them into the local consultations. The information as regards interrelation among stakeholders has been fully provided within the process.**

## **5.2      Pre-consultation phase**

All the design activities that contributed to the development of the Sacca di Goro case study have been decided and tailored within meetings among partners. Meeting took place in Parma, on the 26<sup>th</sup> of March, on the 4<sup>th</sup> of June and on the 24<sup>th</sup> of September. Responsibilities and roles have always been shared and agreed among all.

Criteria used for the evaluation, in this chapter, are the following:

- Completeness: whether all the information collected during the definition of the case study has been taken into account for shaping the consultations activities;
- Coherence: whether the design choices is appropriate for fostering knowledge exchange and interrelations.



### 5.2.1 Citizens' recruitment

Recruitment run through the delivery of a letter of invitation and through the open filling of an application form. Recruitment methods were promoted by dissemination activities distributed on the territory and in significant places. Posters have been the mainly used publicity methods, provided in national language. Posters displayed a picture of a very deteriorated shore (a pre-collection of pictures occurred) and just few words about AWARE, including the slogan "Let's save the sea, your opinion counts!". Posters redirected people to the website. The website itself also provided all the info for understanding the meaning and objective of AWARE project and for the recruitment of citizens. Publicity also regarded local events, as "Liberamente", a national saloon held in Ferrara every year and attracting around 20.000 people.

Promotion consisted in:

- Electronic sending of an e-newsletter and a poster
- Attachment of poster and distribution of newsletters among fishermen cooperatives and other important places of aggregation

No "snow-ball" techniques were used to attract more applications, to avoid the homogenization of the sample.

The methodology used in performing the selection was made up of two steps:

1. Evaluation of the candidatures
2. Random selection of the AWARE citizens' panel members

A score (Low, Medium or High) has been assigned to each evaluation, based on the answers provided to the two open questions:

- Why you want to apply to participate to a Citizen's conference?
- What is your current perception of the quality of the coastal water environment you are mostly related with: good or bad, and why? Do you have any idea on how to improve it?

The answers to these questions allow to evaluate the level of (written) English, the degree of motivation and the perception and understanding each candidate shows of the problems at stake. This evaluation, for the Sacca di Goro case study, was undertaken independently by evaluators from ISIS side, one of the AWARE partners.

A summary score, equal to the most frequent score assigned to each candidate by the eight evaluators, has been computed and used in the random selection procedure to assign a different probability of being selected according to the high, medium or low (summary) score.

Totally, application received in the Sacca di Goro Case Study represent around the 15% of the total applications collected within the AWARE project (see Figure 23).

Individual interviews were performed after submission of an application form (in A, translated in Italian), in English.

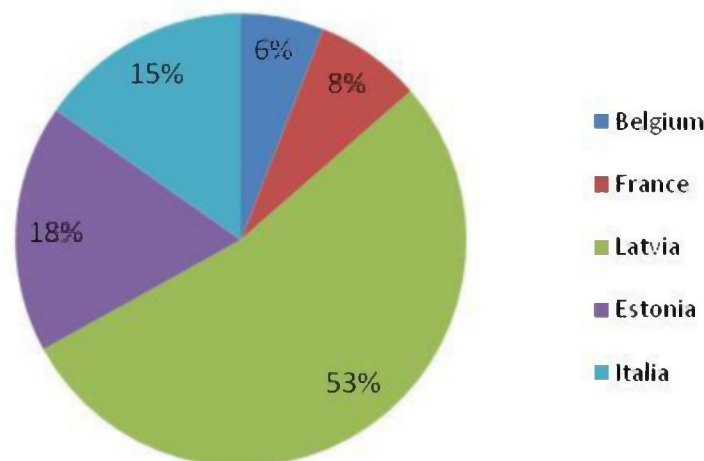


Figure 23: the percentage of applications received for country

For what the Sacca di Goro case study is concerned, eventually, a panel of 10 citizens has been selected. Problems related to small number of applications occurred. The deadline has been several times extended for enlarging applications pool. The total amount of candidatures was 19; of these only 12 spoke English at a sufficient level. The random selection occurred among the 12 English-speaking citizens.

**The selection of citizens was mainly influenced by the proficiency requested in English language. Most of the submitted applications did not correspond to the requested skill; the resulting sample, consequently, was not fully representative of Sacca di Goro societal structure. About half of the recruited persons hold a degree, while most of Goro citizens do not; only one fisherman was selected although most of the population is employed in fishing. At the same time, a selection privileging a more representative sample, would probably have compromised the European Workshop, in terms of understand AWARE project and exchanging knowledge with the other case studies recruited citizens. For this reason, a crucial role for overcoming the lack of representativeness belongs to the Local Workshop where stakeholders did represent part of the societal structure of Sacca di Goro, together with its conflicts and features.**

## 5.2.2 Design of the Local Workshop

The scientists of the Sacca di Goro Team collaborated since the beginning to the design of the process and directly intervened into the workshops, mainly by illustrating significant research outcomes and studies. Scientists' contributions relied on their expertise: scientists from UNIPA,

who have been working for a long time on Sacca di Goro environmental aspects (water quality, clam farming, watershed biodiversity), scientists from UNISI, who focused on the methods to compare the policy options, scientists from Poliedra, who concentrated on the participatory methodology and on the Governance themes.

The Local Workshop took place in Goro, in a building owned by the Province of Ferrara. It is actually a scientific station for the Province, equipped with recording systems, projectors and rooms for plenary sessions and workgroups. The two days long Local Workshop has been designed for the contemporary presence of stakeholders (only in the first day) and citizens. Two options for designing the workshop were discussed by the Sacca di Goro Team:

1. Concentrate the first day discussion on a comparison between the dominance of two local topics: the clam farming activities in the lagoon and the development of other activities for a more equilibrated and sustainable exploitation of the lagoon.
2. Originate the first day discussion from two central questions: *what actually works and what does not within Goro system* and *what should work better for reaching sustainability goals*.

Both the approaches considered an introductory frontal section, aiming at share scientific background and the use of the on-line survey outcomes for feeding the discussions. Eventually, the second option was selected since it was agreed that the first option could have emphasized the initial divergent positions and raise conflicts among participants.

It was also decided to internalize Ostrom's [6] socio-economic model as a scientific framework for leading the process of inner linking the stakeholders' knowledge and experiences. The use of Ostrom's model run in background and served as a referring point for framing the scientific contributions to the workshop. As another scientific background tool, the AHP [7] was decided to be used for linking the Local Workshop to the Local Conference. Moreover, part of the Local Workshop second day (only for citizens and scientists) would have been dedicated to draft the Declaration. The common idea was to finalize the Declaration by the Local Conference.

A list of the stakeholders to be invited was drafted in order to cover all the points of view concerning the issues at stake. Among the invited stakeholders, it was thought to be correct that the stakeholders invited to the Local Workshop had to answer the on-line survey, since the results of the on-line survey would have been used for further feeding the Workshop discussions. A personalized e-mail was sent for inviting the stakeholders.

The scientific presentations were decided to be setup in the local language (Italian).

The agenda of the meeting and documentation circulated before the Local Workshop, together with the scientific presentations. It was also a response to citizens' remarks within the European Workshop in Paris to be "ready" for properly reacting in future discussions.

No further meeting was planned in preparation of the Local Conference.

### 5.2.3 Design of the on-line survey

A questionnaire core set was drafted by ADELPHI for all the case studies and a work of tailoring has been produced for the adaptation to local case studies, preserving though comparability with the other case studies. Some questions for Sacca di Goro were specified (e.g. “Quality of water” has been divided in the ecosystems that are present in Goro: inflow water and lagoon). The question targeted at addressing the main causes of environmental degradation of coastal waters was changed in order to understand what level of govern is thought to be responsible for that. A final open question for gathering stakeholders’ vision of the future has been added. The paper version of the on-line survey is included in the D2.6 “Sacca di Goro Case Study Report”. The on-line survey final page indicated data (name of the responsible, telephone number, e-mail address) for any eventual other question. The on-line survey targeted about 40 stakeholders, covering all the areas at stake in Goro system.

**AWARE Sacca di Goro**

Page 1 of 2

1. Si prega di riempire i seguenti campi:

Nome e cognome:

Società:

Indirizzo:

Telefono:

E-mail:

2. 1) Per favore, indichi a quale dei seguenti gruppi appartiene:

☐ Associazioni di categoria (acquacoltura, agricoltura, turismo, altro)

☐ Società civile (associazioni non governative, associazioni ambientaliste)

☐ Scienziati, settore della ricerca

☐ Decisioni politici (agenzie per il governo del territorio, istituzioni per la salvaguardia ambientale, altri enti pubblici)

☐ Altro

3. Qual è la sua percezione delle condizioni ambientali dell'ecosistema della Sacca di Goro?

Per favore, esprima una valutazione usando una scala da 1 (pessimo) a 5 (ottimo)

	1	2	3	4	5	Non so
Qualità delle acque della Laguna (algaie, colore, ecc)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Qualità delle acque di afflusso relativamente al PO di Goro	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Qualità delle acque di afflusso relativamente al PO di Volano	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Stato del sistema dei canali	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Condizioni ambientali complessive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Completato

Figure 24: a screen shot of the on-line survey for the Sacca di Goro case study

#### 5.2.4 Design of the Citizens' Declaration

The second day of the Local Workshop was designed to be totally spent on the re-elaboration of the concepts acquired during the first day Workshop with the aim of drafting recommendations, under the form of a Declaration, for the Local Conference.

The Citizens' Declaration structure was designed around three main themes:

1. Introduction: who is writing, why.
2. "Goro system": citizens' vision and perspectives
3. Raise awareness among citizens: information, participation, awareness

Since the drafting work of the Declaration was supposed to occur at the end of the Local Workshop, its contents were expected to be, somehow, a measure of how the participatory activities concurred to knowledge exchange and raising awareness.

#### 5.2.5 Design of the Local Conference

The Local Conference was decided to be held in Canneviè, a pleasant locality nearby Po river mouth, at the suggestion of citizens (during the First European Workshop).

Subjects expected to attend the conference are of course citizens, stakeholders (mainly those who were asked to answer the on-line survey), scientists and policy makers. Some key Policy makers are also expected to be further interviewed separately after the Conference. The first design of the Local Conference included also an eventual half working day for citizens before the Conference for focusing on the agenda and on their interventions.

The Local Conference was thought to be also the occasion for displaying a good practice example of communication among stakeholders, citizens and scientists; such an approach has to be properly and in advance communicated to policy – makers for assuring an effective contribution within the Conference.

Brochures were designed and further distributed through massive e-mailing by the Province, together with the AWARE newsletters. Posters were planned to be affixed in Goro and Ferrara. Ad-hoc letters were prepared and sent to stakeholders and policy-makers.

#### 5.2.6 Participatory methods and techniques adopted

Both in the Local Workshop and in the Local Conference speakers were asked to communicate knowledge and scientific contents to the auditors by using frontal presentations (lasting fifteen- twenty minutes). They were asked to explain concepts and to provide participants with open questions in order to collect their attention and feedbacks. After the speeches of the

scientists, working sessions were designed; they were essentially based on the contents of the presentation in order to give to citizens and to stakeholders the opportunity to communicate their knowledge and their points of view.

Discussions were designed to take place especially during the Local Workshop. They were sometimes anticipated by a brief methodological introduction by the moderator in order to contextualize the topic within the AWARE process. The discussions were structured by alternating different activities:

- presentations by scientists targeted to audience;
- sessions of plenary debates, as a sort of brainstorming with the subjects involved in the process (citizens, scientists and stakeholders);
- small groups working sessions, followed by the presentations of the results, by one citizen for each group. ,

Handouts, post-its and posters have been used and at the end of each discussion; an interactive poster was usually created to collect all the feedbacks of the working groups.

Carlo Sessa, from partner ISIS, acted as moderator for the local workshop. He facilitated the presentation of the scientists by keeping the schedule and by asking some specifications to the speakers when the contents were too technical for the audience. His committed involvement into the case study resulted as a resource within the participatory exercises. Carlo facilitated also the moment of brainstorming and the plenary discussions: he tried to stop people who talked too much and to give to everybody the opportunity to talk. He did not facilitate the working groups but he decided to let citizens and stakeholders work on specific requests and organize the discussions by themselves.

ICT tools have not been directly used within the participatory sessions but they have been used for analyses. A web based open software for drawing mental maps has been used with the purpose of formalizing:

- the stakeholders network;
- the relations between actions and impacts (e.g. to increase the protected surface of the lagoon (action) and an increased resilience of the ecosystem (effect);
- the relations among policy makers and their institutional duties/tasks;

The Analytic Hierarchy Process [7] methodology has been introduced in the local Workshop and it was fed with a web – questionnaire. It aimed at assessing priorities between the suggested actions for improving the coastal management and the Sacca di Goro ecosystem in its wide sense. Priorities have been assigned considering all the points of view of stakeholders thus setting up, for each of them, their own vector of preferences.

### 5.3 Consultation phase

In this chapter, the evaluation focuses on describing how consultations took place.

#### 5.3.1 Participation at the Local Workshop

Fishing, tourism, research, environmental associations and policy makers were the categories represented by stakeholders who participated to the Local Workshop. The most preeminent absence regarded farmers and, secondly, commerce and trade associations. Fishermen, who do have the heaviest interests in Goro system, had a small (just one) participation. An additional meeting for the citizens was arranged in order to finish the Declaration.

#### 5.3.2 Participation at the on-line survey

After the extension of the deadline and reminders, 15 stakeholders, around the 30% of the targeted stakeholders (41), responded to the on-line survey. Not all the areas at stake have been represented in the answers collected: no farmers cooperatives/associations, no environmental associations. The area mostly represented within the answers pool has been commerce and trade. Figure 25 depicts the distribution of the answers received.

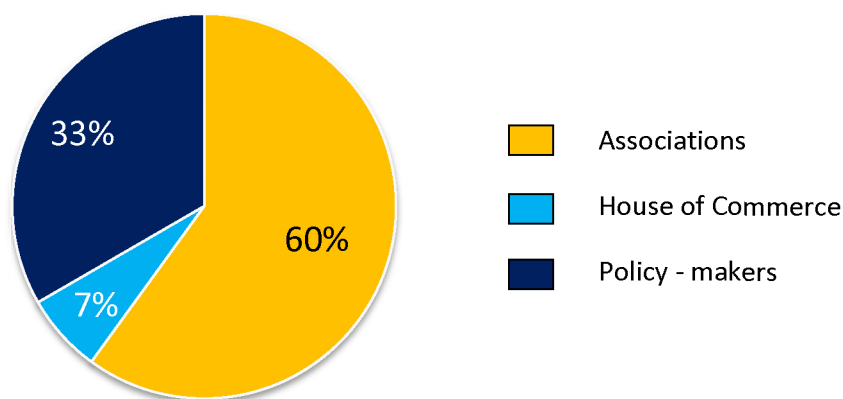


Figure 25: distribution of the stakeholders who answered the on-line survey

Part of the analysis of the answers of the survey have been presented in the Local Workshop and Conference.

### 5.3.3 Participation at the Local Conference

The Local Conference, whose name was “Citizens, experts and politicians for a better coastal waters management”, aimed at gathering citizens, local stakeholders and policy makers for discussing the outcomes coming out the AWARE process in matter of the general situation of Sacca di Goro, the future perspectives of participation and collaboration for an improved management strategies of coastal waters.

About 40 stakeholders attended the Conference and all the stakeholders categories were represented. Fishermen and farmers attended the Local Conference but, as planned, little time was spent with discussions about the results. The consultation within the Conference took place essentially during the afternoon; discussions involved the ten citizens, the present stakeholders, scientists and policy makers. The moderators continuously reminded participants about the scope of AWARE and about the sense of the Local Conference within the whole frame of consultations, with the aim of getting together “as a team” to end of the process. His frequent interventions contributed on creating a nice mood of commitment and collaboration. As citizens, stakeholders and scientists attended all the Conference, the major part of the Policy Makers stayed for a shorter time, especially in the afternoon. When the main discussion started, in the afternoon, about twenty persons, in addition to partners and citizens, were present at the moment.

Among the interventions, one above all is notable to remark: one of the ten citizens (and also a stakeholder, since is the president of a fishermen association with around eight hundreds associates) openly wonders about the meaning of removing pollution. He states that it is not possible and even recommended removing pollution in the Sacca di Goro. Told in a very natural style, the intervention was about today-citizens’ responsibilities, about the existence of people that, although convinced that changing attitudes is complex, difficult and sometimes frustrating, do believe that “yes, it is possible!”. The conference touched the apex in terms of commitment and emotions. This speech did help to enhance and feed collaborative atmosphere since it affected ideals and personal commitment. No replies on this interventions from policy – makers side. They intervened for the last and, missing out the contents of their interventions, they tried very little to connect the speeches with the outcomes produced since that moment from previous discussions.



## **5.4 Post-consultation phase**

This chapter describes the phases that followed each participatory moment, analysing how outcomes have been managed and how the Sacca di Goro Team supported the process of use and exchange of knowledge in preparation of the successive participatory events.

### **5.4.1 From the on-line survey to the Local Workshop**

The on-line survey results were expected to feed the interactions towards both the scientific team of the local case study, citizens and stakeholders. On the scientists' side, the results have been useful for assessing what is the actual perception of the ecosystem status by stakeholders. In this way, expert knowledge has been compared to the local and tacit knowledge proper of stakeholders and these exchanges helped scientists to tailor their contribution (direct presentations and informal exchanges within participatory activities) into the case study. On the citizens' side, the on-line survey outcomes contributed to citizens' work of evaluating the general level of local awareness: options of interventions have been discussed and assessed together with the stakeholders' analysis of the interrelations among actors and responsibilities towards environmental degradations. Also stakeholders' visions of the future were of course useful to perceive the general feelings of locals about future developments and actions. On the policy makers' side, the on-line survey is supposed to be one of the basis (together with the citizens' Declaration) for assessing the effectiveness of AWARE approach as regards coastal waters policy management. These three contributions of the survey together fed and affected the proceedings of the Local Conference.

### **5.4.2 From the Local Workshop to the Local Conference**

The major post-consultation outcome has been, of course, the Citizens' Declaration. It indeed included all the knowledge, in its widest sense, gathered within the process by the citizens. In the intermediate period between the Local Workshop and the Local Conference scientists were asked to eventually assist citizens in the drafting work of the Declaration; moreover, the AHP experts (University of Siena) asked citizens, stakeholders and policy makers to provide inputs for the AHP methodology. In this way, citizens and stakeholders' perceptions and positions regarding the Sacca di Goro system were analysed. In the same period, policy-makers were contacted for assuring their aware presence at the Conference.

## **5.5 Evaluation of Consultations**

The evaluation of consultations is the result of the analysis of three main elements:

1. the methodologies adopted: moderator, methodologies and materials;
2. the Citizens' and Stakeholders evaluation of the participatory moments, provided by evaluation questionnaires;
3. the evaluation team's observation and following assessment.

The evaluation tries to describe how the choices made during the design and preparation phase affected (foster or hindered) the development of the process, considering as sources the outcomes of the participatory moments (discussions, results), the evaluation of participants (questionnaires) and the role of partners. The final target is to understand whether the participatory efforts resulted effective or not, according to the AWARE project scope. In this sense, the analysis provided in 4.5.1, 4.5.2 and 4.5.3 considers the following aspects:

- **the level of knowledge** regarding central topics such as EU legislation, the coastal environmental issues and the actual interface between science and policy;
- **the level of satisfaction** regarding the designs and the contents provided within the single presentation sessions, in terms of capability of speakers to communicate and present concepts and in terms of the development of the relative discussions;
- **focused topics** related to the peculiarity of Workshop and Conference, such as the drafting work on the Citizens' Declaration (Local Workshop) or the Public Authorities interventions (Local Conference)

#### 5.5.1 Interface with citizens and stakeholders at the Local Workshop

Two questionnaires were distributed at the beginning and at the end of the Local Workshop, in two different version, one for citizens and one for stakeholders. The two versions were basically very similar; two questions more were added into the citizens version, asking them about their expectations towards the following steps of the process (the Local Conference) and the general satisfaction regarding the drafting work on their Declaration. Totally, nine citizens and eight stakeholders questionnaires were collected.

##### 5.5.1.1 Level of Knowledge

*How would you assess your level of knowledge on the following subjects PRIOR to the Local Workshop?*

The subjects were: the EU Water Framework Directive, the Sacca di Goro coastal area and the environmental pollution problems faced, the Science-Policy Interface and Citizen Participation.

*Please assess what you have learned and If yes, what issues did you learn most about?*

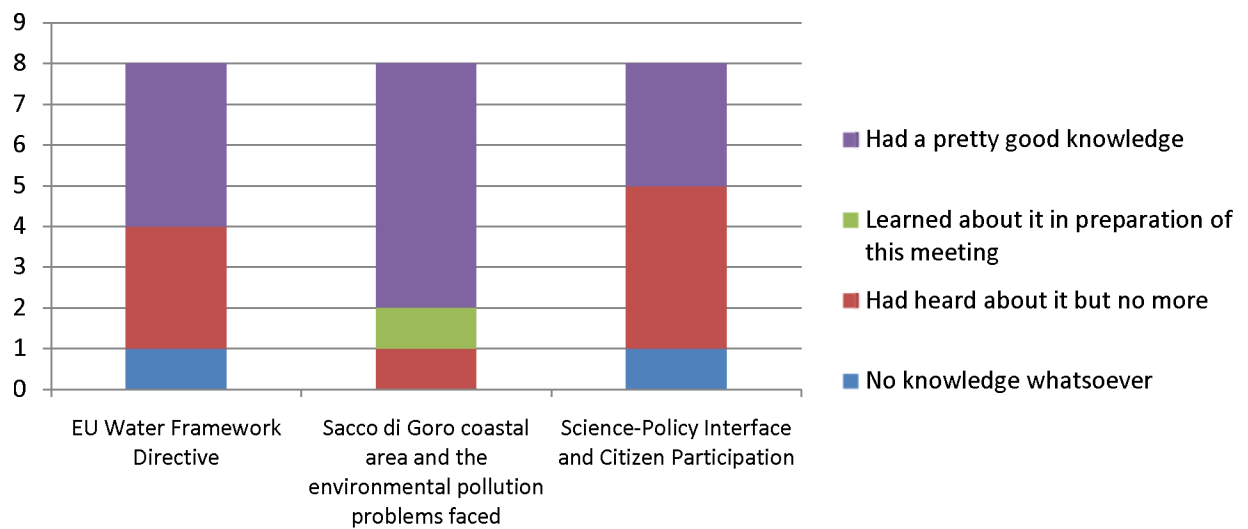


Figure 26: the answers of stakeholders as regards three main subjects

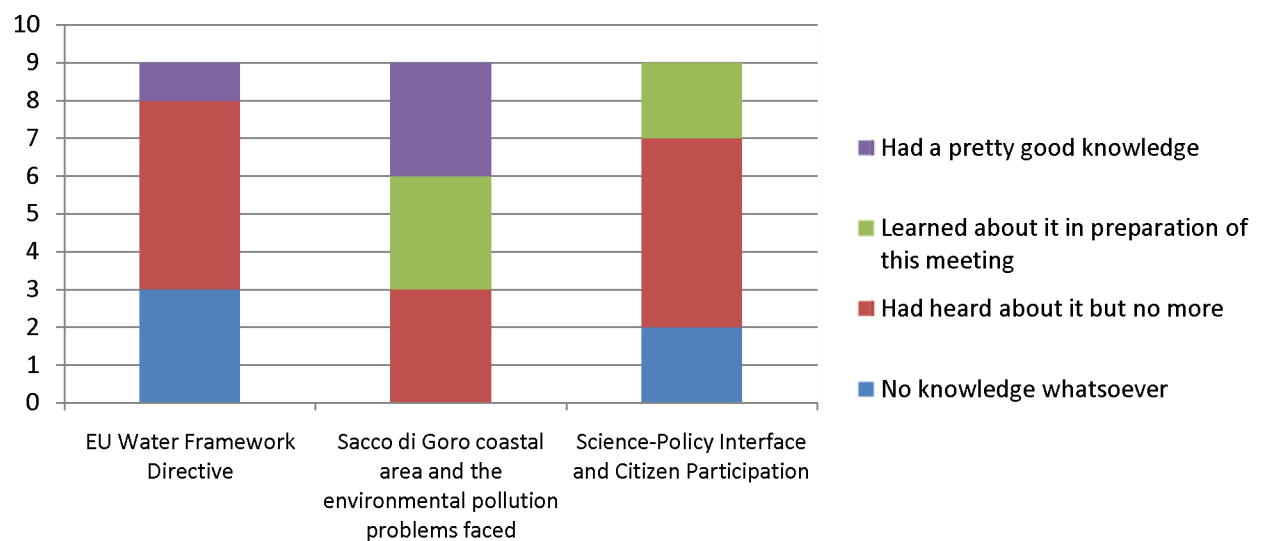


Figure 27: the answers of citizens as regards three main subjects

Different perspectives are displayed in Figure 25 and Figure 26. **Stakeholders generally state to have a pretty good knowledge, especially for the Sacca di Goro coastal environmental problems.** Even the question related to the science – policy interface, perhaps the most difficult to evaluate, does has few no-knowledge answers. **Citizens, instead, seem not own the same level of knowledge,** generally, even though they attended the European Workshop where much information about scientific background and EU legal framework was provided. **There are more “learned about it in preparation” answers from the citizens’ side:** it could be interpreted as an effort in reading and understanding all the documentation made available to them.



Figure 28: stakeholders (left) and citizens (right) evaluate their level of learning

The pies in Figure 28 display how much stakeholders (on the left) and citizens (on the right) state to have learned during the workshop. The “learning moment” lasted only one day for stakeholders since they only attended the first day of the workshop, as planned. The “no answers” answer was not among the possible answers: some stakeholders left blank the question. Both stakeholders and citizens state to have learned something but in a different measure: citizens seem to evaluate the workshop as a really learning moment as nearly the 80% stated to have learned a big deal. Stakeholders’ answers are a little colder but generally agree with citizens. This picture can be further understood with the third question, regarding the contents they state to have learned. There is not a preeminent topic which learning process concentrates on: citizens (seven out of nine) declare to have learned about the hierarchical analysis methodology, the management of the coastal ecosystem and its economic/ecological aspects, the system of the relationships among the stakeholders, the decisions makers, the scientists and the citizens. Stakeholders state to have learned about the clams production process, the participatory methodology concerning the environmental problems, the stakeholders involvement in the past and the present cooperation issues, the communication processes.

#### 5.5.1.2 Level of satisfaction

The second part of the questionnaire was focused on the level of satisfaction, mainly referred to the contents explained through the single session and the following discussions.

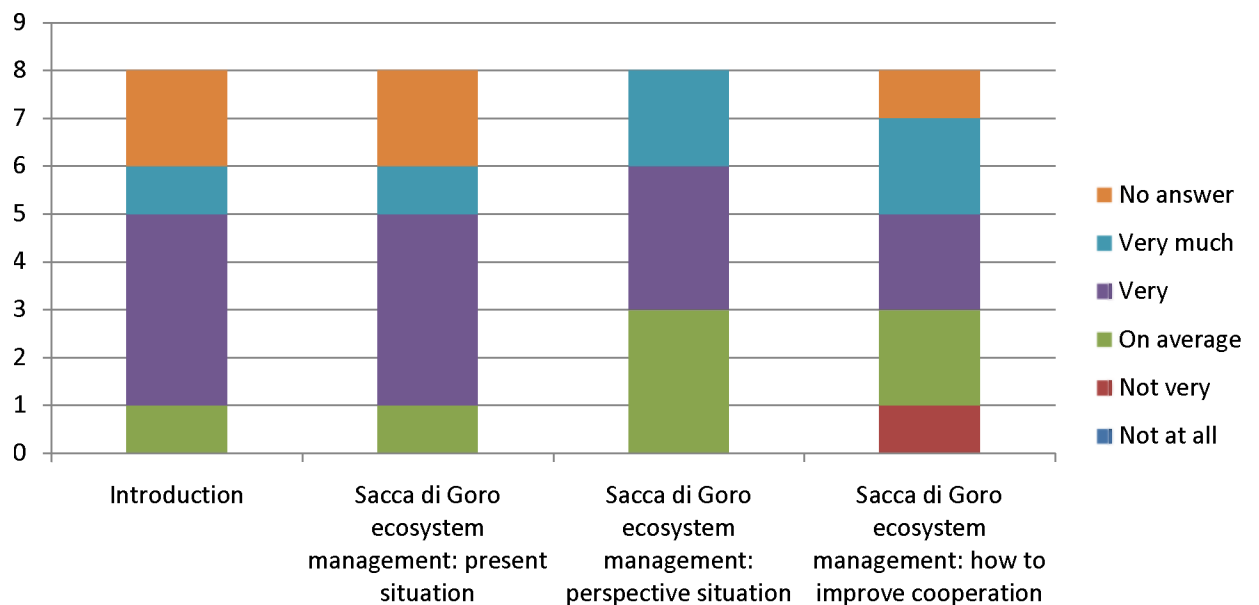


Figure 29: the level of satisfaction for stakeholders of the Workshop single sessions

The graph in Figure 29 displays the level of satisfaction attributed to the single session presentations by stakeholders. Only four columns are displayed since stakeholders attended only the first day of the Workshop. The graph in Figure 30 displays the citizens' answers to the same questions; the last two columns are more related to the work of the second day. Making a comparison between the two graphs it is possible to elicit that the "no answers" answers appear only in stakeholders' evaluation. The lowest level of satisfaction appears for both the groups in the "cooperation" session and in the "perspective situation" session but only for citizens. Generally the evaluations are quite similar.

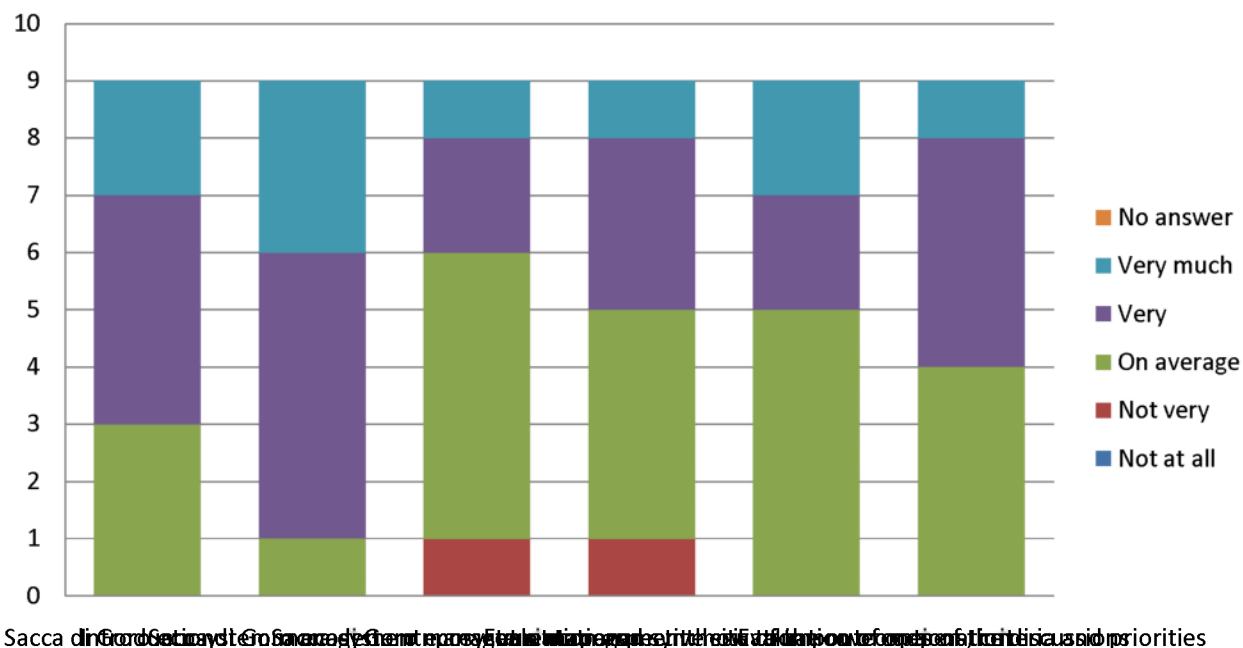


Figure 30: the level of satisfaction of single sessions for Citizens

Citizens evaluations also concentrated onto the second day activities; the evaluation of the outcomes of the first day activities (“synthesis of the outcomes of the discussions”) and of the workgroup on “options, criteria and priorities” are positive.

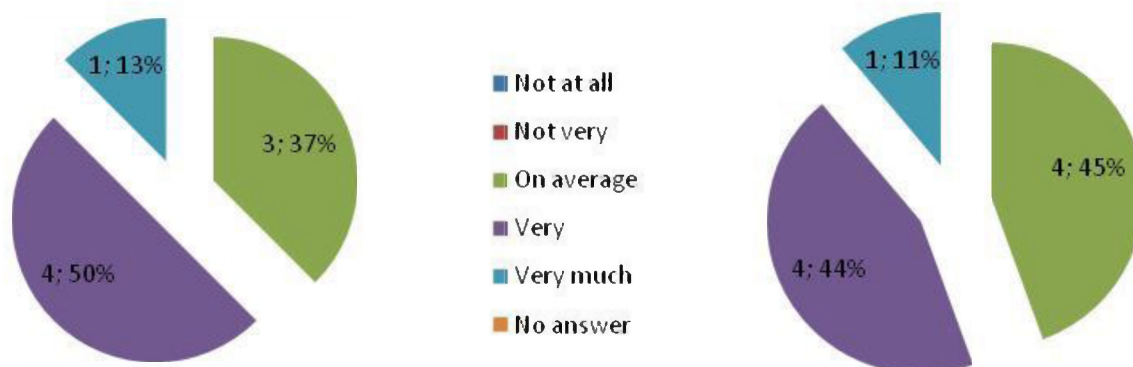


Figure 31: the overall level of satisfaction as regards the single sessions for the Stakeholders (left) and for Citizens (right)

The similarity between stakeholders and citizens’ evaluations can be also read as regards the last question about the single session presentations and discussions, the overall evaluation. The pies in Figure 31 show quite the same percentage; generally the judgement is positive, in both cases more than the 50% states to be very satisfied.

The questionnaire concerned the level of satisfaction about the elements that featured the discussions following the single session presentations. Five elements are object of the evaluation: the moderator, tools and techniques for communicating knowledge, quality of discussions, outcomes of discussions and overall evaluation.

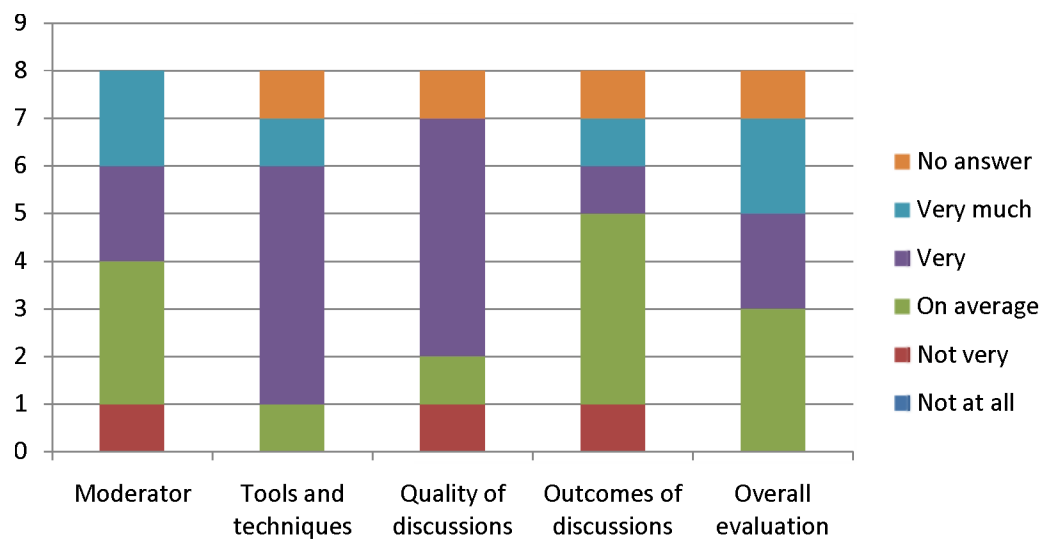


Figure 32: the level of satisfaction of Stakeholders regarding the discussions that followed the presentations

For what stakeholders are concerned (Figure 32), the most appreciated element of the discussion is the techniques and tools used for facilitating exchange of opinions. **There seem to be some remarks as regards the outcomes of the discussions** and the moderator.

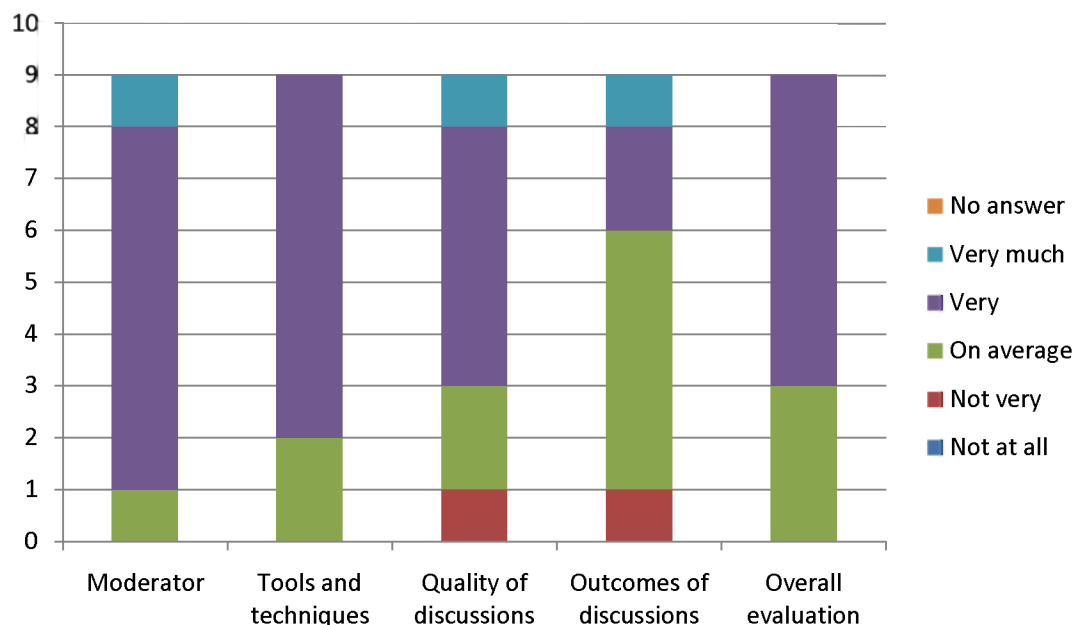


Figure 33 the level of satisfaction of Citizens regarding the discussions that followed the presentations

Citizens (Figure 33) very much appreciated the moderator; **also here some remarks regard the quality and the outcomes of the discussions.** Stakeholders' overall evaluation is higher than citizens' one (some people stated they were very much satisfied), in general overall evaluation is positive for both.

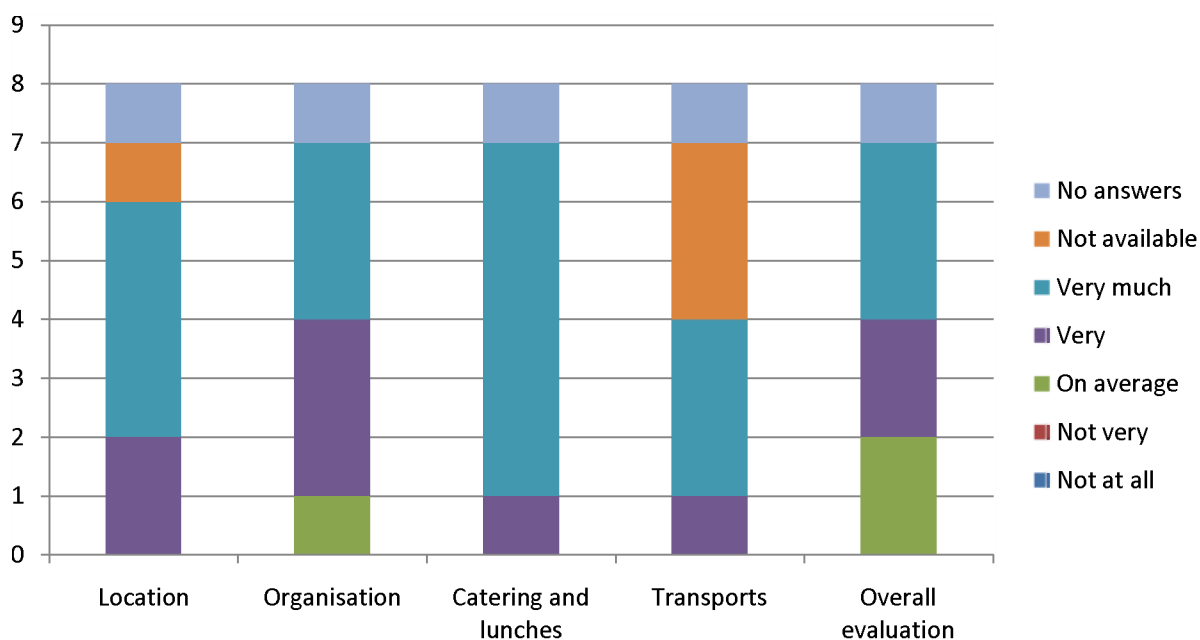


Figure 34: the Stakeholders' evaluation of logistics



For what logistics is concerned, generally (Figure 35 and Figure 36) the evaluation is positive; catering and lunches and location have been very much appreciated by both. Some did not evaluate the logistic of transports.

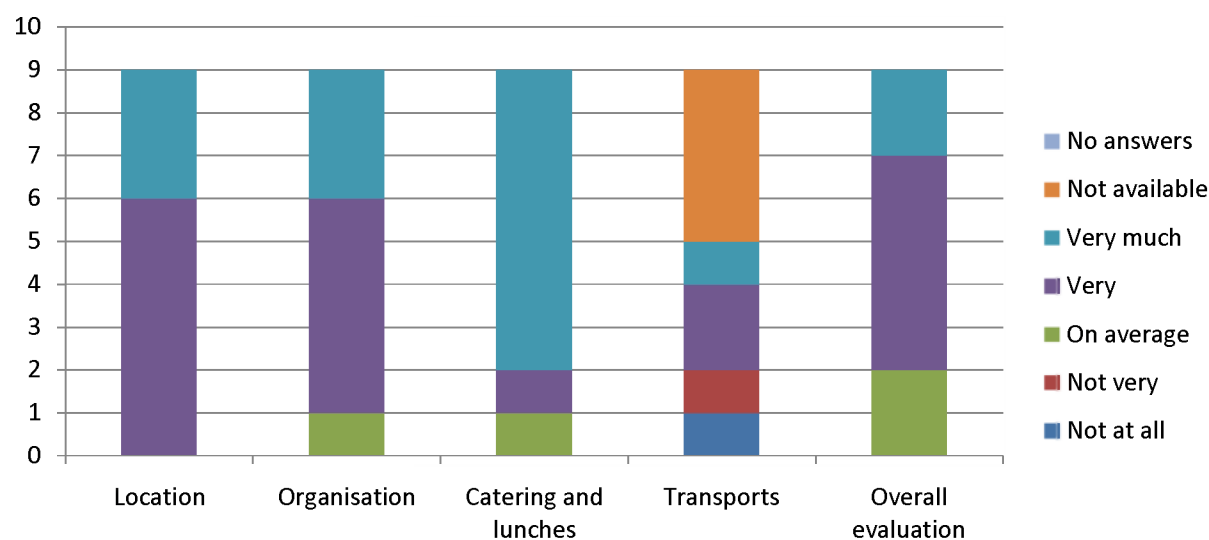


Figure 35: the Citizens’ evaluation of logistics

Logistics seems not to affect the overall evaluation of the workshop for both sides. Looking at the “expectation” question (“Did the Workshop meet your expectations?”,Figure 36), stakeholders seem to have more appreciated the Workshop than the citizens; two of the citizens’ questionnaires reveal a not complete satisfaction as regards their expectations.

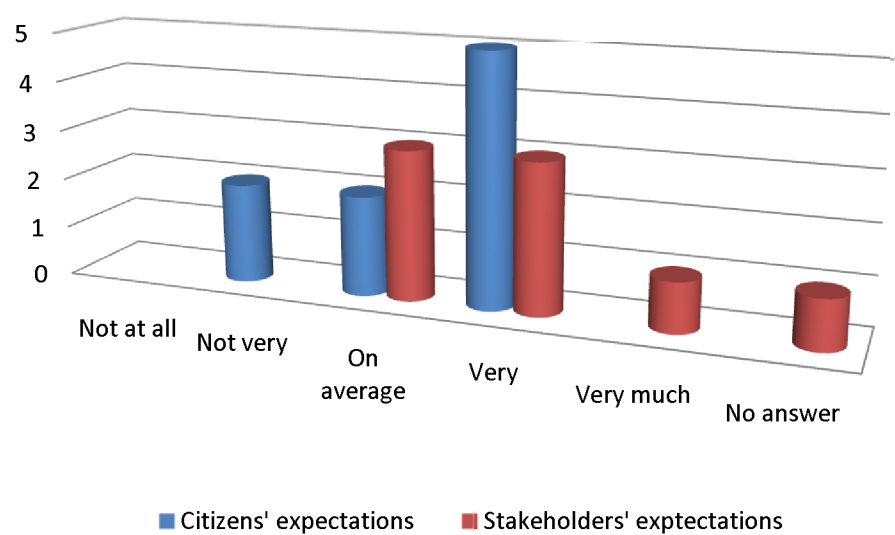


Figure 36: Citizens (in blue) and Stakeholders (in red) evaluation of the level of satisfaction, considering their own expectations

In order to further investigate this area of dissatisfaction, two open questions more were provided: “Name one thing you liked especially about this Workshop and one thing you did not like so much”.

The stakeholders declared to appreciate: the informal working atmosphere, the participatory methods, the working methods and the approach to the complexity of the issues, the participation of the citizens, the exchange of knowledge among the different subjects, the cooperation and communication with the scientists, the roundtables and the working groups. They did not appreciate the lack of facilitation of the working groups (it was often difficult for the members of the group to understand the tasks and the deadlines), **the almost total absence of significant non-citizens and Goro operators actually involved in the management of the system or engaged in political roles.**

The citizens declare to appreciate: the moment of the discussions; the explanation of the AHP methodology; the quality of the relationships among the organizations; the commitment of scientists and of themselves; the participatory methodology adopted during the workshop; the integration between the knowledge of the citizens and the scientists. They did not appreciate the scarcity of time to interact and to work in groups, **the absence of the major part of the stakeholders**, the speeches of the stakeholders of the first day, the lack of concrete ideas, the fact that the agenda was not respected (they had to plan another meeting in order to draft the Declaration). One of the citizens did not appreciate the discouraged feelings of the other citizens. A common agreement on what citizens and stakeholders did not appreciate is on the absence of all actors thought as important within the AWARE process and in Goro water and ecosystem management. At the same time, a mutual appreciation was expressed about the attitude of those stakeholders who attended the Workshop, about citizens and about the role of scientist. **An important remark regards the unattended scheduling of a post – workshop meeting in order to proceed and finalize the drafting of the Declaration.**

If stakeholders had been the promoters of the workshop they would have facilitated the working groups, they would have done a careful selection of the subjects of Goro in order to highlight the local problems and to get structural and strategic suggestions; they would have given to the stakeholders time to make a presentation. If citizens had been the promoter of the workshop (the questions was “What would you have done differently if you had been involved in the Workshop organization?”) they would have given more time to the discussions, they would have organized the workshop in order to work only during the given days and in the evening time (because of their work), they would have involved more stakeholders and would had left more space to them.

### 5.5.1.3 Focused topics

The Citizens' questionnaire included two questions more than the Stakeholders' one. The two questions were targeted at their concerns about the following step of AWARE process, i.e. the Local Conference and about the drafting of their Declaration.

With regard to the Local Conference, Citizens recommended:

- “not to waste their time”;
- discuss/implement the actions listed in the declaration;
- attendance by policy makers to the conference;
- declaration to be an effective instrument and not just words, capable to raise attention on the issues;
- their job as a starting point for an inversion of tendency

**It has to highlighted that the fear of losing time can be both interpreted as an expectation of an effective use of time and as the fear for being involved in a process that may produce no results. This second statement is also supported by the other citizens' recommendations (implement actions, inversion of tendency, Declaration as an effective instrument...).**

With regard to the drafting of the Declaration (Figure 37), most of the citizens declare to be very satisfied and the remaining ones are on average satisfied. One of them does not answer.

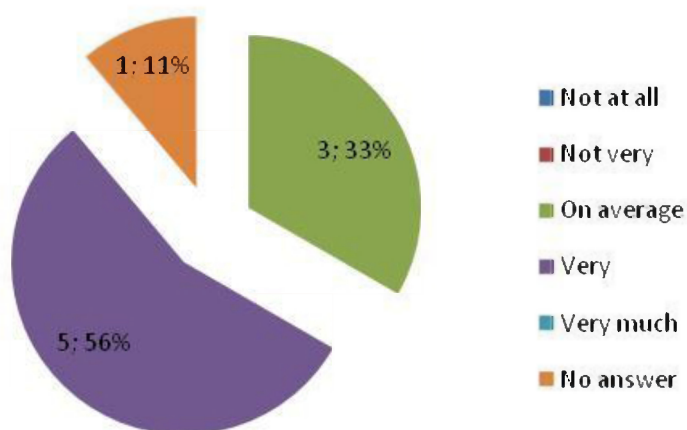


Figure 37: Citizens' level of appreciation of the drafting of the Declaration

#### 5.5.1.4 Conclusions

A general level of knowledge has been calculated summing the answers attributed to each subject (EU Water Framework Directive, Sacca di Goro environmental problems and Science - Policy interface) by stakeholders and citizens. It is displayed in Figure 38. The general level of knowledge declared by stakeholders is by far higher than the one declared by citizens. On average, stakeholders seem to be more aware primarily of the problems related to Sacca di Goro ecosystem management and secondly of the policy framework. They did not spend time on preparing themselves to the Workshop, unlike citizens. Citizens, although they were well fed with scientific and policy background at the European Workshop, mostly declare to “have just heard about” topics. The percentage of “No knowledge” is greater. The percentage of “Learned in preparation” is also greater and it can actually represent a sort of measure of their level of commitment in the AWARE process.

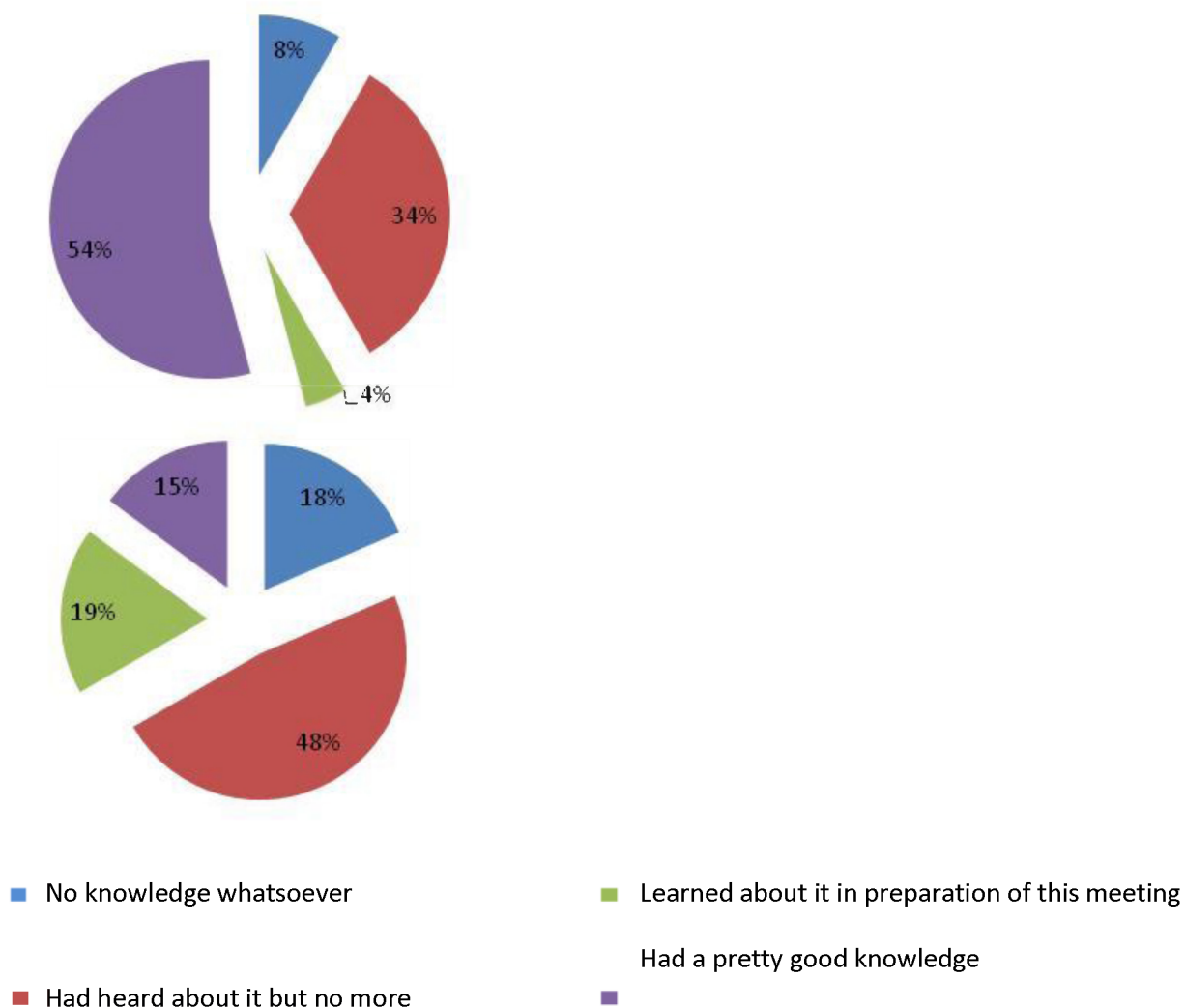


Figure 38: the general level of knowledge for Stakeholders (left) and Citizens (right)

It is expected, with reference to Figure 38, that citizens will attend the Local Conference with an higher level of knowledge; this level of knowledge is also expected to permeate their Declaration. **The major remarks are about the partial absence of stakeholders; an important citizens' expectation regards their statement and the actions it will include: *what kind of impact will it provide in concrete? What will the level of cooperation and attention be from the Policy-makers side?***

### 5.5.2 Interface with citizens and stakeholders in the Local Conference

The Conference was attended by around fifty participants; evaluation questionnaires were provided inside the official folder and collected at the end of the Conference. The Conference began at 10.00 in the morning and ended around the 5.00 in the afternoon. In figure 14 it is displayed the composition of the questionnaires collected; of those who answered, more than half attended also the Workshop.

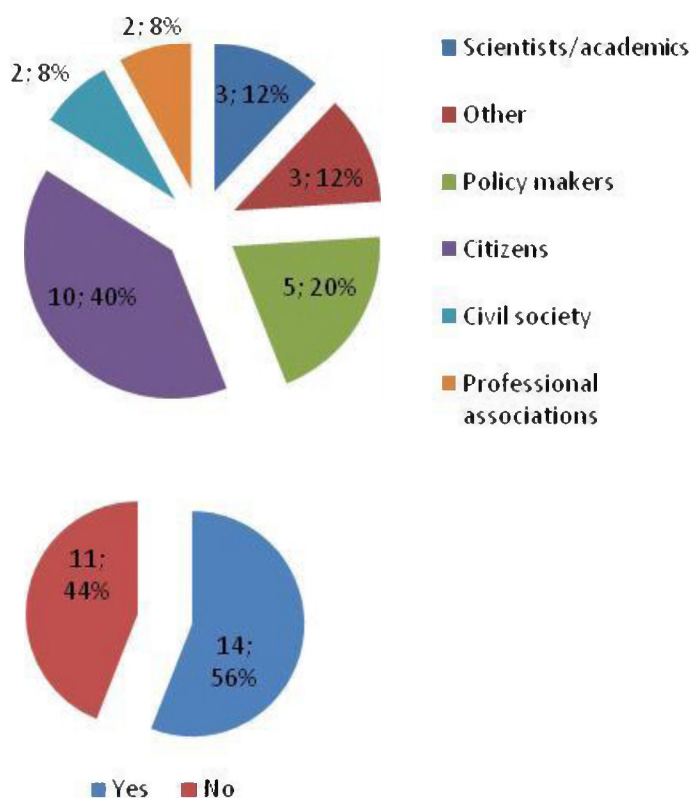


Figure 39: the composition of people attending the Conference and the percentage (graph on the right) of those who attended the Workshop, too.

The auspicated presence, in the design phase of the Conference (see 4.2.5), of key policy makers, seemns to be confirmed by the composition of the attendants (Figure 39): 20% of questionnaires have been compiled by policy makers. It also true that the category policy

makers includes those who are not directly in charge of taking decisions but who are simple technicians or collaborators of public administrators. The “other” item includes an environmental consultant and two students.

The evaluation questionnaires of the Local Conference share the same structure used for the Workshop; questions concentrate on the level of knowledge, level of satisfaction and on focused topics. This allows to draw a sort of *knowledge pattern* for citizens, assessing how their knowledge has been increasing throughout the process.

### 5.5.2.1 Level of knowledge

Generally participants declare to be informed about the three topics (EU Water Framework Directive, Sacca di Goro coastal area and environmental problems, Science – Policy Interface and Citizens Participation). On particular (Figure 40), they state to have a pretty good knowledge about the local problems, while they have a minor knowledge of the Water Framework Directive or of the Science Policy Interface. There are just few “no answers”.

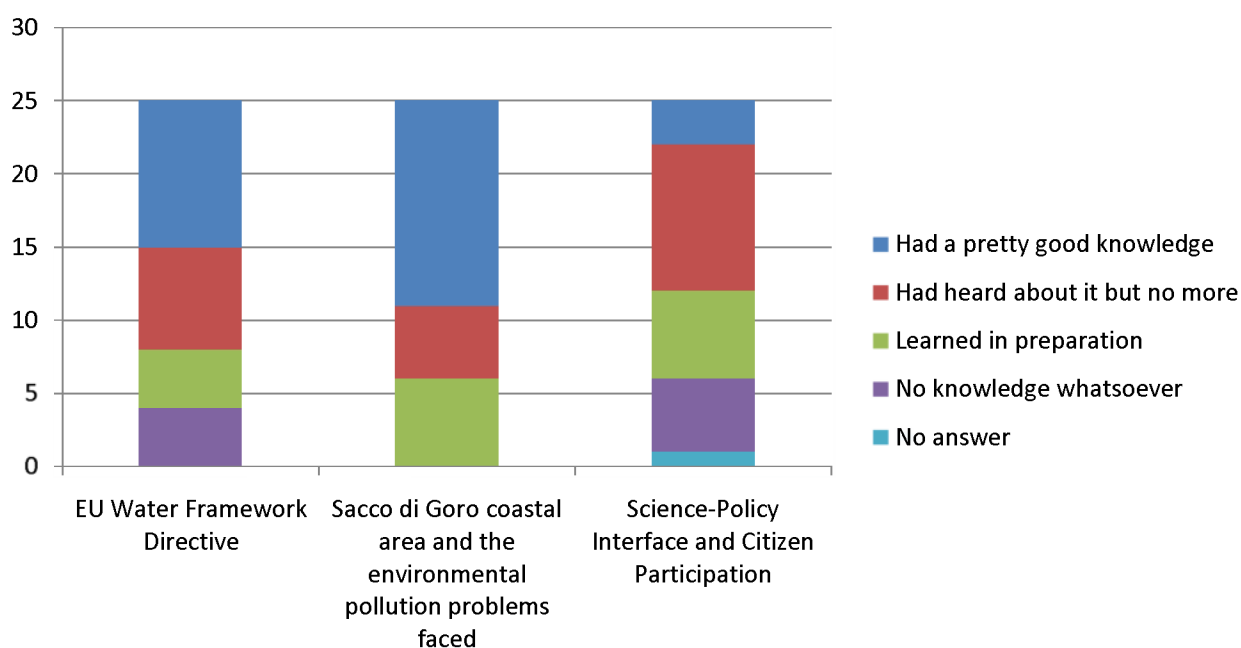


Figure 40: the level of knowledge on three topics declared by Local Conference participants

As regards the “Learned in preparation” answers (Figure 41), there are totally 16 occurrences (without differentiating among the three topics) and they are approximately homogeneously distributed among categories of participants. The category that mostly declared to have spent time in preparation is Citizens.

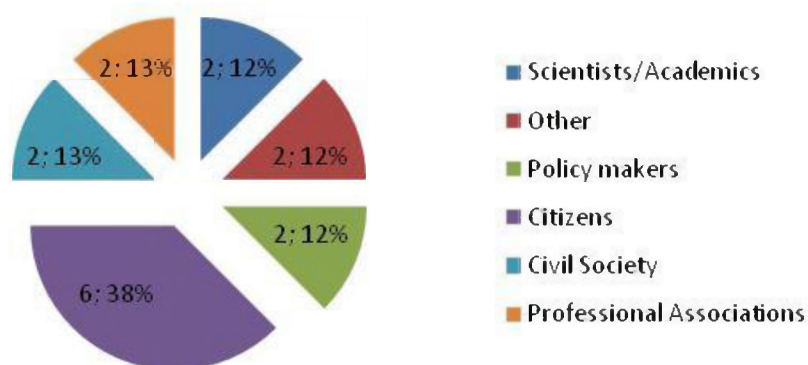


Figure 41: the distribution among categories of the “In preparation” answers within the three topics

As regards the Science – Policy Interface topic (Figure 42), two citizens answered “No knowledge whatsoever” and one of them declared to attend the Workshop. It has to be reminded that all the ten citizens attended the Workshop but one of them left the Workshop at the end of the first day. No policy makers declared not to own knowledge on that, while one scientist on the three stated not to have any knowledge on the current topic (and of course they declared to have attended the Workshop).

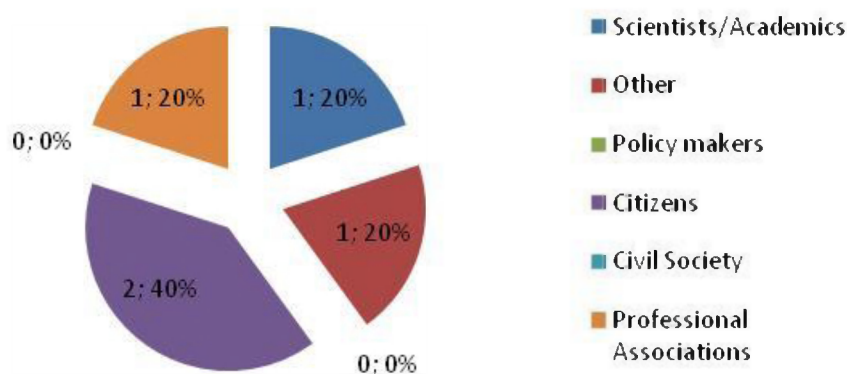


Figure 42: distribution among categories of “No knowledge whatsoever” answers as regard the Policy – Interface topic.

As regard the “Sacco di Goro coastal area and the environmental pollution problems faced” topic (Figure 43), among those who answered to have a “pretty good knowledge” about it, the category mostly represented is Policy Makers (only one of them attended the Local Workshop); only the 2 scientists on the three who compiled the questionnaire (they all attended the workshop) declared to have a “pretty knowledge” on that topic. Only 2 citizens on 10 declared to have a pretty knowledge on the Directive and they both attended the

Workshop.

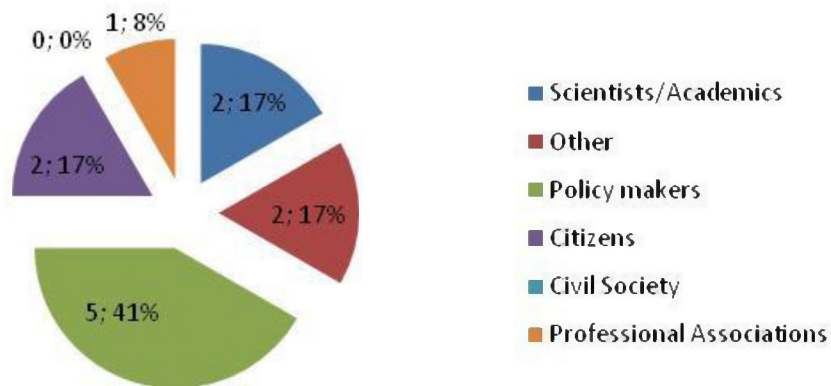


Figure 43: distribution among categories of “Pretty good knowledge” answers as regard the Sacca di Goro environmental topic.

In general (Figure 44), people declare to have learned a great deal. Among the attending categories (Figure 43), the one who mostly declared to have learned a little is Civil Society (100%), followed by Scientists (67%). The category most enthusiastic of the lessons learned is Other and Professional Associations (100%), followed by Citizens. No one asserted to have learned nothing at all.



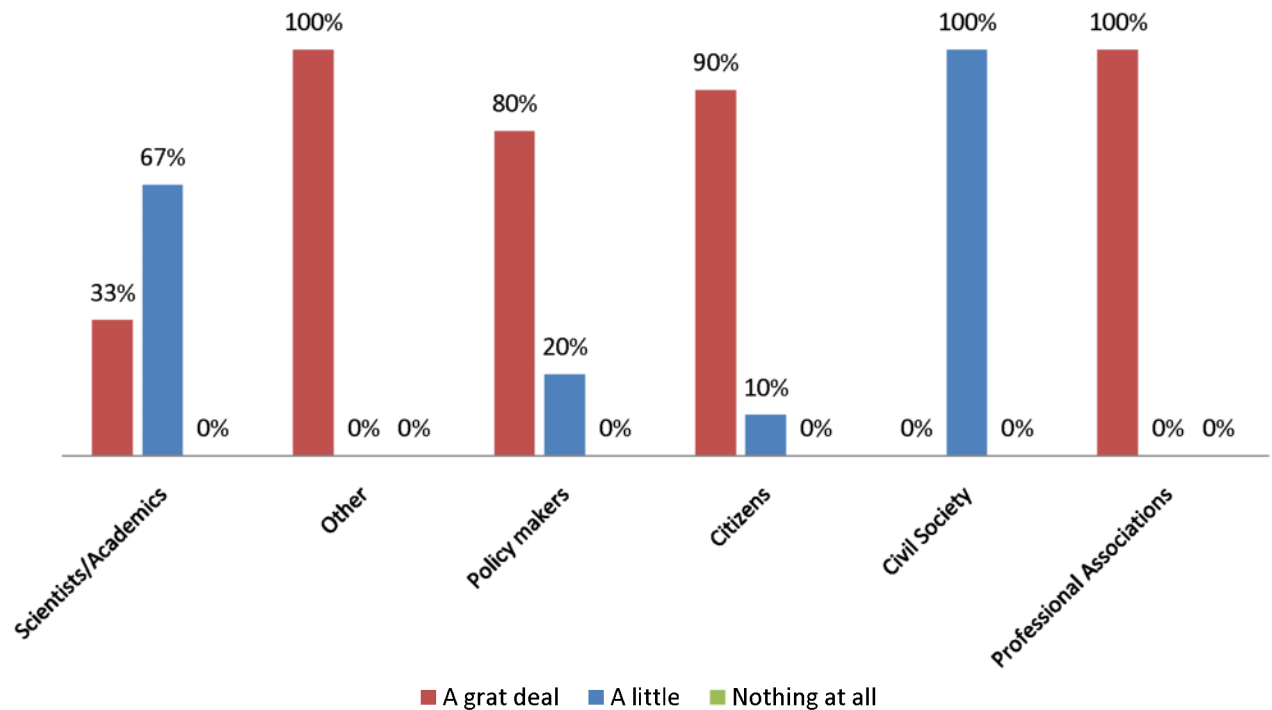


Figure 44: the percentages, for category, of those who learned a little, a great deal or nothing at all.

#### 5.5.2.2 Level of Satisfaction

The questions about satisfaction focused on the single presentation sessions, discussion elements of the Conference and logistics.

The average marks given to the single presentations are displayed in Figure 45. The scale run from 1 (not at all) to 5 (very much). In general, the evaluation oscillates between 3,7 i.e. *The prospective situation of the EU water quality frame directives* and 4,2 i.e. *Citizens' Declaration presentation of options*. The overall satisfaction is fixed at 4.

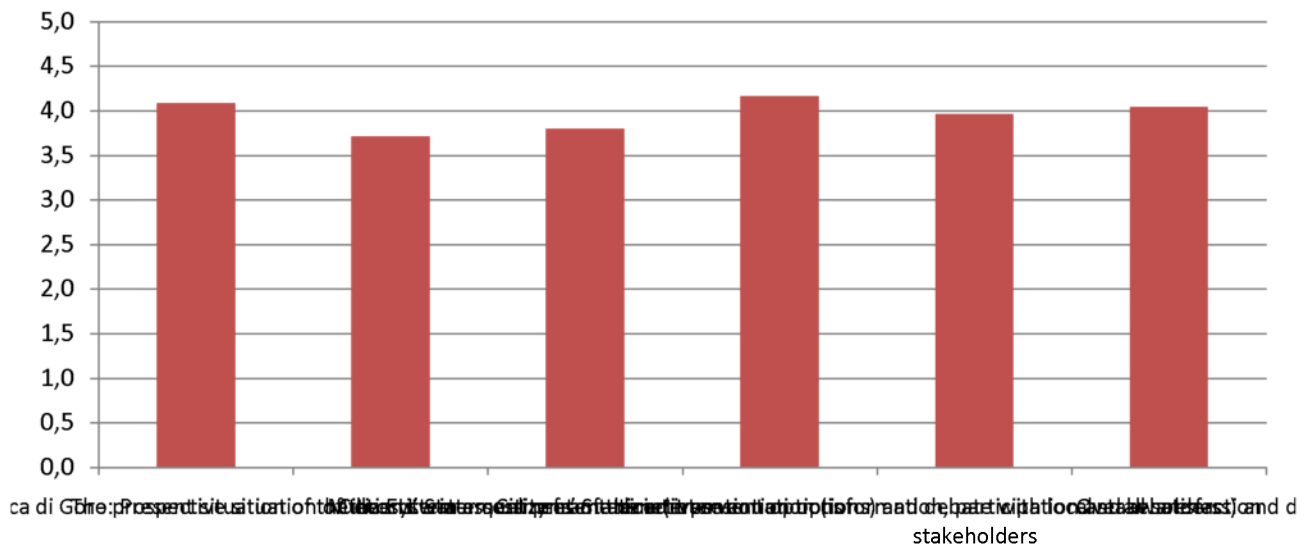


Figure 45: average evaluation of single presentation sessions.

**Many comments, indeed, appreciated the Citizens' Declaration, their commitment, the positive feelings they communicated and their awareness of Sacca di Goro overall situation.**

As regards the level of satisfaction bound to the discussion elements of the Conference (same scale), displayed in Figure 46, moderators and speakers received the best average marks (4); **debates outputs received the lowest mark. Many comments, indeed, remarked too little time for discussion rather than some lack of debate from the stakeholders' side or doubts regarding the future uncertain acknowledgment of Citizens' suggestions or action by politicians.**

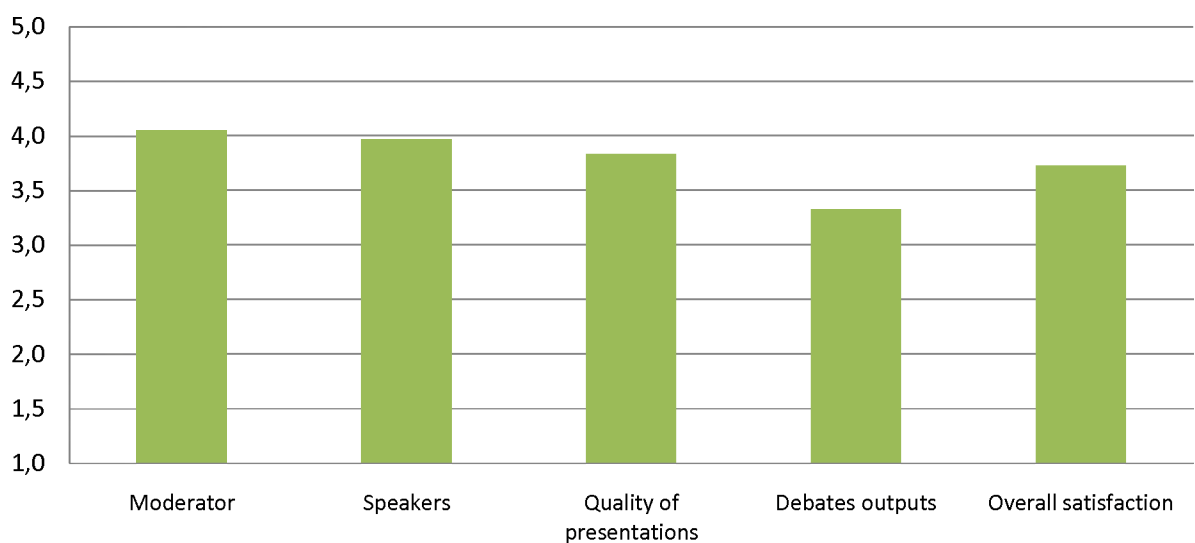


Figure 46: the average evaluations regarding the elements of the Conference

### 5.5.2.3 Focused topics

The first focused topic regards the linkage between the Conference discussions/outcomes and the participants' everyday life. This questions was thought to address the effectiveness of the Conference and its impacts onto behaviors, attitudes, expertise. Participants react in a very diversified way to the question: some people evaluated the Conference outcomes as very relevant for their daily work, some not relevant at all. A similar result derives from the response to participants' expectations by the Conference. Expectations were on average respected although the remarks listed in the previous paragraphs. The final evaluation concentrates on policy makers interventions. Around half of participants did not have any to say about this; **most of the others did not appreciate their speeches, since some of them seemed not to be so committed in acknowledging and really considering the Citizens' Declaration and the outcomes of the discussions.**

### 5.5.3 Science-policy-society interface

One of the main elements featuring the Science-policy-society interface is bound to the knowledge pattern. It indicates how the level of knowledge has been trending throughout the three participatory moments: the First European Workshop, the Local Workshop and the Local Conference. “Knowledge” refers again to three topics: *EU Water Framework Directive, Sacca di Goro coastal area and pollution problems faced, Science Policy Interface and Citizens Participation*. It can be asserted that in all the three participatory moments knowledge has been provided by all the participants, in different formats and measure: expert knowledge mainly by scientists, tacit and local knowledge mainly by stakeholders and local policy makers. The reaction of citizens displayed gradually within the process: their Declaration, at the moment, can be thought as the closest objective measure of the knowledge they accumulated so far. Answers provided with questionnaires help to understand which path has the knowledge process followed so far. Answers analyzed are not the same in number, since not the same number of questionnaires among citizens have been collected, therefore comparative statistics are provided with percentages on the total.

Starting point of the analysis is the feedbacks of the First European Workshop<sup>21</sup>. Here is the information collected with the questionnaires given at the Workshop:

- 56% had a pretty good knowledge about the Water Framework Directive or learned about it in preparation of the meeting
- 70% reported being knowledgeable about their coastal area (either in learning about it in preparation of the meeting or having knowledge in advance)
- 30% knew about science-policy interface or learned about it in preparation of the meeting

#### 5.5.3.1 EU Water Framework Directive

As displayed in Figure 47, after the European Workshop (i.e. Prior to the Local Workshop but some months later), some citizens (around 30%) still declared still not to have knowledge about EU Water Framework Directive although part of the European Workshop was dedicated to the policy framework of water management. The most of questionnaires states to have heard about it and just the 10% is pretty good acknowledged. **The effects of the Local Workshop and of the knowledge exchange among participants produces interesting shifts: the “no knowledge” column reduces, the “pretty good knowledge” increases. Someone has being revising the lessons learns: around 20% begin to spend time in preparation, perhaps as a consequence of an increased level of commitment.**

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<sup>21</sup> For further information, consult the *Participants’ Evaluation of First European Meeting* report

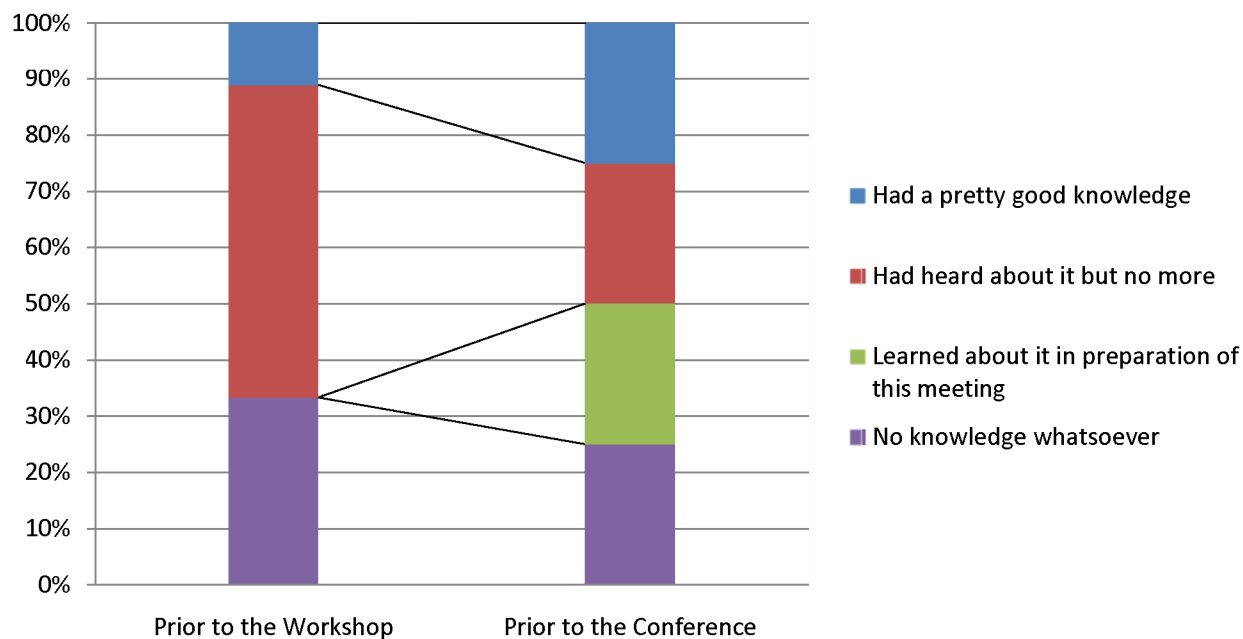


Figure 47: trend of knowledge level about EU Water Framework Directive

#### 5.5.3.2 Sacca di Goro coastal area and the environmental pollution problems faced

With reference to Figure 48, around the 30% of citizens states that before the Local Workshop their knowledge of pollution problems as regards their coastal area is none. The major part declares to have heard about it, but no more. No one spent time in preparation on this topic. **The situation turns into a better one after the Local Workshop: people who spent time in preparation increases as those who have a pretty good knowledge at the expense of those who have just heard about environmental problems or who have no knowledge at all.**

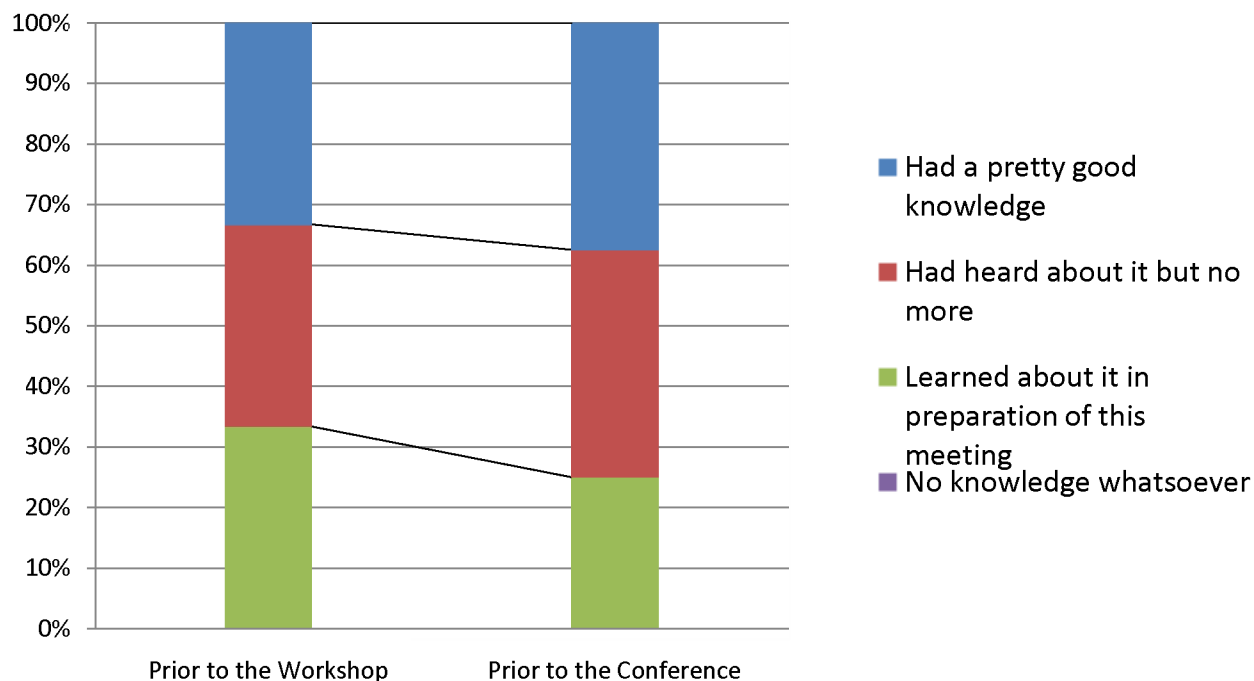


Figure 48: trend of knowledge level about coastal waters pollution problems

### 5.5.3.3 Science-Policy Interface and Citizen Participation

Looking at Figure 49, the Citizens' evaluation of their level of knowledge before the Local Workshop accumulates on the "just heard about it" answers (more than 50%). The remaining divides between "No knowledge" and "Learned in preparation". **At the moment of the Conference, participants evaluate their level of knowledge before the Conference as generally increased: part of the "just heard about it" answers is supposed to shift towards "Pretty good level", part of "No Knowledge" is supposed to shift towards "I learned something in preparation".**

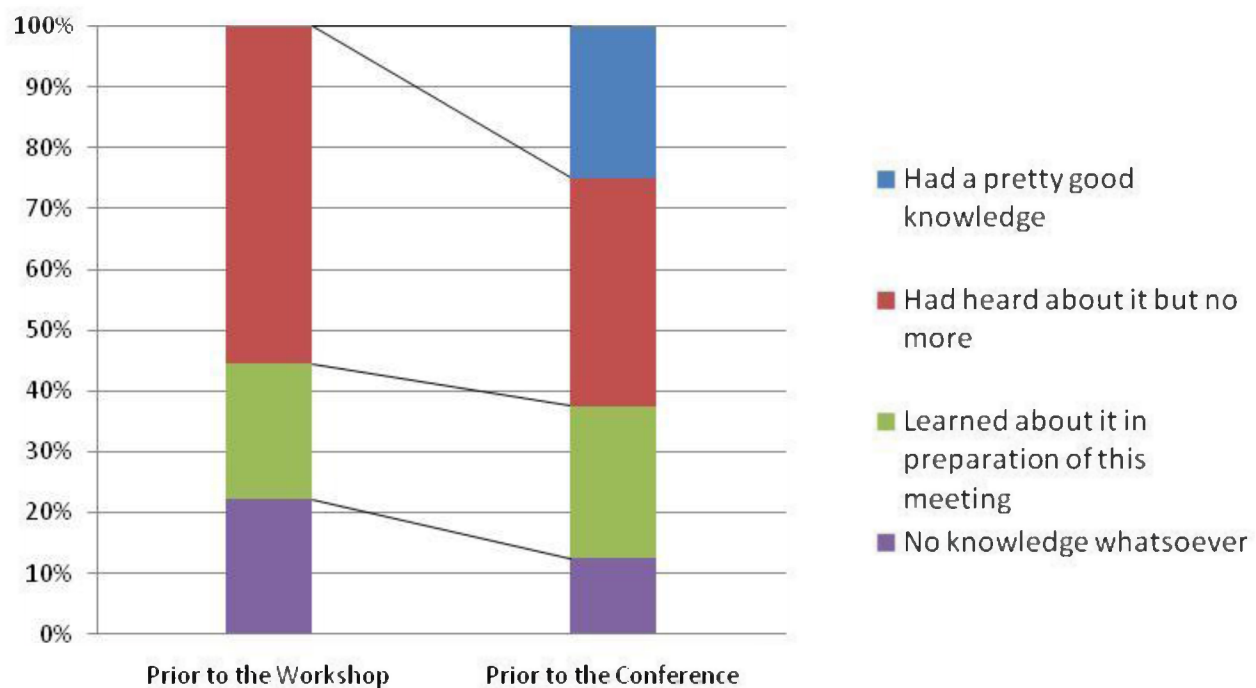


Figure 49: trend of knowledge level about Science - Policy Interface and Citizens participation

## 6 Conclusions and Outlook

In terms of the preliminary and descriptive evaluation results it is striking how similar the perception of the three citizen groups is. This goes for all areas of evaluation, from the initial knowledge and learning during the process to their assessment of the discussions and the drafting of the declaration.

Without venturing too much into the analysis (which will be part of the forthcoming D3.3 of the project) it appears that while all three citizen groups found the discussions most useful for their own enrichment, they had problems understanding how the outcomes could be useful in the policy process. In all three groups there seems to be a certain scepticism regarding the impact of their declaration and in some cases may be also the process in which the declaration was drawn up.

Coming back to the learning process, all three groups perceived the presentations and discussions as very effective in terms of transporting and internalizing new information. Also, on average they were positively surprised how interesting a subject would become about which they had known very little or even nothing before the beginning of the project.

For the upcoming analysis of the evaluation results of the AWARE process it will be important to focus also on the qualitative information provided in the open text answers of the questionnaires and some of the interviews. This will allow the evaluation team to better understand and interpret some of the quantitative results presented in this report.



## Annex 1 – On-line survey North Sea

### 1. Please let us know to which of the following groups you belong:

Professional associations (farmers, fishers, other) ☐

Civil society (NGOs, other) ☐

Scientists/academic ☐

Policy-makers (public water agencies, environmental management institutions, other policy-making bodies) ☐

Other, please fill in:

### 2. What is your perception of the ecological status of the Southern North Sea coastal water ecosystem? Please rate on a scale of 1 (very poor) to 5 (very good)

*Quality of water (algae, colour, etc.)*

☐ 1      ☐ 2      ☐ 3      ☐ 4      ☐ 5

*State of the beaches*

☐ 1      ☐ 2      ☐ 3      ☐ 4      ☐ 5

*Overall ecological status*

☐ 1      ☐ 2      ☐ 3      ☐ 4      ☐ 5

### 3. Has the ecological status improved / worsened in the past five years?

Improved ☐

Worsened ☐

- 4. If the ecological status has improved / worsened, what are the main causes, in your opinion?**

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- 5. What can the following actors do to improve or protect the ecological status of the coastal water ecosystem?**

Professional associations (farmers, fishers, other)

--

Civil society (NGOs, other)

--

Scientist/academic

--

Policy-makers (local, regional, national, EU)

--

- 6. To what extent does cooperation between the following actors currently occur?**  
Please rate the quality of cooperation using a scale of 1 (very poor) to 5 (very good)

*Between science and policy*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Between policy and the public*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Between science and the public*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Overall between science, policy, and the public*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

- 7. Please describe in a few words an example of science, policy, and public cooperation:**

**Who cooperated?**

policy and the public ☐

science and the public ☐

science, policy, and the public ☐

How did it work? (number of meetings, time period of cooperation, etc.)

--

Positive results and experiences:

--

Negative results and experiences:

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**8. Please check the main causes of the environmental degradation of coastal waters, in your opinion:**

Lacking or inappropriate policies ☐

Lacking enforcement of regulation/policies ☐

Lacking of participation of key stakeholders ☐

Other, please fill in:

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## Annex 2 – Protocol of North Sea citizen workshop

David Alcaud

### Synthèse du Workshop – Bruxelles – 8 et 9 octobre 2010

Cette synthèse longue, qui reprend de manière aussi exhaustive qu'il a été possible l'essentiel des propos tenus au cours du *workshop*, propose également des remarques plus analytiques destinées à être réutilisées pour la suite du projet si elles sont jugées utiles. Placé en situation d'observation participante, l'auteur propose ainsi de partager son retour d'expérience.

#### Matinée du 8 octobre.

Tout le monde se retrouve dans une grande salle de l'ULB ; un buffet composé de fruits, de biscuits, de chocolats et de boissons chaudes et froides complètent un accueil chaleureux. Les différentes personnes présentes ont visiblement l'air contentes de se retrouver et d'échanger.

La disposition de la grande salle est la suivante : les animateurs sont sur le côté ; les intervenants sont assis sur les chaises et font face à deux tables de citoyens. Je me tiens en retrait.

Un peu après 9h, le temps de caler les détails techniques afférents à la rencontre, Fanny Gleize et Yves Mathieu, de « Mission Publiques », font l'introduction de la journée.

Il est rappelé que la rencontre se fait sous l'égide du 7<sup>e</sup> programme-cadre : l'objectif est ici le décroisement des relations entre science et société. L'expérience AWARE est le résultat d'un constat : il existe un problème lié à la distance qui existe entre scientifiques et utilisateurs ou bénéficiaires de la recherche. Il s'agit donc d'exploiter le potentiel issu du travail de rapprochement de la science par les parties prenantes<sup>22</sup>. La démarche suivie à Bruxelles sera appliquée de manière identique les semaines suivantes à Goro et Riga de manière à faciliter l'intégration.

Les **objectifs** sont rappelés : Il s'agit, le premier jour, d'étudier comment améliorer les écosystèmes marins côtiers, de travailler à corriger la situation de la zone sud de la mer du Nord et de ses trois bassins (Escaut, Seine, Somme).

Pour cela, il sera fait appel aux connaissances des différentes parties prenantes. Cela prépare le deuxième jour, où il s'agira d'apporter des solutions/recommandations afin d'améliorer la gestion de la zone côtière de la mer du Nord et d'envisager des scénarios scientifiques pour faire changer la situation. L'étape

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<sup>22</sup> Cette présentation synthétique rapide mérite une attention renouvelée : la question d'une influence par les parties-prenantes dans la construction de l'objet des scientifiques, dans la manière dont ils mènent leur étude, et partant, dans le mode de production des connaissances scientifiques appliqué à un problème (ici l'eutrophisation) est bien entendu un enjeu majeur de la démarche. Or, comme nous le verrons ci-après, le degré de coopération, son intensité, ne sont pas encore très clairement identifiés et partagés par les parties-prenantes. Cet écart, cognitif et pratique, constitue bien une clé de la réussite du projet et mérite une poursuite du travail.

suivante prévue est la présentation des résultats lors de la conférence à Dunkerque (à confirmer à cette date). Cette conférence de restitution des travaux permettra de voir comment les *stake-holders* réagissent. Le travail de Missions publiques est notamment de « recueillir la trame de ce que vous allez porter pendant deux jours. Ensuite, plus d'apport individuel, il s'agit de réaliser des apports collectifs. Nous sommes les garants de cette contribution collective ».

Il s'agit donc d'améliorer la situation des systèmes marins, littoraux, confrontés à l'eutrophisation. Il s'agit aussi de travailler à davantage de « *Connectivity* », entre citoyens, scientifiques, et parties-prenantes. Il s'agit d'arriver demain soir à des recommandations pour favoriser cela, ainsi que pour identifier de quels scénarios les scientifiques pourraient se saisir et travailler<sup>23</sup>.

Deux objectifs majeurs complémentaires peuvent donc être distingués : 1) élaborer des recommandations aux scientifiques pour qu'ils se saisissent de telle ou telle question et qu'ils travaillent en conséquence ; 2) comment améliorer la gestion de l'éco-système marin côtier de la zone ouest.

Il s'agit d'aboutir *in fine* à une véritable compréhension partagée.

Fanny présente le **programme** de la journée et l'exposé des motifs qui ont conduit à cette construction : On est reparti de la discussion d'avril. 1h30 pour commencer et refaire le point sur l'eutrophisation, une reconnexion avec la matière. Puis table-ronde stake-holder pour échanger, chacun apportant des angles de vue complémentaires sur la perception du problème de l'eutrophisation. La 3<sup>ème</sup> Table ronde est dédiée aux usines qui traitent des eaux domestiques usées et de l'épuration. La 4<sup>ème</sup> est elle consacrée aux sources diffuses : il s'agit là d'une problématique très différente, où le jeu des acteurs est également très différent.

Yves souligne que Fanny est la garante des questions que LES CITOYENS ont identifiées et auxquelles les parties-prenantes doivent répondre, de manière le plus direct possible.

Le temps disponible est limité à 1h30 par table-ronde. Dans le cadre de ces deux jours, les tables rondes permettent aux parties prenantes de bénéficier d'angles de vue différents.

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Après cette présentation, la parole est donnée aux citoyens pour qu'ils puissent s'exprimer sur la période qui s'est écoulée entre Paris et Bruxelles.

Trois citoyens sont alors absents : Michaela, légèrement souffrante, arrivera un peu plus tard ; Jean-François rejoindra le groupe dans l'après-midi ; Benjamin ne peut pas être là.

Sont donc présents : Emmanuel, Isabelle, Alain, Véronique, Nicolas, Ann, Béatrice, Anne-Marie.

**Plusieurs types de remarques sont formulés, qui méritent une attention particulière : quelle pertinence de la focalisation sur l'eutrophisation au regard du caractère plus large du problème de pollution des eaux ? ; quelle légitimité et quelle influence peut-on vraiment avoir sur un tel problème et dans une telle situation ? ; comment sensibiliser le grand public ? La question du statut de la rencontre est ainsi**

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<sup>23</sup> Ce deuxième enjeu annoncé nous semble également mériter un suivi spécifique car il apparaît à la fois comme un enjeu clé exigeant une capacité d'innovation dans le mode de conduite du projet qui n'est pas inné et exige une adaptation des postures et des rôles des différents protagonistes. Même s'ils sont tous de bonne volonté, comme le déroulement de l'ensemble du workshop en témoigne, l'obtention d'un tel résultat exige une adaptation qui n'est pas acquise et doit être spécifiquement accompagnée comme nous le verrons par la suite.

**conscientisée par les citoyens, qui sont à la fois intéressés et très interrogatifs sur leur propre rôle et leur capacité d'influence.**

Ils expriment d'abord leur inquiétude eu égard à la limitation du sujet, peut-être trop focalisé sur l'eutrophisation, et qui ne prend pas assez en compte les autres sources de pollutions. Ils soulignent la nécessité de replacer les liens entre la pollution issue des sources diffuses/ponctuelles et la pollution dans la zone côtière. (Mikhaella et Véronique). Emmanuel souligne que d'autres sujets sont importants : déchets organiques, et que l'on s'est focalisé sur l'eutrophisation. Pas de pb avec ça mais c'est un choix peut être un peu lié à l'existence de recherches existantes. Alain confirme la remarque d'Emmanuel. Alain déclare : « Je me sens comme un cobaye par rapport à une question plus large. »

Fanny et Yves répondent sur ce point, tout comme les scientifiques. Yves et Fanny rappellent que l'on part dans *Aware* de la perception des citoyens, et donc tout ce qui élargit et reformule la question est bienvenu. Yves souligne que tout ce qui concerne l'eau nous intéresse, qu'il s'agit de rester dans le large, tout en entrant dans le sujet par l'eutrophisation. Josette, de l'Université Pierre et Marie Curie, précise que pour elle aussi l'eutrophisation est surtout une entrée intéressante pour poser des questions très larges. Gilles, de l'Université Pierre et Marie Curie, précise qu'il se sent tout autant cobaye que les citoyens : « On n'a pas choisi les logiques de participation citoyenne. On pense que c'est un angle d'attaque intéressant et pas restrictif, c'est une entrée qui permet une entrée construite pour éviter d'être trop dans le bavardage général. »

Yves précise qu'il s'agit d'une expérience. Dans le septième programme cadre, il y a eu une demande pour un rapprochement entre science et société. Nous ne sommes pas tant des « cobayes » mais nous répondons à un problème de carence dans la manière dont on gère la recherche scientifique en Europe et dont on souhaite expérimenter ici le rapprochement. Il s'agit de travailler au niveau local, puis de travailler pour arriver à un rapprochement au printemps, en fonction de la manière dont les parties-prenantes s'en saisissent.

Alain rappelle que c'est une provocation mais que c'est important quand il discute de ces questions. Emmanuel confirme de son côté que « tout est lié, on est d'accords ». Voir la directive nitrates qui couvre plein de choses... On aboutit à un accord de tous sur le fait que tout est lié...

**On mesure ici, dans le cadre de cette seconde rencontre après le travail réalisé à Paris, combien les rôles de chacun restent à construire et à consolider. Cela se pose en termes de crédibilité et de légitimité pour chacun, d'auto-estimation de sa capacité à peser sur les débats au sein du groupe et au-delà. Il s'agit là d'un des enjeux clés de ce second workshop : valoriser une dynamique à la fois individuelle et collective qui renforce la cohésion du groupe *Aware*, aussi bien des citoyens entre-eux que des différentes composantes du groupe (scientifiques et experts Missions publiques).**

- Un autre aspect de la discussion concerne les perceptions très différentes et l'absence de prise de conscience des citoyens qu'ils côtoient à l'égard des changements/pollution de la zone côtière. Les échanges de certains citoyens avec leur entourage et les tentatives de sensibilisation ont obtenu des résultats mitigés.

Fanny et Yves demandent ensuite ce qu'il s'est passé depuis avril, et qui a trait avec le projet ?

Alain répond : depuis Paris en avril, je vois la mer tous les jours, j'ai l'impression que mon regard a un peu changé. Dès que la mousse est un peu marron, j'ai des impressions amplifiées. J'ai été plus sensible au climat, à la transparence...

Véronique souligne qu'elle a l'impression que les autres ne sont pas au courant. Il y a un manque d'information très importante, que les gens ne font pas le lien. « Et j'ai décidé de manger un peu moins de viande, une fois par semaine ». « Mes enfants sont jeunes et très ouverts, et sont très sensibles à ce que je leur dis ». Il est possible de **sensibiliser les jeunes**.

Mikhaella indique qu'elle en a parlé après Paris. Elle était enthousiaste mais ensuite, progressivement, cela n'a pas été une problématique à laquelle elle est connectée au quotidien, dans le contexte de l'eau potable en région parisienne. « C'est en vacances que je songe à ce que la mer soit un peu polluée ».

Nicolas précise qu'il a bien eu des discussions, mais surtout des amis qui travaillent dans des bureaux d'étude et connaissent bien les questions d'épuration. « On en a discuté à Berck cette semaine. ...Mais on ne s'est pas baigné ! »

Ann raconte s'être intéressée à la mer de manière plus globale. J'ai participé à une conférence sur l'eau, Un droit pour tous, pour défendre l'eau potable. Contre le passage du droit public à un droit privé. Il s'agissait d'une initiative de la Commission et de plusieurs autres acteurs. Je me suis intéressé au bassin de la Haute-Meuse, dans le cadre d'une association qui réunit tous ceux qui ont des liens avec la rivière : les partenaires de la rivière ( les privés, communes, départements). On réunit les parties-prenantes pour échanger.

Béatrice : j'ai été sensibilisé... Je mange plus bio avant. Au niveau professionnel, j'ai remarqué au niveau de la qualité que les produits comme les huiles pouvait être très dangereux. Quand on travaille sur les normes ISO, on se rend compte que l'on remplit des cases, alors que lorsque le produit rentre dans la terre, c'est une catastrophe. Mais en Belgique ces questions dépendent des régions et ne suivent donc pas les mêmes méthodes. Les entreprises sont aussi confrontées à ces différences. Si on fait l'analyse du sol, ce qui peut être une solution, il faudrait le rendre obligatoire. Il faudrait donc faire en sorte que les politiques se saisissent de la question et interdisent qu'on en mette dans le sol.

Emmanuel : j'ai fait un séjour au Crotoy. Les budgets ne sont pas alloués correctement sur la Baie de somme après discussion avec des professionnels de terrain. J'ai fait une promenade près de Ouessant. Chaque fois que je me ballade, je ramasse de plein de choses, des plastiques, et je les mets à la poubelle. C'est un petit geste, mais si chacun y met du sien... C'est peu par rapport au problème d'eutrophisation. J'ai lu des publications sur l'eau ; j'ai d'ailleurs rapporté un fonds documentaire. J'ai vu un film fait par des donateurs privés et aidés par Attac, qui évoquait la question de la privatisation de l'eau et de la prise de pouvoir de Véolia Environnement. Il y a peu, ils ont arrêté l'épuration et ont tout rejeté dans la Senne (Bruxelles).

Isabelle : J'ai eu des discussions avec la famille et avec l'entourage professionnel. **Les gens restent sceptiques : on t'utilise me disent-ils, tu vas être la garante de la participation...** Il y a beaucoup de forces d'inertie à combattre. Quand on vient avec des éléments très concrets, tu sais c'est une goutte d'eau, ça ne va pas changer. Alors que nous on pense qu'on peut faire un petit quelque chose...

Il y a aussi eu une expérience en Wallonie sur ce qui se fait avec l'eau. C'est un programme pour séparer les eaux. Dans une propriété que je possède, on intervient via le Comité de quartier, dans lequel il y a des réactions **nimby**. Par exemple, il y a une petite propriété, traversée par une rivière, avec des terrains à bâtir. L'écolo a refusé que son terrain soit parcouru par les tuyaux qui transportent les eaux usées. Malgré ses convictions politiques, les considérations d'argent ont abouti à une réaction frileuse et il a refusé que ça passe chez lui. J'ai aussi vu un reportage sur Arte sur l'importance du trafic en Manche – impressionnant sur le volume, la traversée depuis Calais, etc. Ils ont un peu parlé de la question environnementale et ont



bien montré combien les problèmes principaux sont liés au trafic. Ils sont persuadés qu'il va y avoir un accident grave (transporteur, pétrolier, accident majeur). C'était saisissant : je me suis dit merde alors ! On sera tous découragés à cause d'un accident majeur ; c'était terrifiant, ça m'a vraiment marqué ».

Alain souligne : je suis content d'entendre ça, en tant que marin je suis très soucieux. Il évoque une j'apporte une publication de Véolia environnement, Galiléo. Un petit débat s'engage alors sur Véolia. Emmanuel raconte à quel point les lobbys de véolia sont importants à l'égard de l'Union européenne. Mikhaella précise qu'il peut prévaloir un scepticisme européen, oui, mais même si on est des gouttes d'eau, « je crois vraiment que ça peut faire une différence ! ». Josette plaisante : ne lynchez pas demain le représentant de Véolia. Il travaille avec nous et n'est pas personnellement responsable de la situation. Petit débat, sur le sujet, et il est convenu que sans le lyncher bien sûr, on peut poser des questions.

**Bilan de la première session : on voit que la question de la capacité pour les citoyens d'influencer la situation globale est lancinante. Il s'agit d'un enjeu pour le projet et les citoyens en sont particulièrement conscients. Le risque d'instrumentalisation de leur participation a été évoquée.**

### **10H15 Christiane (ULB)**

Reprise synthétique des diapositives présentées à Paris . Tant va à la mer qu'elle mousse. Mousses un peu brunes, pas toxiques mais quand il y a accumulation, ça veut dire qu'il n'y a pas de bon transfert dans la chaîne et un déséquilibre de l'écosystème. Il peut s'agir d'une colonie de Phaeocystis. On trouve alors trop d'azote et de phosphore, principalement les nitrates. Les Phaeocystis broutent comme les vaches et sont mangés par les poissons. Elle évoque les sources ponctuelles de pollution : les effluents urbains qui arrivent en un point, qui font un passage ou pas par une station d'épuration et ensuite sont déversés. La question se pose notamment pour les sols agricoles. On parle d'épuration et non pas de traitement (eau potable) ; Dans le cas de l'épuration on élimine les matières organiques et on rejette nitrates et phosphates. Les enjeux de l'épuration tertiaire sont évoqués : le traitement de l'azote et du phosphore est assez poussé. Suivant le traitement opéré, le coût est plus ou moins important. Ici le traitement se fait en aval.

Gilles précise que l'épuration tertiaire pose la question de savoir jusqu'où on peut aller. On peut remettre en cause un traitement trop poussé car notre impression est que les apports diffus sont dominants dans la plupart des bassins. Donc, s'il est facile techniquement d'aller dans épuration en aval, est-ce pour autant le plus efficace (Cf. ateliers 3)

Christiane aborde ensuite la question des sources diffuses, qui concerne donc essentiellement les pratiques agricoles. Dans ce cas, si on agit, on agit plus en amont et on agit sur le processus. Lors de fortes pluies, tous les fertilisants non utilisés par les plantes tombent dans l'eau et les nitrates très mobiles sont donc très dangereux.

**Ecosystème côtier de la baie sud de la mer du nord : Quelles actions peut-on mener, que peut-on faire ?** Comment améliorer le traitement des eaux usées ? Ou travailler sur terres agricoles, en limitant élevage extensif, refaire du pâturage et pas de nourriture de maïs (bonnes pratiques agricoles, agriculture européenne,) recommandée par la directive-cadre européenne. Le lagunage pour éliminer naturellement les nitrates ? Les moments d'interculture sont les moments où l'on assiste à des fuite de nitrates. D'où le besoin de faire des plantes pour éviter de souiller les sols car elles mangent l'azote disponible. Plus de pluie en hiver et donc limite les lessivages. Et la matière organique renourrit le sol en se décomposant : il n'y a

donc pas épuisement des sols et pas d'usage de fertilisants. L'idée de jachère est un moment de repos du sol : en fait pas repos, on amenait les bêtes la nuit pour que leurs excréments apportent la fertilisation. La jachère était un moment de redécouverte de la fertilité. Au XIXème siècle, la jachère a disparu quand elle a été remplacée par les légumineuses : les bêtes ont été mises en élevage et on apportait leur fertilisant mieux recueilli dans l'étable. Cela a amélioré la fertilisation. Les légumineuses sont capables de prendre l'azote de l'air pour en faire de l'azote au sol. C'est donc bien mieux que les azotes synthétiques chimiques. Dans les zones humides, les nitrates sont utilisés comme oxydants naturels et permettent d'éliminer naturellement. Cela exige un bon aménagement du territoire. Le travail de Pauline a lui apporté d'autres questions : à partir des affluents, l'utilisation des micro-algues, peut-elle aboutir à faire de l'énergie (biodiesel). Peut-on éviter l'épuration tertiaire pour mieux exploiter la biomasse qui reste ? Cette hypothèse existe dans la littérature. Il faut également souligner les changements profonds dans le secteur agricole : peut-on passer à l'agriculture biologique ? La mytiliculture (moules), extensive est-elle une alternative intéressante dans la zone côtière ? Les moules filtrent l'eau et peuvent diminuer la biomasse du phyto-plancton. On dispose de plusieurs cas d'étude : la mer baltique, les initiatives de la Suède. Engrais ou bio-diesel ? Mais les moules font des pseudo-faeces : il y a donc besoin de bien configurer la ferme aquacole pour éviter que le sol ne soit à terme pollué. Cela étant dit, cela n'empêchera pas les Phaeocystis.

Josette précise : au stade où on en est dans la pollution des nitrates, on en a besoin car on ne sait pas comment réduire l'azote, de l'ordre de 1%. Plus on a une diversité de choses, plus on agit peu à peu. On a donc besoin d'un complément de calcul économique et écologique.

**Fanny précise qu'on est au cœur de la démarche. Quels leviers de changement de la situation pour que cela s'améliore. Quelles recommandations vous auriez envie de faire ?**

Alain donne l'exemple des pêcheurs dunkerquois qui se convertissent pour faire des moules en mer.

Christiane répond : deux entreprises en Belgique ont reconverti les pêcheurs de moules destinées à la consommation humaine. Mais la société SDVO a arrêté l'expérience car il y a eu un échec. C'est donc supprimé pour l'instant et 100 grosses bouées sont désormais inutilisées. Il s'agit d'un système très lourd pour que les larves se posent dessus. Une autre entreprise a utilisé un autre système : les moules ont été très bonnes à la consommation, avec un contenu de chair très grand. On peut donc tester l'hypothèse. On est ici très en aval. Le contexte est compliqué : la gouvernance des acteurs en mer du Nord est complexe et la connaissance des effets écologiques ou économiques de différentes options de remédiation limitée. **On travaille sur une chaîne de modèle. Que se passe-t-il sur le bassin versant ? Ecrire un scénario c'est écrire une histoire. Avec les modèles on se demande ce que l'on peut traduire pour faire du quantitatif et quantifier la réponse de l'histoire qu'on a écrite. Et les résultats peuvent être probants ou pas. Les modèles sont limités : on n'est pas certain que les modèles dans leur état actuel répondront à toutes les questions posées. Si vous citoyens nous écrivez une page d'histoire, il est possible que nous ne puissions pas répondre.**

Fanny : quelle échelle de temps pour vos scénarios ? Comment vous décidez ?

Christiane : La directive-cadre eau repose sur un scénario court-terme. Mais nous ce n'est pas pour demain, ça passe par des changements structurels (ex la PAC), et cela dépend des réponses de l'écosystème ... Quand les nitrates sont là, ils sont là pour longtemps... Quoi qu'on fasse ! Donc deux types de facteurs influencent le délai ; délais de la directive-cadre (mais des excuses sont possibles) et facteurs d'inertie dans l'existant. Et il existe des solutions d'aménagement autour de la rivière.

Deuxième question de Fanny : quels sont vos attentes scientifiques pour commencer à écrire une histoire ?

**Les citoyens écrivent le scénario et nous on tente de le modéliser. On essaie de le mettre en chiffre. Ex : si vous dites j'ai envie de construire des étangs ... Nous travaillons sur les questions et on peut aussi faire un retour sur la nature des scénarios proposés : affiner et reformuler les questions et les problématiques posées.** Christiane : on travaille sur les choix possibles de réduction des émissions de nutriments.

Quand on réduit la pollution en aval, c'est plus cher que quand on la réduit en amont !!

Fanny demande aux citoyens : est-ce que ça vous a remis les idées en place ?

Emmanuel fait remarquer qu'à Munich il s'est passé quelque chose de très important avec des résultats très intéressants. En Allemagne, ça avait été financé par le producteur d'eau.

Pause...

**Bilan : échanges utiles pour préciser les postures des scientifiques et connaître leur appréciation de leur marge de manœuvre, limitée en l'occurrence. Cette présentation précise le cadre contraint de la rencontre entre demandes citoyennes et encodage scientifique. Il s'agit là d'accompagner la rencontre de manière à faire bouger les lignes, le cas échéant, faire évoluer des pratiques et des constructions d'objet ancrées dans des logiques disciplinaires et des habitudes d'intervention. La présentation des « sachants » au public des profanes peut limiter l'interpellation et l'audace libre des citoyens.**

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#### **TR 1 Discuter des impacts de l'eutrophisation.**

Fanny anime le débat et pose les questions aux intervenants en précisant : **On est dans la perception.** Pour ne pas perdre la matière pendant la table-ronde, 3 questions :

- 1) Que reprenez-vous de la table-ronde ? Quels sont les éléments clés ?
- 2) Selon vous, qu'est-ce qui peut changer la situation de l'éco-système ?
- 3 Recommandations aux acteurs de la zone : ce qui nous aide au travail de demain ?

On commence par une discussion : M. Francis Kerckof, M Montassine, M Lefèbre, M Suméra

**M Lefèbre** travaille à la mise en place d'un système de surveillance, l'IFREMER étant mandaté par des entreprises ou par les ministères pour suivre les progressions ou les pollutions, dans tous les réseaux hydriques Dernièrement, l'outil a été adapté pour observer des taux de nitrates ... émergence d'un nouveau réseau d'observation pour l'eutrophisation. Il précise qu'il a vocation à améliorer les connaissances du milieu marin, ses ressources, parcourir à une meilleure connaissance et soutenir les professionnels et les politiques à tout ce qui touche au maritime. Différentes implantations touchent toutes les côtes, les grands centres, et l'on assiste à un rattachement de différents laboratoires côtiers. 6 thèmes d'intervention : grand équipement océanographique ; surveillance, monitoring des côtes ; ressources aquacoles alliotiques ; partie exploration grands fond : circulations et écosystème marin. On travaille aussi sur de grands schémas liés à la circulation des courants. Du point de vue de l'eutrophisation, on l'aborde de différentes façons. Soit on répond à la demande d'industriels pour suivre l'impact des centrales nucléaires sur le milieu marin (70's) ; ou à la demande des acteurs publics (protection de la santé publique, algues toxiques) ; et l'étude

de ces séries a évolué. Nous avons fait évoluer nos séries (les nitrates, donc on fait le lien avec le phytoplancton et c'est ainsi que l'on rencontre l'eutrophisation). C'est un travail en partenariat car très complexe, nous avons besoin de réseaux. On constate les effets sur les communautés d'espèces. Dominance de certains groupes sur d'autres : et en plus d'être dominants, elles vont produire des toxines et donc ça va toucher l'homme. Ex : le phytoplancton toxique impacte les coquillages (par filtration, toutes les toxines pénètrent dans les organismes). Il existe plusieurs grandes catégories de toxines : diarrhéiques, paralysantes (de l'engourdissement des extrémités jusqu'à la paralysie cardiaque /respiratoire ; ) toxique amnésiante (neurologique). Tout est multi-critère...

## **M Montassine.**

J'ai fait mon apprentissage avec mon père à 14 ans et demi et je suis toujours resté dans le littoral et dans l'espace estuarien de la Somme agressé par l'homme ; j'ai toujours travaillé sur la crevette grise, un peu sur la coquille Saint-Jacques, et sur le chalutage estival. Espaces sableux en majorité.

**NOUS IL Y A DES CHOSES QUI NOUS HEURTENT.** La mousse blanche : on a toujours connu ça ; c'est une production naturelle ; ça marquait même parfois les voies d'accès au port. Donc c'est pas d'hier ! Il y a des phénomènes mer noire ou brune : pas tjs de la pollution ; phénomène des vagues, etc. L'évolution que j'ai pu apercevoir est perturbée : dans notre estuaire il y a une évolution physique : apport sédimentaire par ex ; donc des choses disparaissent qui étaient utiles à la vie de l'estuaire. On ne sait pas toujours mesurer. On n'a pas appris à mesurer ces changements. C'est progressivement que j'ai acquis de la culture par les échanges : rencontres de terrain avec quelqu'un qui vous explique ou vous montre quoi regarder ne peut être qu'enrichissante. J'ai été amené avec le bateau à emmener les scientifiques faire les prélèvements. Ce contact là permet une certaine ouverture d'esprit. Et de voir ce que veut dire la différence de couleurs... C'est un drame de nos pratiques de ne pas avoir su apporter aux scientifiques ce que l'on voit, repère, pour regarder. Je ne vois plus des poissons proches des littoraux ; on a acquis des connaissances sur le littoral et c'est celui-ci qui est le plus impacté. La pollution tellurique (du continent) est celle que l'on ressent le plus. Donc disparition de l'espèce de la crevette grise. Et raréfaction des poissons dans la chaîne (pas seulement à cause du pêcheur que le poisson n'est plus là). Pourquoi pas de crevette grise : est-ce l'ensablement ? Altération physique du milieu responsable de la disparition des espèces. Fragilité des eaux côtières aussi dès qu'on va vers le large. Je me suis ensuite retrouvé avec un poste au Comité de Bassin Artois-Picardie : nous on n'avait pas de connaissance du niveau marin. Donc ce poste m'a ouvert l'esprit. Enjeu de gouvernance...

M Suméra, directeur de l'Office du Tourisme de Wimereux. 8000 habitants. Station centenaire de la Côte d'Opale, au cœur de la nature (parc naturel régional) ; au cœur d'un projet de grand site. 65% des visiteurs sont Français : NPDC, Champagne Ardennes, IDF. Beaucoup de Belges viennent désormais : zone de chalandise : pouvoir d'attraction d'un produit ; va jusqu'à Bruxelles. Impact de la tempête : difficile de faire la différence entre mousse et écume. Gros problème d'érosion de la côte. Chemin des douaniers fermé et une dizaine de villas doivent être détruites. Pb le port de Boulogne s'est installé sur le littoral et a eu un impact sur l'ensablement...

Alain précise que le paysage de falaise calcaire a un impact sur la qualité de l'eau visuelle est différente/

M Kerckhof. Observation scientifique : il y a un changement dans les perceptions : on a l'impression qu'il y a plus d'écume mais il y a depuis longtemps ça. On n'a pas de données quantitatives de longue date... Mais

on voit le phénomène de mousse plus longtemps, à des périodes différentes. Couleur grise plus importante (phytoplanctons différents) Parfois ça colle et c'est embêtant. Les gens se posent des questions... Pas mal de gens savent. Dans notre association on fait des excursions ; on regarde les fluctuations, y compris naturelles. Parfois ça commence avec une certaine odeur. Les vieux ostendais connaissent l'odeur. Après vient l'écume. Je ne sais pas si dans le temps c'était naturel. Moi je constate que de plus en plus d'animaux meurent

M Montassier : oui, on a eu des crevettes qui sont venues chez nous. La goutte d'eau qui rentre dans le sud de l'Angleterre vers la mer du Nord (reçoit toute la pollution d'Angleterre et des côtes bretonnes en raison de la climatologie. La crevette qui vient à contre-courant naturel : elles ont migré vers le Sud (merci les observateurs du milieu). J'ai vu des eaux parfois presque tropicales (eaux chargées). Dans les années 60, on pêchait les harengs au bord du littoral. Aujourd'hui le hareng est au loin : je ne sais pas où est l'impact. Parfois je constate qu'il y a une coloration verte : le glénun dit Kerckof, ce qui révèle que ces eaux-là sont eutrophisées.

Les scientifiques interviennent pour préciser que c'est peut-être lié au changement des apports d'eau ... car il y a des plantes d'eau douce.

Mikhaella pose la question de savoir si le changement de température a un impact. La réponse de Christiane est oui, mais en plus ou moins grande proportion des eaux atlantiques : et donc influence de la manière dont l'eau des rivières vont se répandre dans la mer. Il y a une synergie climats/activités humaines en termes de nutriments.

Lefèbre souligne que le vert de mai (plancton donnant cette couleur à la mer) correspond finalement à une période qui n'est plus fixe (parfois observée en février ou juin ou pas du tout certaines années). Puisque ça ne se passe pas pendant l'été cela ne préoccupe pas le secteur touristique. Il existe des phénomènes naturels mais l'accélération de ces phénomènes pose problème (idem pour changement climatique). Les ostréiculteurs de la baie de Somme comparait la mer à la machine à laver. L'hiver l'eau est sale, la mousse au moment où l'on s'en débarrasse, et après eau propre. Or, le cycle de la machine à la laver s'est un peu perdu.

Gilles rappelle que ce qui est nouveau est la durée d'existence de ces algues par rapport à autrefois.

Josette indique que la physique a beaucoup d'importance : les mousses ne se poseraient pas de la même manière qu'auparavant. Alain prend l'exemple du port de Boulogne, qui a eu des effets sur l'envasement. Le futur port géant de Calais va avoir des effets très importants...

Yves : comment voyez-vous tous la manière dont aujourd'hui c'est géré ? Sentez-vous les politiques concernés, pas concernés ?

Lefèbre : à un moment, il y a bien un constat partagé entre parties-prenantes ; mais quand besoin de prendre une décision, il faut être dans le mur pour faire quelque chose. On a des collègues qui tirent les sonnettes d'alarme depuis des années et on attend d'être dans le mur. Quand ça touche le tourisme, réveil !

**Marc Suméra : Il n'y pas d'intérêt à mettre en avant la question du risque. Moi j'ai aucun intérêt à le dire ! Jamais été associé d'ailleurs à une réunion avec des politiques ou autres professionnels du tourisme. D'ailleurs les acteurs politiques locaux ne sont pas très sensibilisés ; les chercheurs locaux ne viennent pas nous voir. On travaille plus avec le centre de voile local.**

M Montassine : le Bassin de la Seine Normandie est moins touché ; alors que le bassin Artois-Picardie est plus affecté par les effets de l'industrialisation. La problématique du milieu marin n'intéresse pas la plupart des acteurs : **difficile rencontre entre la mer et la mer ! je l'ai vu dans le Grenelle de la mer ! Il existe un enjeu de connectivité entre les milieux de bassin et le proche littoral.** Les professionnels de la mer ne sont pas concernés. La plupart des marins ont un rapport au port plutôt qu'à la vie de l'Estuaire : il n'y a presque plus de pêcheurs côtiers qui travaillaient dans l'estuaire. Il y a donc une perte de la connaissance. **Changements culturels...** Pour sauver le poisson, on tue le marin pêcheur. On ne considère pas assez les effets de milieux : la DG14 impacte sur la disparition des martins-pêcheurs.

M Kerckof confirme que les politiques ne sont pas très concernés. Je suis vu comme embêtant par les élus. Quand je donne des conférences sur le milieu marin, alors ils sont intéressés mais c'est surtout par rapport à l'entrée économique. Plus concernés par les méduses.../

....

Moment de réflexion individuel puis échanges en petit groupe avant de revenir vers les intervenants avec des questions conformes aux trois catégories évoquées ci-dessus. Le porte-parole du groupe produit une fiche spécifique. 15ms de travail dans le groupe.

\* **Gpe 1** Véronique porte-parole (Alain, Isabelle, Emmanuel)

1)- Caractère saisonnier ; disparition

2) - Conscientiser les gens en amont

- Bonne gouvernance : l'état responsable au large, les collectivités la côte ; or, comme le souligne Alain, la mer, elle, ne connaît pas les frontières.

3)Recommandations aux acteurs/*stakeholders* : soignez la communication pour faire comprendre... La question est donc : comment partager l'information / site internet ?

\* **Gpe 2** Mikhaella porte-parole

1)- Phénomène naturel qui s'est déréglé.

- Gros écart entre théorie et pratique.

- Conflit d'intérêt entre tous les acteurs.

2) Solutions : plus de lien entre les acteurs et les territoires

- Prévoir sur le long terme

- Conséquences dans les décennies à venir

- Informer et concerner les riverains, les locaux...responsabiliser

- Faire une banque de données

3) -Que les acteurs locaux fassent des rapports réguliers et que les scientifiques s'en saisissent ;

De manière synthétique, il ressort donc quelques grandes questions :

### **1) Qu'est-ce qu'on a retenu ?**

- La « saisonnalité » des élus... Difficulté de leur faire mettre sur agenda ce type de questions.

Que la mesure du changement est difficile à constater objectivement.

- Que la disparition des espèces n'est pas seulement dû aux pêcheurs, mais il y a d'autres systèmes derrière.
- Le tourisme ne serait pas affecté, mais est-ce le cas partout?
- Et dans tout ça, où en est le citoyen ?
- **Conflit d'intérêt entre tous les acteurs : point de vue politique (je ne veux pas me mettre tout le monde à dos) ; Office de tourisme : pas d'intérêt à informer la population. Le pêcheur ne veut pas qu'on lui l'empêche de pêcher. Du coup, pas de synergie, pas d'action. Véritable potentiel dans la rencontre des différents acteurs.**

### **2) Eventuelles solutions pour changer la situation :**

- Créer plus de liens France/Belgique et entre les différents acteurs ;
- Prévoir sur le long terme, sur la durée. Et avant de prendre une décision, mesurer les conséquences dans les décennies à venir,
- Informer les riverains sur les potentialités, les rendre plus actifs : concerner les riverains, les responsabiliser. Quand on dit riverains, ce sont les habitants et les acteurs du bassin.
- Etablir une banque de données de tous les acteurs locaux, un site qui recueille les rapports ou les points de vue des acteurs locaux, de leurs connaissances, de ce qu'ils veulent dire, que tout soit centralisé, appel à une recherche historique.
- **Lien et communication entre les gens du terrain et les sciences : il faut plus de communication. Il faut secouer les touristes et conscientiser les gens à l'amont.**
- **Bonne gouvernance (Alain) : la gouvernance du milieu maritime en mer c'est l'Etat et sur la terre : les collectivités locales. En Belgique, le problème est différent mais c'est la même chose. La Flandre a tendance à vouloir contrôler la mer, proche et au large alors que les problèmes viennent bien de l'amont. Question de gouvernance, de frontières et de territoire**

### **3) Recommandations:**

- Mise en commun des observations. On avait pensé à un système d'alerte à développer, des plans de crise, de situation de crise et de beaucoup plus informer les citoyens, pas seulement les riverains mais au plus large sens.

Yves pose la question aux citoyens de savoir s'ils ont des questions spécifiques adressées aux scientifiques ?

- **Isabelle : permettre la communication large aux citoyens, adapter leur langage pour être le plus compréhensible possible. Transmettre les connaissances entre les différents acteurs. (Mikhaella)**

- Déterminer les causes d'apparition et de disparition d'espèces. Données historiques, de terrain, scientifiques, pour les scientifiques fassent appel aux données de terrain,

- Et que les acteurs locaux aient l'obligation de se renseigner, qu'il y ait un support. Quelle information et comment la donner? Thématiques ciblées. **Comment partager l'information pour que ce soit accessible au public. Site internet où on puisse aller voir.**

- **Recommandations aux autres acteurs : que les acteurs locaux fassent des recommandations régulières.**

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Puis les 4 « experts » sont invités à répondre et à réagir.

**Réactions peu rapides. Moment de flottement au moment du passage de parole. Les experts font d'ailleurs remarquer le caractère un peu large des propositions des citoyens**

Montassine : Attention à l'information qui est de la désinformation.

Lefebvre dit la plupart des choses mentionnées dans l'exposé du problème, c'est : quel usage ? Or, par exemple, il existe le rapport annuel de l'Ifremer. Attention c'est compliqué je ne sais pas l'utiliser. Comment le rendre utilisable ?

**Complexité : Discussion entre Lefebvre et les citoyens qui disent justement que c'est souvent compliqué etc. Et lui de dire oui mais c'est bel et bien complexe. C'est pas Yann Arthus-Bertrand ou Nicolas Hulot. Personne ne dit demain je fais une transplantation cardiaque. D'où le problème science rapport profane/experts**

**Opérationnalisation difficile :** la communication et le slogan dont parle les citoyens : Lefebvre dit oui mais ça c'est du business. On n'a pas le temps de faire ça et ce n'est pas le cœur du problème.

Suméra : complexe, Cahiers des charges compliqué. Voyez par exemple si vous vous transformez en touristes alors que vous êtes des scientifiques.

Question des catégories d'acteurs. Confusion des rôles ?

**En somme, les conclusions, remarques et adresses des citoyens sont assez larges, pleines de bon sens, mais se heurtent donc objectivement à la complexité du système. Les enjeux clés sont transposables à d'autres politiques publiques : information, partage, appropriation...**

**Au cœur du projet *Aware*, ce moment de rencontre entre citoyens, scientifiques et acteurs impliqués par la gestion des problématiques de l'eau reflète bien la difficulté de construire une situation de compréhension réciproque et de coopération au regard des complexités de l'objet et du système d'action concernés.**



## 7 Table ronde 2 : Cadre politique, légal et réglementaire

Fanny présente les intervenants, rappelle l'objectif de la TR et souligne que les intervenants répondront à ses questions dans un premier temps.

Un élu, Un ministère, une agence de l'eau, un économiste spécialisé sur les questions d'environnement

Pascal Maret (Agence de l'eau Seine Normandie)

Michael Kyraramarios (

**Michael Kyraramarios** service environnement marin créé au sein du Ministère. Besoin de gestion et demandes citoyens qui ont augmenté : plus d'utilisation des bassins et des espaces marins et donc conflits d'usage. Notre service travaille notamment sur la qualité (Directive-cadres sur l'eau) ; surveillance des pollutions et lutte contre les pollutions. Nous sommes 11 personnes, et donc on travaille avec les autres, on cherche des coopérations, des collaborations, notamment pour la mise en œuvre. Nous sommes des aiguilleurs et coordinateurs plutôt que des producteurs. Peu d'instruments disponibles car les compétences sont partagées entre niveaux (fédéral et fédérés) et assez difficile d'apporter une cohérence à une politique (ex : directive nitrates). Nous tenons un langage de tolérance pour contre-balancer des options fortes. Notre message : besoin de mise en perspective, distinguer les vrais des faux problèmes, calculer les avantages et les inconvénients. Mais les politiciens changent souvent et il y a donc besoin de recommencer. Nous travaillons sur la mise en relation des différentes échelles. Je pense qu'on dispose de bonnes structures mais le problème provient du comportement des acteurs dans les structures. Je ne peux pas vous dire ce qui est exactement un problème (parfois et souvent des procédures et des problèmes procéduraux ; trop souvent dans les procédures). Dans les faits, le suivi et les procédures ne sont pas toujours en cohérence avec la réalité. Il y a aussi des rencontres favorisées avec le public et des associations (dans le cadre du Guichet d'Aarhus), l'établissement d'un guichet d'information, visant à permettre l'accessibilité des données publiques ou produites avec des données publiques. C'est une convention et une obligation de répondre aux questions posées par le public. Quant à la zone marine protégée, elle est définie par rapport à des critères scientifiques, et on ne peut pas être influencé par les critères socio-économiques. Organisation de conférence d'information auxquelles ont participé différentes parties-prenantes, dont les citoyens, les pêcheurs, les élus locaux. En ce qui concerne la consultation européenne sur la stratégie marine européenne, le nombre de citoyens ayant répondu 124 sur 450 millions potentiels, il y a un manque d'intérêt flagrant de la part des citoyens. Les choses bougent mais ça prend du temps (incinération de déchets en mer, coulage de plates-formes pétrolières), mais sensibilisation de plus en plus forte. La question qui demeure est le seuil d'efficacité ? Quel pourcentage du message est retenu par le public ? On tend à passer du citoyen-spectateur au citoyen-acteur.

**Maret :**

Les Agences de l'eau nées en 1964 - Etablissement public de l'Etat mais ce sont les usagers (collectivités, usagers privés et professionnels, et un petit quart de représentants de l'Etat, à peu près tous les ministères (agri, éco, transports, santé, défense, finances, etc.) Agences de l'eau fondées sur une structure de gouvernance. Deux ou trois agences concernent notre bassin : Petit bassin Artois – Picardie ; Meuse-Rhin.

Le Rôle : financer la politique de l'eau (épuration, barrages, agricole, protection de la ressource en amont par travail en amont sur le bassin versant). La question du Patrimoine de l'eau : Directive-cadre sur l'eau ; schéma directeur d'aménagement et de gestion des eaux. Définit les actions à mettre en œuvre pour 2015. Document désormais élaboré tous les 6 ans. Le SAGE est opposable à toutes les décisions publiques. Un maire, l'Etat ne peut pas prendre une décision si elle contredit le SAGE.

L'agence de l'eau en France est un établissement public mais gouverné par les usagers de l'eau. Vouée à disparaître une fois la mission terminée, mais aujourd'hui existe toujours (depuis 45 ans). Il s'agit d'une structure de gouvernance, 180 membres sur le bassin Seine-Normandie et au total, il y en a 6 en France. Le rôle est de financer la politique de l'eau et donc de prélever des taxes pour l'utilisation de l'eau. Autre rôle, l'élaboration de la politique de l'eau sur le bassin versant définition des mesures à prendre pour 2015. Les documents publiés tous les 6 ans sont opposables aux décisions de l'Etat mais pas au tiers (particuliers).

Un grand programme (PIREN SEN) réunit beaucoup de partenaires de l'eau pour un travail de réflexion servant de base à la rédaction d'un document. La communication vers le public a été proche de zéro, on s'est concentré sur la résolution des problèmes, par ex. changer la couleur de l'eau ensuite réduire la pollution des collectivités (plus de biodiversité dans la Seine). Le public ne voit qu'une chose : quel est le coût ? Un questionnaire a été constitué pour les citoyens du bassin : 70000 réponses sur 17 millions de questionnaires envoyés. La conclusion a été : on veut un milieu naturel de qualité et un coût plus bas de l'eau. Mais la préoccupation est plutôt axée sur le coût que sur la qualité...

L'un des enjeux majeurs concerne la notion de territoire : l'environnement doit se développer de manière globale car les acteurs perçoivent les problèmes au niveau local, au niveau du micro-territoire. Il faut développer la sociologie de l'environnement. Il faut prendre conscience des réalités du terrain : il y a des acteurs avec des intérêts différents et il faut tous les prendre en compte pour pouvoir agir. Par exemple, l'abaissement de la lame d'eau dans les rivières se heurte à l'association des moulins avec son patrimoine historique qui se sent menacé...

On a beaucoup d'ambition en France pour obtenir une bonne qualité des eaux de surface en 2015. Comment peut-on comprendre l'ensemble des problématiques ? Par l'information, par l'apprentissage. L'agence a créé des classes d'eaux avec les élèves et maintenant avec des élus, des agriculteurs, etc. On emmène les participants sur le terrain pour les conscientiser. Dans la plupart des cas, c'est la destruction de leurs métiers (phytosanitaires) mais il y a des reconversions possibles. Les collectivités (agences de l'eau) sont tellement sollicitées qu'elles manquent de moyens.

Il existe toutefois des critiques importantes, liées à l'absence de transparence. Nous avons un Conseil scientifique, dirigé par un chercheur de l'INRA qui nous fait des recommandations. **La question souvent posée est : est-ce que vous vous tournez vers le grand public ? On a une grosse difficulté à cet égard...** Notre priorité a longtemps été de réduire la nature des problèmes : on n'avait donc pas besoin de communiquer avec le public. On a réduit la pollution : on est passé de 2 à 32 espèces dans la Seine. Mais le public ne parle que d'argent... La station d'épuration d'Achères est payée par le prix de l'eau. **Les documents produits sont souvent complexes.** Le document de 174 documents pose un problème d'**accessibilité**. **Nous avons fait un questionnaire en 2008 sur l'eau : 1 million d'envois, 70000 réponses, 100000 réponses internet... Pour un coût de 2 millions d'euros. Nous voulons une eau de qualité, nous voulons que le prix de l'eau baisse : c'est évidemment contradictoire.** Force est de constater que nous avons une mentalité latine : l'environnement c'est bien chez les autres !

## Marc Lipinski

La gouvernance de tout ce système est donc complexe. Les régions en France ont peu de pouvoir (transports commun, lycées, formation pro). Pas de compétences obligatoires sur l'eau mais on ne peut se désintéresser de la question. La Région s'occupe de beaucoup de choses mais avec peu de moyen : eau, environnement.

Nous avons fait une conférence de citoyens sur les nanotechnologies en 2006. L'idée était de voir avec les citoyens si ça valait le coup ou pas. De leur faire produire des recommandations. On s'était engagés à répondre. On a amené à la même table les citoyens et les scientifiques en amont de la décision politique du Conseil régional sur le soutien ou pas de cette thématique. 16 citoyens ont travaillé pendant 3 mois sur ce qu'il faut faire ou ne pas faire en la matière. Formation un samedi par mois puis recommandation. Les recommandations ont été en partie suivies. **Si on n'est pas formé, ça prend du temps d'élaborer une recommandation et de savoir qui est compétent** ; et donc si le conseil régional était en mesure de mettre en œuvre ces recommandations. **Donc des citoyens auxquels on donne des moyens et du temps, peuvent comprendre des problèmes complexes.** Les interactions entre politiques et ONG sont très bénéfique, mais il faut y consacrer du temps pour s'approprier la question et approfondir la réflexion. Dans l'idéal, la décision politique se prend sur des critères objectifs, mais en réalité, la place des lobbies est forte. Le temps que chaque partie consacre à ces thèmes est différent, les citoyens ne peuvent agir qu'après leurs occupations professionnelles alors que les lobbies font que ça toute la journée. Comment donner plus de pouvoir aux citoyens ? L'information, les médias, l'accessibilité des données, en aidant les citoyens à se former, à acquérir de connaissances et compétences en collaboration avec les scientifiques. Souvent le personnel politique est celui qui freine les évolutions (ex: diminution de la vitesse dans les agglomérations).

**Bertrand Hamaide** : économiste de l'environnement : il met un prix sur des choses qui ont une valeur. Le but est de mettre ce signal et cela change l'équilibre de marché. Cela met en évidence l'importance du passager clandestin. La base d'un économiste : travailler sur les grands agrégats économiques. La question majeure est: qu'est-ce qui gouverne les choix ?

En ce qui concerne la croissance économique, la question est : y a-t-il un lien avec l'environnement ? Il y a à cet égard 2 écoles : a) Pas d'antinomie possible entre croissance environnement : il faut d'abord se nourrir, une fois qu'on a plus d'argent on fait plus attention à l'environnement et on désire un milieu plus propre ; b) le Club de Rome - *Halte à la croissance* : Moins de croissance est mieux pour l'environnement. La base de la production ce sont les ressources naturelles. La destruction des ressources mène à un clash et à un appauvrissement des populations, il faut donc éviter la croissance.../ La vérité est au milieu de ces deux écoles. Comment prend-on une décision politique en mettant en relation économie et environnement ? L'économiste peut établir les effets de tels choix politiques. Les taxes sont par exemple des outils incitant le comportement des citoyens.

Il existe aussi un concept de gouvernance économique des communautés: un bien public est mal géré s'il est géré par le public. Comment bien le gérer? En formant une coalition assez grande pour se faire entendre et mieux gérer. Voilà comment nous souhaitons intervenir et proposons de résoudre un problème (éviter le passager clandestin qui évite ses responsabilités). C'est différent d'une association car on gère dans ce cas dans une optique de prix. Les décisions qu'on prend sont elles les meilleures ? La réponse est plutôt non : mais ce n'est pas grave car on a déjà trouvé une solution. On utilise les biens publics, et donc il faut justifier la raison pour laquelle on dépense l'argent public. Si on fait une analyse

coût-bénéfice, on ne va pas dire ça ce n'est pas rentable mais on va recommander une décision qui a plus de *return*.

Marc Lipinski intervient : sur quoi porte le choix ? On aimerait que ce soit objectif ? En réalité, lobbys. En France naissance des plus grandes multinationales. Décision politique résultante de beaucoup de choses. Le facteur-temps est extraordinairement important... Il existe des temporalités différentes.

Il faudrait notamment garantir l'accessibilité des données publiques. Le CRIF dit oui il faudrait qu'on le fasse mais c'est très compliqué et donc cela n'avance pas ... Aider les citoyens à se former ; acquérir des méthodes, les associer à l'enquête. Pour que les armes s'équilibrent davantage. Ceux qui sont le moins bien formé : ce sont les politiques.

Le débat s'anime – consensus sur le retard cognitif des responsables politiques, les pesanteurs....

M. MARET souligne : la clé est le territoire : comment expliquer à une sucrière à Reims et au maire qu'il contribue à l'eutrophisation du Pas-de-Calais ? C'est difficile. Plus facile de travailler sur les différents niveaux ; par Cohérence écologique régionale : besoin d'abattre les ouvrages mais mobilisation contre.

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Une nouvelle séquence commence alors. Demande de Fanny pour que les deux groupes de citoyens se mélangent. Changement de groupe de travail, après quelques minutes de pause

Yves relance les questions et commente. Le problème c'est comment fait-on avec plus de gens ? Je suis pas pour la professionnalisation des politiques ; il faut donc modifier les règles de fonctionnement de ce monde là ... et renouveler les gens.

Remarques du groupe 1 aux intervenants: ( Alain, Béatrice, Ann, Emmanuel).

Les documents remis par les parties-prenantes pourraient être rendus publics.

Lipinski précise que tout n'est pas écrit !

Groupe 2 : (Nicolas, isabelle, Mikhaella, Véronique) : Pourquoi n'existe-t-il pas d'intermédiaires qui se déplacent ?

Réponse de M. Lipinski . Cet intermédiaire, c'est au citoyen de le constituer via des engagements (syndicaux, associatifs) ; ce n'est pas tant un problème de communication qu'un problème d'engagement. Moi je dirais engagez-vous !

Yves : avez-vous un conseil aux scientifiques ? Au regard de la connectivité avec les scientifiques.

Rappel de ML : **les scientifiques sont aussi dans une tour d'ivoire et le fait qu'ils soient plus au contact des parties-prenantes est une bonne chose.** Par exemple, la lutte contre le Sida a commencé dans une logique d'association de modèle : ce n'est qu'après qu'il y a eu organisation pour comprendre et a porté la volonté d'encourager la recherche.

Comme dans la session précédente, travail en groupe une quinzaine de minutes puis retour des porte-parole autour des trois questions.

**1) Ce qui a été retenu :**

### **Le Groupe 1 :**

- L'économie est très compliquée ; c'est ce que l'on trouve de plus compliqué ; on se rend compte de la complexité du système après les explications. -Le système est complexe à appréhender : les concepts d'économie environnementale, les parties prenantes dans la gestion de l'eau, etc.
- le temps qui manque et sur le fait que les politiques sont les moins bien informés, peut-être aussi les moins prêts à agir...
- On a aussi retenu l'importance de réfléchir à qui on parle : problème de la complexité de la décision et la question de savoir qui décide ? Dans la Démocratie participative aussi la question de savoir qui décide se pose.
- Question de l'échelle : il semble effectivement que plus on regarde petit, plus ça peut marcher.
- Sentiment que ce qui est le plus efficace n'est pas nécessairement ce qui est retenu. Certaines des décisions prises sont-elles les meilleures ?

### **Le groupe 2 :**

- les lourdeurs des procédures et le risque de démotivation. Par exemple, la taxe pour l'eau, il serait idéal de disposer de plus de transparence. Que finance-t-on à l'aide de cette taxe ?
- la Démocratie participative : plus il y a des gens, moins il est facile d'agir. Par contre, retenir le succès de l'approche territoriale, agir à un plus petit niveau donne de meilleurs résultats.
- grâce à l'économie environnementale, les décisions prises sont-elles les meilleures ?
- Quel est le poids des lobbys et de quelle information disposent les citoyens face à eux ? Le ministère de l'environnement belge semble peu efficace puisqu'il n'est compétent que pour une petite partie de la problématique et qu'il est difficile d'accorder les différents acteurs étatiques.
- Le temps est précieux au niveau de la réflexion et de l'action : il faut réagir vite.

### **Question 2 : *Comment améliorer la situation ?***

- Par la formation du citoyen, l'accès aux données publiques. Cela peut-être deux choses différentes : au niveau des objectifs et des moyens.
- Faire fonctionner le bouche à oreille pour sensibiliser les gens (effet domino)
- Faire des coalitions : regroupement de toutes les parties-prenantes .
- Problèmes posés en termes de transparence. On a l'impression qu'il y a un manque d'action en raison du poids des lobbies : influence et manipulation : on aimerait que ce soit plus transparent.
- On a tous suivi en Belgique un cours les deux premières années un cours d' « étude du milieu » : il faudrait intégrer les études gouvernementales, la formation du citoyen, l'accès aux infos publiques et aux enquêtes.

- Coalition /regroupement entre acteurs au sens large pour trouver une situation *win-win*. Meilleure information transversale et pallier le manque d'action par la mise en commun des acteurs
- Nécessité que les citoyens sachent qu'il y a un problème
- Penser à un point d'approche, l'affectif, les intérêts pour pousser à agir.
- Nécessité que les gens soient éclairés, critiques et engagés

### Question 3 (Recommandations)

- Favoriser une logique d'engagement.
- **Formation et information du citoyen par le scientifique.**
- Pour les scientifiques : être plus au contact des partis politiques. Les premiers modéliseraient les idées émises pas les seconds ... et non pas l'inverse !
- Valoriser la territorialisation : réconcilier les deux échelles, le local et le global. Par exemple réfléchir à l'échelle des bassins
- Forcer les élus à prendre une décision avant d'être dans le mur, anticiper.
- -Développer la notion de territorialisation et la concilier avec la notion de bassins.
- Contraindre les politiques à agir, pression du citoyen pour qu'il respecte son programme et anticiper les catastrophes.
- Les taxes de l'eau : expliquer à quoi sert un tel pourcentage de la taxe.

Question d'Yves à M. Hamaide sur la coalition.

Réponse : rappel de la théorie d'Ostrom. Quand un bien n'appartient à personne on le gère mal. Comment fait-on pour bien gérer : on fait une coalition. Gérer la ressource correctement. Si on a une coalition, voilà comment on aimerait s'organiser pour faire entendre sa voix. L'économie de l'environnement n'est pas une chose compliquée. L'économiste ne dit pas de ne pas aller vers la solution : il fait un calcul. Si l'on prend une décision, il faut juste savoir quels coûts et sur quoi est fondé l'arbitrage.

Yves : Quelles réactions avez-vous Messieurs les intervenants?

Pascal Maret souligne : nous avons des grosses ambitions, quantitatives et qualitatives, à l'instar de la démarche sur les questions émergentes (ex : nano). **Complexité très forte. Un enjeu fort en termes d'information, d'apprentissage et d'éducation.** On a créé des classes d'eau. Et on est en train d'en faire avec les élus, les instituteurs, les acteurs du Bassin. On a organisé une classe d'eau avec des représentants de champagne. Sur le terrain, je ne peux pas conseiller aux représentants d'un groupe de vente phyto-sanitaire afin de renoncer à un certain mode de production.

Michael Kyramarios : on a progressé dans les pratiques ; **il s'agirait d'arriver à donner le choix à chacun d'être spectateur ou acteur.**

Gérard Montassine : Les aides diminuent et les acteurs ont toujours du mal à finir. Moi je vous assure, rien n'est gagné ! Il existe un véritable problème de moyens.

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## 8 Table ronde 3 : Les sources ponctuelles de nutriments

Rappel des règles par Fanny . Les deux tables rondes suivantes vont se répondre. L'objet de cette table ronde est de parler des sources ponctuelles: c'est-à-dire de l'épuration et de la manière dont sont traitées les eaux. A quel coût y a-t-il une surenchère dans le prix de l'eau ?

**Olivier Rousselot** : le SIIAAP intervient sur les trois bassins. 8,5 millions d'habitants sur environ 2000 kms carrés ; recouvre la plus grosse agglomération française. 2,5 millions de mètres cubes d'eau. 5 stations d'épuration. Les rejets domestiques sont des sources importantes de nutriments Depuis la Directive DERU, obligation d'éliminer 70 % de l'azote et 80 % du phosphore. Cette réglementation induit la création de STEP efficaces. Les 5 stations du SIIAAP sont conformes sur le phosphore. Une station pas encore aux normes sur l'azote (60% du flux global, la station d'Achères. Objectif : fin 2011). Peut-on réduire la pollution en amont ? Pour le carbone provenant des excréments c'est difficile. Une grosse partie du phosphore provient des lessives et peut être diminué. L'épuration est un service public payé par la collectivité.

Attention à la différence qui existe entre eau potable et eau usée : c'est mieux de consommer moins d'eau potable pour les ressources, mais on utilise moins d'eau pour la même pollution (problèmes techniques d'évacuation et d'érosion liés au temps de séjour dans les canalisations, coût pour le traitement en fonction de la consommation d'eau).

### M. Martin directeur de la STEP

Il y a 2 stations d'épurations à Bruxelles, Bruxelles Sud (300 000 habitants construite en 2000) et Bruxelles nord (1 million d'habitants, qui date de 2007), qui traite l'N et P entre 80-85%. Avant il n'y avait rien... Tout partait dans l'Escaut.

**Bruno Rakedjian** : La Directive de 1991 alimente une mise en conformité. Elle définit des zones sensibles à l'eutrophisation. On demande la diminution des apports de Phosphore et d'azote. En France, il y a 19 000 stations d'épurations. La France a été attaquée par la Commission pour le non-respect de la mise aux normes selon la directive européenne. La réglementation en France a alors évolué dans une logique préventive : on oblige une diminution du rejet de phosphore en interdisant leur utilisation dans les lessives. Une vingtaine n'est pas encore aux normes (elles sont de fait depuis 1998 considérées en retard) ; il a fallu que la Commission se fâche pour que l'on travaille à bras le corps. Condamnation en 2004. Elles seront finies fin 2011.

Les questions suivantes sont posées : Ce passage est très coûteux ? Y a-t-il aussi un travail en amont ? La réponse : les Industriels ont changé la composition des rejets en valorisant les boues (ce qui reste toutefois difficile à réaliser en zone dense).

### **[Rythme dense, grande attention des participants]**

Yves interroge la logique économique dans le système du traitement des eaux qui privilégie le volume. Le Grenelle : fait encore baisser le taux de phosphates. La logique économique, la logique technique et la logique environnementale sont interreliées : en touchant une variable, on touche les autres. Or, on consomme moins d'eau mais on a le même niveau de pollution.

Emmanuel rappelle qu'il reste d'autres choses à traiter que le phosphore et l'azote. Il existe 43 substances prioritaires, dont la Directive 2000 pour remettre les rivières dans un bon état écologique.

Le débat part sur la consommation d'eau – et sur les économies. Tout est dans tout et il existe un problème de priorité. Mais l'investissement est de plus de 60MM d'euros depuis 1990's : ça va mieux

### **Il est donné 10 minutes de travail en collectif pour préparer les questions aux *stakeholders* ?**

#### **Questions posées par les citoyens**

- Nicolas : Directive DRU 70 % c'est quoi ?
- Alain Qu'est-ce que la diversification de l'habitat ? Refaire de la ville sur la ville, densifier ? Cela correspond aux besoins des gens qui font les réseaux
- Ann Quels sont les indicateurs de qualité ?
- Béatrice : qui est l'employeur ?
- Les données belges sont-elles disponibles ? Y a t il des indicateurs des pollutions en Belgique avant 2000 ?
- Quelles sont les informations disponibles du côté belge ?
- Pour la STEP à Bruxelles, c'est privé au public ?
- Qu'est ce qui freine la mise en conformité des STEP ?
- L'argent, les procédures administratives, le temps que prennent les travaux (5ans)
- Proposition entre sources diffuses et sources ponctuelles : quels moyens financiers sont accordés à la régulation de chaque source ?
- Fanny : qu'est-ce qui traîne ? Qui empêche d'aller plus vite ?
- Yves : au fond, quel est le problème ? Tout a l'air bien ?
- Gilles : pourquoi travailler sur apports ponctuels plutôt que sur les questions diffuses ?



Réponse : La Directive ne fixe pas d'objectifs de moyens : en fonction de la zone, sensible ou pas, on fixe des normes du % rejeté (obligation de résultat). On est alors bon selon la directive mais pas par rapport au milieu. On doit respecter les normes : ce qui est relatif n'est pas absolu, mais la réduction du phosphore et de l'azote soulage le milieu au niveau des rivières. Pourquoi ne pas aller plus loin : plus on augmente, plus les coûts sont prohibitifs ; d'où la recherche d'un équilibre... Aujourd'hui on est à l'optimum par rapport à nos connaissances et à nos capacités. D'où le reste à chercher du côté des sources diffuses.../ Tant qu'on ne l'avait pas fait à l'égard des collectivités, il était difficile de demander au monde agricole de le faire. A partir de la fin 2011, ce sera plus facile. En France, les dépenses de fonctionnement sont de l'ordre de 6,6MM / an au niveau national. 4,5 MM d'investissement par an : 3 MM sur réseaux, 1, 5 sur les stations. Dans ce contexte, la densification est une solution. Mais peut-être sera-t-il besoin d'agrandir la station. Il faut aussi veiller à l'imperméabilisation quand il y a densification : c'est pourquoi on intègre de plus en plus les logiques de réaménagement écologique. L'aménagement oblige à un double réseau. Le phénomène d'imperméabilisation urbaine et les réseaux unitaires amènent beaucoup d'eau dans les stations et qui en temps de pluie débordent et relâchent les eaux dans la rivière. Le double réseau coûte cher et est difficile à mettre en place.

Qui paie les 1,5MM ? Comment imposer à un élu le soin de faire une station ? La chaîne de décision suit... Du ministre au terrain ... On est en mesure de les faire fléchir. Le ministre a fait une lettre à tous les préfets en disant « Je vous enjoins de faire respecter... »

Yves plaisante en parlant de « L'homme qui vaut 3 milliards » à propos de Bruno Rakedjian qui évite de nous faire payer les amendes par la Commission. Soit 150 euros par habitant dépensés par rapport aux 6MM dépensés.

Question d'Yves : Combien on met sur les zones diffuses ? Et de votre point de vue, pour obtenir un meilleur dialogue entre politiques, scientifiques et gens, vous voyez une manière d'améliorer les choses ?

Olivier Rousselot répond : oui, ça existe. On a des outils réglementaires pour ; les élus nous demandent d'avoir des logiques réglementaires pour dire à la population : on est obligés de le faire. Il existe des points de surveillance

La plupart des stations fonctionnent en régie, et donc doivent être en équilibre financier nécessairement. Sinon affermage : on exploite une station qui ne nous appartient pas. Cela peut aussi donner lieu à des opérations spécifiques. A Bruxelles Véolia a investi et obtenu une concession de 20 ans. M. Maret explique les logiques contractuelles : la régie concédée se développe, ce qui permet une assistance technique. Mais on est limité au niveau technique pour arriver au 100% de purification. On a atteint l'optimum.

150 euros par an par habitant sont dépensés par l'état français pour l'épuration. Mais pour l'agriculture on est bloqué par la PAC, pas de marge de manœuvre très large dans la gestion des sources...

Fanny propose aux citoyens de leur laisser 10 minutes pour travailler. On ne remélange pas les groupes.

### **1) -Ce qui a été retenu :**

Un manque de transparence et d'accès aux données vis-à-vis du public.

70% traitement de l'azote est le minimum jugé raisonnable selon la directive mais est-ce suffisant pour un bon état écologique des eaux?

L'activité est très coûteuse pour la collectivité mais les résultats obtenus sont satisfaisants.

## **2) -Comment améliorer la situation :**

- Terminer au plus vite la remise aux normes des stations.
- S'attaquer aux sources diffuses
- Maîtriser l'utilisation des eaux de pluies
- Densifier les agglomérations urbaines, densifier les réseaux au lieu de les étendre

## **3) -Recommandations :**

- Valoriser les boues d'épuration dans l'agriculture en substitution des engrais. Mais comme elles contiennent aussi d'autres polluants, on se dirige donc vers la reconversion en matériaux de construction.
- Schématiser l'utilisation de l'eau de pluie et élargir aux autres polluants (suggestion adressée aux scientifiques)
- Améliorer la transparence sur les intérêts de chacun
- Terminer la mise en conformité des stations d'épuration.

Réponse : A Bruxelles, on travaille sur la méthanisation et ensuite l'oxydation par voie humide. Grosse difficulté : le valoriser en agriculture. Mauvaise acceptation des personnes qui sont dans leur habitat et qui ne veulent pas accepter les déchets de la ville. Cela est très dommage.

**Remarque : rien pour les scientifiques.**

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Bilan de la journée réalisé oralement :

- Très positif : Complet, épaté, enrichissant et stimulant comme la première fois, ouverture et sincérité des intervenants, apprentissage de nouvelles connaissances.
- Mais frustrations : Emmanuel , un peu déçu faute de temps pour garantir l'intégration des parties-prenantes. Manque de temps pour écrire et capitaliser. Frustration pour le temps d'échange. Pauline: stimulant et très fatigant. Trop court. Très intéressant et très dense. La gouvernance de l'eau est très complexe et besoin de temps. Besoin de savoir jusqu'où on peut aller ensemble.

En tentant d'objectiver, on voit combien la journée a permis aux citoyens de bien identifier les problèmes majeurs auxquels les acteurs du champ sont confrontés. L'animation efficace et décontractée a permis de véritables rencontres entre catégories d'acteurs qui ont bien joué le jeu.

Comme les citoyens l'indiquent, la capitalisation reste difficile à exploiter en si peu de temps : les points 2 et 3 montent souvent en généralité et sont souvent des propositions de bon sens généreuses, qui risquent de se heurter à l'état des choses et aux calculs d'intérêt des protagonistes. Le temps imparti ne permet pas une élaboration fine et pertinente d'une stratégie efficace.

9 octobre matin

## 9 Table ronde 4 : Les sources diffuses de nutriments

Même disposition que la veille.

Fanny introduit : nous passons des sources ponctuelles hier à la question des sources diffuses : ce que l'on ne maîtrise pas directement. Et donc enjeux plus larges ; dont l'agriculture

Présentation des parties-prenantes présentes. **Les citoyens sont présentés comme ayant été formés ; et pouvant poser des questions**

**Pascal Maret** : on a les moyens de maîtriser en amont, alors qu'on ne peut pas le faire sur les pollutions ponctuelles, comme on l'a vu hier.

Rappel des normes eau potable. Entre 50 et 100 de nitrates, on peut faire des coupes. Ex : le bassin Seine Normandie, les 2/3 des masses d'eau ne sont pas conformes à la directive. C'est bien l'agriculture qu'il faut considérer. Le plus grand rejet dans la mer du nord c'est la COGEMA (AREVA) à la Hague. Les problèmes qui restent : agricole et assainissement non collectif. L'agriculteur est obligé de gérer son objectif agricole en fonction de ça. Si le printemps est mauvais, les plantes ne poussent pas et l'azote est non consommé. Mais on peut arriver à les gérer s'il y a des résidus d'azote par rapport au climat : on peut les repomper à l'automne avant le lessivage de l'hiver. On recouvre le sol avec une culture (moutarde, seigle, qui permet de maintenir l'azote pour la récolte suivante). On dispose de 500 millions pour l'agriculteur. On a des conseils, de l'analyse de sol, des pièges à nitrate (ce qui coûte quelques dizaines de millions ; et donc nous n'avons pas de problème de budget). **Mais on a une politique agricole qui est dirigée par la PAC. Pourquoi ne pas proposer à des agriculteurs de produire de l'eau et de le rémunérer pour cela ! Les Allemands le font : contrat avec les agriculteurs : on travaille ensemble à la protection du bassin de captage. Piste à explorer...** Si les Allemands le font, ce n'est pas seulement un problème de PAC.

On finance des techniques alternatives, mais on y met à peine 20 millions par an.

Vouloir convertir quelqu'un au bio, c'est comme convertir un protestant au bouddhisme. On ne peut pas dire à un agriculteur de passer au bio ; c'est un choix personnel ; en revanche, la régulation de l'azote et des intrants, les systèmes de culture intégrée sont des opportunités

**M Fauchon** Véolia Eau : présente la protection des points eau. Véolia est l'opérateur qui s'occupe de la production pour 144 communes de l'IDF. On travaille essentiellement en eau de surface. 800000 m<sup>3</sup> d'eau potable par jour. Captage prioritaire, et 5 % eau souterraine. Veolia eau offre un service aux collectivités : elle peut apporter un soutien technique et opérationnel. Les opérations se sont arrêtées suite à un contexte politique dans le milieu politique seine et marne ; les élections professionnelles ont changé. Et la plupart des choses que nous faisons (démarche Fertimieu par exemple) sont devenues réglementaires (directive nitrates du 1976) et l'action de Véolia n'était plus nécessaire. Maintenant, l'opération Phytocité est très encourageante dans les collectivités pour contribuer à la diminution de l'utilisation des pesticides. L'enjeu, c'est la prévention pour diminuer l'investissement dans le traitement de l'eau potable. La question qui demeure posée est : qui est ce qui va rémunérer les agriculteurs/producteur d'eau ? On anime des démarches pour le compte des collectivités.

Précision de M. Marlet : l'eutrophisation démarre à partir de 12 mg ; la norme santé est de 50 mg ; donc norme environnementale plus sévère.

**Garcia Azcarate** : Professeur à l'ULB et conseiller à la Commission. Il rappelle qu'en 1992, la PAC soutient une agriculture intensive, et que le virage est récent suite à la baisse des prix. Quand les prix sont élevés, on va produire beaucoup pour avoir un maximum de bénéfices. Si le prix baisse on essaye de maximiser les revenus qui ne correspondent plus à une maximisation de la production. La baisse des prix rend plus compatible l'agriculture avec l'écologie et l'environnemental. On met moins d'intrants pour avoir moins de productivisme, puis que ce n'est plus ce qui convient. Vous changez l'itinéraire technique (manière de cultiver) : il ne s'agit plus de maximiser le revenu mais d'équilibrer la production. On parlait du Club des 100 quintaux / hectare : certains se sentent encore puissants pour cela. Mais la mentalité ne se modifie pas ainsi, il faut modifier la manière de cultiver pour diminuer l'apport d'engrais. Les coopératives tirent leurs revenus des phytosanitaires et pas de la vente du blé des agriculteurs. Changer la mentalité du monde agricole, de logique. Mais les coopératives, leur argent elles le font sur les phyto. La coopérative a une logique différente de celle des agriculteurs. Les coopératives font des réductions sur les achats d'intrants. La coopérative doit avoir du cash-flow, et cela passe par les engrais plus que par la collecte. Donc tension sur les nitrates/intrants : c'est là qu'est le problème. Plus les habitudes des agriculteurs qui y ont tout intérêt. On donne des aides pour compenser une baisse de prix, mais dans les faits se poursuit une gestion en bon père de famille. Les démarches qui étaient payées sont maintenant obligatoires sans dédommagement. Cela génère des tensions. Pour filtrer les nitrates, les bandes enherbées sont maintenant très répandues. Contradiction dans la situation dans laquelle on met l'agriculteur : réductions des intrants, réduction des coûts, mentalité de l'agriculteur. La PAC avec ses nouvelles mesures, découplage (prime sur le type de production et pas sur la quantité) écoconditionnalité, etc, engendre un changement dans la manière de produire... On peut parler d'un despotisme eurocrate illustré par la commission européenne. La première PAC est française, ensuite on a été à l'encontre de l'influence française... La PAC : tout dépend de la fixation des prix... La PAC s'efforce désormais de corriger cela : Eco-conditionnalité. Rappel avant 1992, aide dépendait de la quantité produite ; aujourd'hui découplage. Application du pollueur –payeur : aides conditionnées à ce qui est cultivé en bon père de famille. D'où réflexions sur mesures d'aide gouvernementale : ex les bandes enherbées le long des rivières pour éviter l'entrée des nitrates dans l'eau.

Ramelot. Nitrawal est une société de production qui se consacre à la distribution et au traitement des eaux en Wallonie. Financée par la Région wallonne, en contact direct avec les citoyens et les agriculteurs, elle sert de relais pour garantir la diminution des nitrates dans le cadre du PGDA (transposition de la directive NO3). *Demand driven*, mais il s'agit d'une obligation légale et donc les agriculteurs s'adressent à Nitrawal pour obtenir un soutien, un suivi, un encadrement. Des plans de fertilisation sont rédigés avec l'agriculteur pour le conseiller sur les doses à mettre sur son terrain. Il y a 16 000 agriculteurs wallons concernés et environ 7000 contacts. Depuis 2008, la Région wallonne effectue des contrôles APL (Azote potentiellement lessivable). Il s'agit d'un contrôle qui est fait par l'administration recherchant une obligation de résultat et non pas juste la mise en œuvre de la législation. Le contrôle incite les agriculteurs ne respectant pas les normes à rentrer dans un cycle de 4 ans de contrôle et d'assistance. Si mauvais résultat, amendes... La structure emploie 25 personnes et existe depuis 2000, et donc pas assez de recul pour faire le bilan. Plusieurs installations peuvent être faites autour d'un captage, on essaie de collaborer avec les agriculteurs et les fournisseur d'eau, on trouve des solutions communes sur base volontaires sans incitants financiers avec une conscientisation et partage d'un objectif collectif : avoir une eau de qualité. Je ne sais pas comment cela se passe en Flandres. Nous en sommes à la troisième année.

Erik Gobard explique son histoire. 1 siècle d'exploitation familiale. Il applique le Grenelle de l'environnement à son exploitation de Seine et Marne. Dans la ferme familiale, on cultive 50% de blé, de la betterave sucrière, du lin textile et des semences potagères. PAC dans les 60's a changé l'équilibre interne (plus de prairies et de vaches. On est passé dans les champs. En 1905, 31 personnes. Puis gains de productivité incroyables. Paroxysme de l'utilisation des engrais : 80's – 90's : il y avait des concours à celui qui utilisait le plus d'azote dans les coopératives. 1992 grosse claque. Utilisation des pesticides a baissé de 50 % - baisse moindre sur les nitrates. Pour l'azote plus compliqué : plancher en 88-92. On fait des échantillons de terre, et on nous calcule le taux d'azote à la sortie d'hiver pour limiter. 3kgs d'azote pour faire un quintal de blés. Donc on a sélectionné des blés autrefois qui résistent bien à l'azote. On pourrait changer d'espèces de blé. 170 unités d'azote, pour 100 quintaux. Les Chiliens jouent sur des variétés. Proposition : il faut travailler sur des variétés qui réagissent mieux à l'azote. En 2005 on constate une diminution de 50% des quantités de phyto utilisées. L'agriculture raisonnée : on n'utilise que ce dont les plantes ont besoin, on procède à un échantillonnage des terres à la sortie de l'hiver pour faire le bilan de ce dont on aura besoin. Cela a permis de baisser l'utilisation d'intrants de 22% sans baisses de rendement. Pour produire un quintal de blé, 3kg d'azote sont nécessaires. Une solution proposée serait de sélectionner/créer des variétés qui réagiraient moins à l'azote. Les objectifs du grenelle sont une baisse de 50% de l'utilisation des Phyto. Mais il faut une dose minimum efficace ou passer à l'agriculture bio pour une partie de l'exploitation. Pour fertiliser les terres, on plante des légumineuses (luzernes, trèfles,...). Économiquement, c'est rentable, on gagne plus d'argent et l'agriculteur fait 42 000 euros d'économie sur l'achat d'intrants. La luzerne est revendue et utilisée pour fourrage des chèvres. Les cours mondiaux du blé influencent beaucoup les choix de types de production. En 2009, lorsque les productions ont été très bonnes, le prix du blé a baissé beaucoup et les agriculteurs sans l'aide de l'Europe auraient été en difficulté financière. C'est alors que beaucoup d'agriculteurs ont pensé à la reconversion. Une fois que les cours mondiaux ont remonté, cette volonté de reconversion a presque disparu. 5 ans sont nécessaires à une conversion, l'aide de l'UE et ensuite le soutien financier en fonction de la politique de chaque région. Le coût du bio est 0,05 euros plus cher que le conventionnel, le reste c'est le marketing qu'on paye. Le constat est que le compactage des sols fait suite à la disparition des micro-organismes ; donc si on les restaure, on aura besoin de moins d'intrants chimiques. Mais la prise de conscience est déjà là. Et la mise en œuvre

d'une technique culturale simplifiée, culture sans labour qui aide à la vie des microorganismes est nécessaire. Avec la directive nitrates, les seuils d'achats de nitrates est de 200Kg par hectare. Individuellement les agriculteurs sont d'accord de mettre moins d'intrants et en collectivité, les techniciens des organismes de gestion, ne sont pas d'accord et tentent de freiner les ardeurs. Le Grenelle de l'environnement : compromis minimum. Baisse de 50 % des produits phytos et de 20/30 % me semblent pas jouables. Il faut une dose minimum. Ne faut-il pas passer au bio ? Je suis en conversion bio à hauteur de 40%. Aujourd'hui on gagne plus d'argent en bio qu'en conventionnel. J'ai baissé mes intrants de 43000 euros. La luzerne bio... Avec la crise de 2009, tout le monde s'est dit il faut produire autrement. Mais avec la crise en Russie, le conventionnel est reparti. C'est la crise du conventionnel qui encourageait les autres...

Fanny pose la question à tous les intervenants : pour vous, c'est quoi les solutions pour réduire les sources diffuses de diffusion diffuse ?

Marlet : agriculture intégrée : revenir vers plus d'agronomie ; ne pas traiter systématiquement et traiter quand nécessaire ; des territoires et des mesures adaptées – réduire les difficultés. Payer pour la fabrication de l'eau.

Ramelot : renforcer ce qui existe aujourd'hui

Azcarate : renforcer un conseil indépendant aux agriculteurs hors grande boîte. Encourager, plus de recherche : on n'a pas les instruments pour faire le moins 50%. Renforcer les conseils aux agriculteurs indépendants.

Fauchon : pb de maître d'ouvrage sur es opérateurs de prévention. Pb des porteurs de projet. : ne sont pas toujours les mieux placés.

Gobard : agriculture intégrée exige beaucoup de mécanisation – moi je dis il n'est pas fou de mettre des produits chimiques en moins et de demander 20% en bio c'est possible. Sol de plus en plus passoire. Reconquête du vivant des sols. Le sol qui soit de meilleure qualité pour devenir une véritable station d'épuration.

**Yves : prendre un peu plus de temps ; on est au cœur du problème ; prenez un peu de temps individuel d'abord ; on allonge le temps de réflexion... Je vous propose que chacun prenne 10 mns pour reprendre individuellement, sur ce qui a été dit et ce qui n'a pas été dit. On donne un signal ensuite et on travaille en groupe.**

#### Question 1 : ***Ce qui a été retenu***

Groupe 1 Jean-François porte-parole

- On retient que c'est à prendre très en amont, grands espaces et effets sur une grande période ; donc c'est lourd à piloter...
- Un modèle économique et environnemental à trouver. On trouve que le système est très régulé, pour le meilleur et pour le pire.
- On entend qu'il y a un besoin de nutriments de toutes façons. Bon...

- Des progrès à accomplir et on est rattrapé (ex sols passoirs) ; aller plus loin. Diversification des cultures ; comment résoudre question de l'appauvrissement des sols. Le rôle de la recherche évidemment important.

- Rôle fondamental de la recherche

Gp2 : porte-parole Emmanuel

- On a retenu la situation perverse impliquée par la PAC : a complètement transformé les exploitations, et pas pour le mieux. Et ce n'est pas un constat.
- On n'avait pas conscience de la différence des normes environnementales et sanitaires !
- Les plus grosses exploitations en ont le plus profité.
- Fossé entre les objectifs du Grenelle et les réalités des terrains. Si ce constat est vrai, alors question de méthode. Mais possible si plus de recherche, sortir du cadre etc. Donc question de méthode.
- Poids du marché
- Pas d'incitation assez forte pour avoir un changement
- Réticence des gens à changer de mentalité

## 2) Question 2. **Comment améliorer :**

Groupe 2 Emmanuel

- Une meilleure prise en compte des exploitations par la PAC.
- Idée qu'en relocalisant l'agriculture, on sort de cette logique. On gagne sur les transports, question des intrants. Meilleure prise en compte des petites exploitations par la PAC, on reviendrait alors à des échelles plus raisonnables et plus proches du consommateur.

[Discussion d'un groupe à l'autre sur ce que les uns et les autres proposent.]

- Surproduction très nette des céréales ; donc relocalisant ; question des circuits courts (mais discussion par groupe 2 et autres intervenants : balance commerciale)
- Sortir du nucléaire ? Cf La Hague fait bcp rire idée des verts
- Passer à un niveau raisonné d'une agriculture bio : en fait c'est une sorte de retour à agriculture d'avant. Surtout en utilisant les recherches agronomiques. Sans intrants

Groupe 1 Jean-François

- Accompagnement limité somme toute : aller plus loin
- Mesures techniques pour reconstituer les sols. On a perdu toute la vie organique, on a donc perdu

- Conscientiser les chaînes d'acteurs et accroître le volontarisme (par la contrainte légale)
- Question des manques de moyen (Cf système APL et Aquawal)

### 3) **Recommandations :**

Jean-François :

- sensibiliser les agriculteurs à des systèmes économiques plus équilibrés : qu'est-ce qu'il pourrait y avoir comme incitations ? Déverrouiller les freins ? Comment on rentre dans le modèle ?
- Communication plus imagée : ex sol station d'épuration image frappante
- Techniques culturale simplifiées : plus de labour et donc on met moins d'intrants
- Aux scientifiques : chercheurs réfléchissent plus de manière interdisciplinaire, transversale
- Optimiser les systèmes : besoins / entrants

Emmanuel :

- Redéfinir le rôle de l'agriculteur et lui redonner une place. Sensible à l'idée producteurs d'eau de qualité via l'exemple de M Maret
- Définir objectifs clairs et identifiables : smart et que l'agriculteur soit associé à ces retours – valorisation, pédagogie, responsabilisation.
- Rendre le contrôle de l'agriculture aux agriculteurs. pour le stimuler à continuer et le responsabiliser : le contrôle des semences, possibilité de réutiliser les semences qu'on a cultivé
- Faire le lien entre grenelle de la mer et celui de l'environnement. En région wallone, les agriculteurs ne savent pas qu'ils ont un impact sur la mer du Nord, créer un réseau commun des pêcheurs et agriculteurs.
- Agriculture et gestion maritime intégrées.
- Gestion intégrée des zones côtières : "Faire se rencontrer l'homme de la mer et l'homme de la terre"
- Faire lien entre Grenelle de la mer et Grenelle de l'environnement.
- En ce qui concerne la Belgique, travailler entre régions ! Les remettre en réseau.
- Pour les scientifiques : attention à la prise de contrôle du vivant par les grandes sociétés : ça paie bien ! (rires)
- Mettre en réseau les organismes régionaux de gestion
- Renforcer le partenariat entre sciences et agriculture.

S'ensuit un grand débat ... sur les odeurs, les contraintes. Remarque de M. Gobard : individuellement tout est ok, mais les organisations syndicales ne suivent pas. Défense de la PAC



par Gobard : on s'est affranchi des travaux difficiles, c'est plus facile, et possible que par la PAC. L'avenir de mon exploitation dépend des prix mondiaux

Invitation aux Réactions. **Maret fait remarquer les limites du volontariat et de l'importance de pouvoir donner un coup de pied aux fesses. Si pas de reprise en main des agriculteurs, peu d'impact.**

**Question comment ça pourrait marcher : l'idée d'un jardinier-paysagiste pas crédible. A quel prix ?**

Ramelot : prône démarche volontaire sur un territoire. Dépend de l'envie, sans imputs, partages d'expérience.

**Bcp de reformulation des questions et des informations en réponse par Yves.**

Il y a de multiples solutions : refaire de la forêt, certaines plantes, bref nouvelles stratégies : protéger le point de captage ok, c'est la gestion de la pollution diffuse Pb de rémunération de notre travail. Accélération de toutes ces questions.

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**Le bilan est toujours globalement positif, avec une vraie implication collective et des échanges libres et intenses de toutes les parties-prenantes. On fera remarquer que les acteurs sont assez largement focalisés sur les connaissances techniques et pas tant sur les enjeux politiques, ni sur les réflexions de la DG Recherche ou DG agriculture. Il est à noter aussi que si la rencontre ressemble un peu à une formation-action, la question de la nature de l'accompagnement, de l'aide à la capitalisation n'est pas nécessairement formalisée ou explicitement cadrée. Il s'agit en l'occurrence d'un apprentissage collectif, et chacun, animateurs, protagonistes et citoyens, découvrent au fur et à mesure... Les animateurs Yves et Fanny sont les garants d'une mise en cohérence des questions et des réponses et reformulent souvent, de manière d'ailleurs utile en l'occurrence.../**

## Verbatim 9 après-midi Préparation de la Conférence locale

Dunkerque servira à présenter les recommandations au niveau local. Le Projet Aware en avril sera l'occasion de faire des recommandations au niveau avec les autres. On se retrouve le 8 juin soir et 9 Juin : c'est vous qui présentez.

L'idée à Dunkerque est de mettre en débat les hypothèses retenues par les différentes journées de travail. (Seine Somme esacaut)

Yves demande quels sont les sujets à discuter à Dunkerque. Deux principaux objectifs :

- 1) arriver à des recommandations pour améliorer la gestion de l'écosystème côtier (connectivity)
- 2) Fournir aux scientifiques des scénarios pour analyser/mobiliser les scénarios. A vous de trouver les leviers.

1 Réflexion sur méthode

2. Sur les recommandations

Mikhaella : réflexion sur le modèle qu'on a construit puis discussion avec les scientifiques

**Intervention de David : allez-y, bousculez les scientifiques pour les inviter à penser les questions autrement ; et par ailleurs messages clés en cherchant leur opérationnalité... Expliquez vos choix, vos motifs ; faire en sorte que les connaissances soient partagées : ça veut dire quoi ? Résistance des scientifiques : on ne pourra pas tout faire. Contraintes matérielles ou scientifiques. Les résistances a priori sont très fortes.**

**On assiste alors à un certain flottement parmi les citoyens qui s'interrogent sur la commande qui leur est faite. Dans quel ordre on commence ?**

Yves et Fanny précisent les questions : Quelle image du monde on veut créer ? Quels changements vous voulez voir ?... Dans le but d'améliorer l'environnement côtier. Cela interroge les rôles des uns et des autres. Le passage en réseau. Commencer par les recommandations qui portent sur le système physique. ..

**Emmanuel dit : on est aveugle. On ne voit pas on ne sait pas nos compétences.**

**Gilles : ça ne va que dans un seul sens. On ne peut pas dire : pour arriver à une qualité, on doit aller ainsi. Les Coûts directs pris en compte. Niveau d'hypothèse à émettre. [Modèle jamais présenté à ce jour.] On balaye toutes les réponses déjà données et on voit comment on pourrait procéder.**

**Mikhaella propose de travailler plutôt sur les plans d'action. Histoire de catégoriser les leviers d'action, pour travailler par domaine, pour voir sur quoi agir.**

Discussion entre Mikhaella et Emmanuel : la hiérarchisation au risque de l'enfermement ?

Force est de constater une certaine timidité des citoyens. Confusion sur les rôles des uns et des autres, sur les difficultés à aller de l'avant.

**Question que JE ME POSE / POURQUOI NE PAS demander aux scientifiques s'ils peuvent en répondant donner des arguments à la thèse. Ce qui manque c'est la connectivité entre les acteurs.**

**Plusieurs chantiers ressortent :**

**Mise en réseau des données : donner – capitaliser – partage**

**2 niveaux ; connaissance (on sait quoi ?) et argumentaire (ce qui permet de prouver) ; Info/communication**

**-Transversalité : En tant que citoyens , nous habitants citoyens nous avons vu que la réconciliation entre mer et terre est possible.**

**Faites bouger les lignes ! ne pas en rester au niveau des généralités**

**Grande question de méthode qui a posé la question du rôle des uns et des autres !**

Yves voulait afficher les feuilles où les idées ont été posées. Discussion et flottement. Emmanuel va ouvrir la fenêtre. Béatrice dit bon, faudrait que ce soit plus participatif. La plupart des questions lues sont peu destinées à des questions scientifiques.

**Quelle dynamique collective ? Grosse question de savoir pourquoi on travaille ? Résistances de beaucoup à l'idée de faire une coalition (l'ennemi existe-t-il ?) Comment mobiliser ? Installer une dynamique. La notion de scénario est-elle partagée ? Le débat est retombée en détails : ex informer sur la facture d'eau. La manière dont l'eutrophisation peut-être traitée est globalement contournée.**

Quelques questions ressortent : Faire du lien entre les politiques. Où investir l'argent ? Pour que l'utilisation des ressources pour agir là où c'est le plus efficace.

**[Toute cette phase de repérage et d'identification des principaux scénarios est à nouveau une phase d'explication réciproque, plutôt que comme une phase pré-opérationnelle ou stratégique . Faut-il aller plus loin dans l'apprentissage de la compétence politique des citoyens ? Les aider à mettre en forme, mettre en action leur désir d'intervention. ]**

La dynamique des scénarios correspond à la volonté de mettre en scène la réponse immédiate et la réponse dans 20 ans (effet minimum, effet maximum). Est-ce qu'on peut arriver à ce que cela n'augmente plus ? Enjeux de comportements individuels. Et autres questions à considérer : qui écrit le scénario ; comment optimiser la rencontre ; qui met les sujets sur l'agenda ?

**Citoyens demandent des dates, une évolution. Ils posent la question de savoir qui porte le débat ?**

**Sur les comportements :** que se passe-t-il si. Si 50% de consommation de viande en moins, ça fait quoi ?

**Gilles dit ce n'est pas légitime de montrer ça. Josette le rejoint sur cette ligne. Mais Emmanuel rétorque : Moi ce qui me gêne dans l'affirmation de Josette, c'est que je trouve pertinent ce que dit Nicolas de mettre en perspective. C'est pour tout comme ça. Le constat peut être fait qu'il existe ici un écart entre les demandes des citoyens et la manière dont les scientifiques sont concernés**

**[On mesure ici combien la posture des uns est bousculée par les questions des autres, et que la confusion des rôles légitimes prévaut. De manière somme toute très classique, les scientifiques rappellent que la manière dont ils ont construit leur objet et leur modèle n'est pas mobilisable pour traiter les questions des candidats. La question méthodologique ici posée est : à quelle fin la coproduction est-elle**

**intéressante. La réunion de Dunkerque pourrait alors être l'occasion d'identifier quels scénarios intégrés seraient les plus à même d'être travaillés, d'être présentés à Bruxelles pour influencer la Commission. Cela suppose que les universitaires travaillent avant Dunkerque...]**

Trois niveaux de sujet sont proposés

1<sup>er</sup> sujet ; information/transparence/communication

2<sup>ème</sup> sujet : interdisciplinarité, dynamique, effet domino, comment le système fonctionne

3<sup>ème</sup> sujet : sources diffuses

Et chaque fois constats/recommandations.

**Réaction : Nous en tant que citoyen nous formulons les recommandations suivantes... Ce qui est jugé difficile. Cela pose la question du degré d'implication d'Affaires publiques en fonction des finalités assumées.** Cela pose la question du rôle de demain. Projets Construction d'un rôle et construction d'outils. La question est : quelle construction d'un rôle ; en termes de mode projet, qui dit quel objectif précis, quel mode d'action ; quel logique d'intermédiation ?

Jean-François demande maintenant qu'on y aille en prenant en compte les remarques de David.

**Yves : Allez là où vous vous sentez en situation d'agir.**

Après 5 minutes de pause, pendant laquelle Fanny et l'équipe d'Affaires publiques ont préparé les paper boards, petit moment de flottement

**1° Agir sur les sources diffuses et la consommation :**

**Structure de la conférence :**

1° Présentation des études de cas des 3S

2° Les citoyens présentent des recommandations sur la manière d'améliorer la gestion côtière

3° Résultats des scientifiques obtenus sur base des scénarios modélisant les effets des modifications fournis par les citoyens

4° Discussions avec les stakeholders

Faire intervenir l'originalité du processus et l'importance de l'action des citoyens.

**1° Agir sur les sources diffuses et la consommation :**

Sources diffuses :

-Agriculture plus organique : quel impact sur le lessivage des sols et sur la biodiversité du sol (scénario à affiner)

-L'agriculture bio est accompagnée d'un déplacement des élevages au plus près des cultures : est-il possible d'imaginer un scénario sans bétail ?

-Diminution de la consommation de viande

-Lagunage, zones humides, protection des captages

#### Sources ponctuelles :

- Densité démographique et répartition des habitats : quelle efficacité ?
- Traitement de l'eau à 100% en matière de nitrates et phosphore (raisonnement par l'absurde qui supportera l'argumentation de l'utilisation des ressources locales)
- Utilisation de l'eau de pluie ?
- Tenir compte du territoire
- Mettre en évidence un scénario avec les évolutions progressives au cours du temps.

Constats : Sentiment qu'il n'y a pas assez d'information accessible pour mieux comprendre l'état de l'environnement.

- Sources ponctuelles : a-t-on atteint la limite raisonnable ?
- Peur et craintes par rapport à la privatisation
- Qualité de l'eau est une question plus vaste et complexe, elle ne se limite pas à l'eutrophisation mais touche aussi d'autres polluants.

#### Recommandations:

- -Davantage de vulgarisation de données impartiales, par des voies directes et par l'intermédiaire de mensuels.
- -Manque de transparence de l'utilisation de l'argent du consommateur pour le traitement de l'eau : il faut pouvoir forcer les organismes à montrer leurs chiffres.
- -Pas de transversalités des données : il faut les mettre en commun
- -Il faut connaître au concret notamment par la rencontre avec les acteurs de terrain
- - Garantir un partage équitable des données, comprendre les implications, les groupes de partages interprofessionnels
- Eveiller les citoyens à plus de conscience environnementale, en éveillant cette sensibilité à l'école (et indirectement les parents).
- Mise en réseau et partage des données brutes pour les scientifiques ; accessibilité de données agrégées pour les citoyens.
- Valorisation de l'Education et de la formation

- Fonction de contrôle du citoyen

#### Constat :

- Complexité multi niveaux
- Changements lents et obligations légales de court terme
- Pas de cohérence dans les politiques

#### Recommandations:

- Conscientisation rapide car beaucoup de temps perdu d'ores et déjà.
- Implication de tout le monde dans un projet commun (tourisme, pêcheurs, agriculteurs) sans culpabiliser les acteurs
- Contribution concrète des citoyens, par des réactions concrètes en tant que touriste par exemple, communiquer de manière positive sur les enjeux du maintien de la qualité de l'eau
- Conscientisation de la relation entre homme terre-mer
- Créer des liens entre les disciplines/groupes concernés (pluridisciplinarité)
- Utilisation de boîtes à outils opérationnelles On est citoyen tous les jours et on a un rôle de contrôle qu'il faut assurer

#### **3° Transversalité – cohérence – dynamique :**

- Intégrer les politiques, travailler de manière transversale et décloisonner les matières (pluridisciplinarité)
- Cohérence (boues recyclées, cycle de l'azote, utilisation dans la construction)
- Dynamique des systèmes et effet domino, comment créer un effet de masse ?
- Utiliser les ressources là où elles se trouvent.
- Transparence de la facture

#### Constat :

- Enjeux économiques évidents quant au choix de type de culture
- Marge de manœuvre restreinte à cause de l'économie
- Fracture entre normes sanitaires et environnementales

#### Recommandations

- Encourager les cultures alternatives et la consommation du bio
- Renforcer la relation avec l'agriculteur et le revaloriser

- Au niveau politique s'assurer que les programmes promis sont respectés
- Encadrement des agriculteurs vers une reconversion
- Polyculture et rotation de culture
- Recours à des supports d'information innovants, biodynamiques
- Prendre conscience qu'on est un maillon de la chaîne de l'eau
- Enjeux économiques, en fonction des régions il y a des solutions locales plus adaptées

**[On mesure ici aussi combien les recommandations remontent à un certain niveau de généralité.]**

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Les évaluations orales exprimées à chaud sont positives, notamment sur la qualité des intervenants et de l'animation. Emmanuel reste un peu frustré toutefois. Le besoin d'un *stake-holder* média est exprimé.

S'exprime aussi une confiance volontariste dans le dialogue : une véritable syntonie

**Au final, le bilan est donc très positif. Il paraît pertinent d'accompagner les différentes parties-prenantes (citoyens mais aussi scientifiques) de manière à consolider la capacité à coproduire en articulant les demandes (des citoyens) avec les manières de construire l'objet et de procéder des scientifiques. Cet écart, bien connu, et en partie conscientisé dans le projet, n'en continue pas moins d'influencer la manière dont la rencontre s'opère, et les façons dont les postures d'acteurs impactent les rôles tenus par les uns et par les autres. La maîtrise de la nécessaire convergence entre les acteurs mérite sans aucun doute un suivi particulier.**

**Il semble aussi que la partie « écriture de scénario » a été moins bien vécue, « ressentie » par les citoyens. Les évaluations envoyées a posteriori ont confirmé cette impression mise en mot sur le vif dans le Verbatim. Dans l'économie du projet, ce point est de mon point de vue à traiter spécifiquement : il pointe en effet en creux les enjeux de « compétences » et de « domination symbolique » qui inhibent les citoyens et grèvent la capacité à exploiter tout le potentiel idéal et démocratique de la démarche. Il serait dommage que le potentiel du groupe et la démarche innovante du projet soient rattrapés par ces biais bien connus.**

La préparation des prochaines phases apparaît donc stratégique en la matière.

## **LA QUALITE DES EAUX COTIERES : UN ENJEU COLLECTIF**

VENDREDI 7 JANVIER 2011

### **Compte-rendu**

#### **1. Introduction par Michel DELEBARRE, Ancien Ministre d'Etat, député-maire de Dunkerque, Président de la Communauté urbaine**

Son discours insiste sur l'importance du rapport entre démocratie et dimension européenne. Il souligne l'important rôle d'interface joué par les élus locaux et les collectivités territoriales dans la mise en œuvre des décisions européennes et leur acceptation par les citoyens. La volonté de tisser des liens entre les différents niveaux et acteurs (citoyens, scientifiques, politiques locales - UE) est déterminante pour initier une nouvelle dynamique. L'acceptation et le suivi de nouvelles décisions environnementales seront à la mesure de la prise de conscience par les citoyens de la nécessité d'agir. Le meilleur élément qui rend une politique efficace, est celui d'impliquer activement les citoyens. Les décisions politiques doivent être reconnues et vécues par les citoyens pour être effectivement suivies et permettre un changement dans les mentalités et dans les faits.

#### **2. La qualité des eaux côtières de la Manche orientale et de la baie sud de la mer du Nord : quels sont les enjeux d'une bonne gestion des bassins versants de la Seine, la Somme et l'Escaut? Quelles actions pour y parvenir? Josette GARNIER, Université Pierre et Marie Curie et Véronique ROUSSEAU, Université Libre de Bruxelles**

Cet exposé résume fidèlement les informations transmises aux citoyens lors de l'atelier d'avril 2010. Les points suivants ont été abordés (le pdf de la présentation est disponible)

##### Constat : un écosystème perturbé

- Symptôme : importantes accumulations de mousses blanchâtres et nauséabondes sur les plages de la Manche orientale et de la mer du Nord au printemps (mai) dues à la présence en excès de colonies mucilagineuses de *Phaeocystis* dont la croissance n'est pas régulée par les brouteurs (copépodes).

- Causes : les importants apports par les fleuves d'azote et de phosphore dans une moindre mesure ont déséquilibré l'écosystème en nutriments majeurs (excès de N et P par rapport aux besoins des diatomées) permettant aux colonies non siliceuses de *Phaeocystis* de supplanter au



printemps les diatomées, chaînon important dans la chaîne trophique menant à la production de poissons

- Effet indésirable potentiel des mousses : possibilité d'asphyxie des organismes due à la dégradation par les bactéries de la matière organique accumulée ; faible impact sur le tourisme ; impact négatif possible sur la pêche via l'augmentation du nombre des levés de filet du au colmatage des filets par les colonies mucilagineuses.

#### Quelles actions peut-on mettre en place pour gérer cette situation ?

Les activités anthropiques sont à l'origine du déséquilibre des nutriments. Deux types d'apports de nutriments doivent être considérés :

- Ponctuels : rejets domestiques traités ou non par les STEP (62 ktN/an – 8ktP/an)
- Diffus : érosion naturelle, agriculture (335 ktN/an - 11ktP/an)

#### Analyse :

#### Instruments législatifs :

Européens :

- Directive Nitrates, 1991
- Directive sur les eaux résiduelles urbaines (DERU), 1991
- Directive-cadre sur l'eau, 2000 (obligation de résultats)
- Réforme de la PAC, 2003

Convention OSPAR

- PARCOM, 1992
- OSPAR, 2005

#### Options de réduction des émissions d'azote :

CT : amélioration de la captation de l'N

LT : agriculture intégrée

➔ Élaboration et évaluation de 3 scénarios possibles : BAU, bonnes pratiques agricoles, agriculture sans engrais minéraux (agriculture biologique)

Démarche Aware : De la gestion traditionnelle à une gestion adaptative et intégrative (janvier 2011) intégrant l'avis de citoyens informés par les citoyens (avril 2010) et les parties prenantes (octobre 2010). Objectif, intégrer l'avis des citoyens dans le processus de prise de décision.

**Alain LEFEBRE : centre IFREMER Manche-Mer du Nord basé à Boulogne:**

*L'Ifremer est l'un des établissements de recherche marine intégré à la gamme de compétences étendue. Les technologies sous-marines, la biodiversité, l'halieutique et l'aquaculture, l'environnement littoral, les ressources minérales, les biotechnologies, l'océanographie opérationnelle, comptent parmi ses missions de recherche et ses domaines de compétence et d'excellence. Dans ce contexte, Alain LEFEBRE étudie la qualité de l'environnement et tente de trouver des solutions pour la régulation des intrants.*

La zone côtière devant Dunkerque est particulière car elle est influencée par les apports de la Seine ou le système Rhin-Meuse-Escaut selon la direction et intensité des courants.

Depuis 1990, un mécanisme de surveillance est mis en place par IFREMER et l'Agence de l'eau Artois-Picardie. Annuellement entre mars et avril, on constate une augmentation importante de la concentration de chlorophylle (indicateur de biomasse algale) au large des côtes dunkerquoises. Cette augmentation est accompagnée d'une grande variation du rapport entre diatomées et *Phaeocystis* en fonction des années.

Les problèmes observés à la suite de l'accroissement des espèces nuisibles sont notamment la présence accrue d'espèces produisant des toxines absorbées par les coquillages consommés par l'homme. Et l'on remarque une augmentation de la quantité d'algues nuisibles. On est rarement au-dessus des seuils de toxicité, mais il faut être prudent car le processus est non-linéaire. L'écosystème réagit lentement aux changements, par conséquent, les mesures législatives mises en place cette année auront des effets dans 5 à 10 ans, d'où l'importance de réagir rapidement.

### **3. L'atelier citoyen AWARE : présentation de la méthode par Fanny GLEIZE et de la Déclaration par les citoyens de l'atelier AWARE**

**Document : déclaration des citoyens (à compléter)**

### **4. Table ronde de réactions à la Déclaration et échanges avec la salle**

- **Pascal Maret, Agence de l'Eau Seine Normandie**

Le travail de communication entre acteurs de la Terre et la Mer est à mettre en œuvre. Pour l'instant on est à zéro.

Il existe grosso modo 6 millions d'analyses environnementales accessibles, mais la mise perspective de ces données est un véritable enjeu.

Il ne faut pas stigmatiser l'agriculture : l'agriculteur est contraint par la PAC, par les filières de distribution, il réalise que qu'on lui demande. Il est nécessaire de développer une approche territoriale en travaillant avec les coopératives agricoles.

Il serait intéressant créer un label « eau » pour l'agriculture comme témoin des efforts consentis par l'agriculteur pour le respect des ressources aquifères

- **Bruno Rakedjian, Ministère français de l'Ecologie, Energie, Développement Durable et Aménagement du Territoire**

Il y a quelques années, la France connaissait un retard important par rapport à l'UE et à ses objectifs en matière de rejet d'eaux usées. Depuis un plan d'action global a été mis en œuvre et la part de rejet urbain a diminué. Les STEP sont aux normes de façon générale. Communiquer ce type d'informations vers le public n'est pas une pratique habituelle mais elle est en marche. Depuis mars 2010, un portail d'information sur les STEP, la qualité des eaux et la réglementation sur l'assainissement a été mis en ligne. Au niveau européen, depuis peu, on peut également accéder aux données des autres Etats membres : système WISE).

L'aspect transversal demandé par les citoyens est important et déjà en œuvre : le ministère français essaye de rencontrer aussi bien les autorités locales que la Commission européenne.

- **Louardi Boughedada, vice-président à la Communauté urbaine de Dunkerque, chargé des questions relatives à l'énergie dans le cadre du développement durable et au suivi du Plan climat ; président de la Commission Locale de l'Eau du SAGE du Delta de l'Aa**

La pratique du dialogue avec les citoyens sur les problèmes affectant la communauté urbaine de Dunkerque est déjà bien rodée. Cependant, certains problèmes dépassent la compétence de la Communauté. Sur la question de l'eau, la compétence de la Communauté est limitée, le nombre d'acteur de l'eau est énorme et les intérêts sont parfois contradictoires. On arrive difficilement à un consensus. Le cadre législatif et économique (ex : PAC) d'aujourd'hui ne permet pas qu'on résolve le problème de manière efficace. Mr Boughedada est d'accord avec les recommandations faites par les citoyens. Son sentiment est que l'agriculteur choisit certaines pratiques pour répondre à ses besoins mais en respectant les intérêts de la collectivité.

- **Anne Lecoeuche, animatrice du SAGE (Schémas d'Aménagement et de Gestion des Eaux) du Delta de l'Aa**

Les 'SAGE' définissent les objectifs et les règles d'une gestion intégrée de l'eau au niveau local. Il s'agit d'une concertation des différents acteurs au niveau du bassin versant, et doté d'un programme d'information et de communication avec le public concerné. Pour communiquer leurs actions, ils ont pour objectif de vulgariser les données scientifiques pour les rendre accessible à tous les acteurs. Ce processus est en phase de mise en œuvre.

- **Martial Grandmougin, Agence de l'Eau Artois-Picardie**

M Grandmougin donne les informations suivantes concernant la lecture de la facture eau : l'eau potable des ménages représente 160 millions de m<sup>3</sup>/an au prix de 4 €/m<sup>3</sup>.

La diminution de la pollution respecte le principe des rendements décroissants : le coût pour le dernier pourcentage d'eau polluée est prohibitif. Par conséquent, le traitement de la pollution ne peut pas être total.

### **Intervention du public**

#### **Union locale d'habitants et défense des consommateurs (Commission Locale de l'eau) :**

L'intervenante conteste le caractère ludique de l'information du citoyen telle que préconisée par la déclaration des citoyens. Il faut prendre les choses au sérieux. L'éducation des parents par les enfants : non ! Il faut trouver les moyens d'éduquer les parents, trouver le bon niveau d'information pour les bonnes personnes.

L'intervenante regrette le gaspillage dû aux règles et normes (ex : taille et aspect des fruits) imposées par les filières de distribution.

Elle recommande une meilleure information des élus sur les aspects scientifiques

#### **Montassine, pêcheur :**

Au sujet de la communication entre la terre et la mer : la chambre agricole représente les agriculteurs auprès des Institutions européennes et bien qu'ils côtoient les pêcheurs à l'agence de l'eau, il ne ressort rien de cette rencontre.

La politique agricole a imposé l'extension des polders et la diminution de la surface des estuaires. Les modifications de l'écosystème forcent les pêcheurs à pêcher plus loin mais l'espace délaissé au bord des côtes ne se restaure pas. Le pêcheur côtier est un indicateur du milieu, il a une connaissance de la réalité du terrain, mais ce dernier est en train de disparaître à son tour.

**ADELFA** : L'eutrophisation est un excellent point d'entrée, un support pour parler des autres types de pollutions liées à l'eau.

**Lycée agricole et aquacole de Boulogne** : Bien que soumis à la pression européenne et économique, les agriculteurs peuvent aussi faire le choix qui leur permet de vivre bien tout en diminuant la pression sur l'environnement (ex : abandon du labour et de la culture du maïs). L'enseignement peut contribuer à faire changer les modes de production.

**Agriculteur** : L'intervenant, lui-même agriculteur, souligne la forte évolution de l'agriculture depuis le début du siècle du traditionnel à l'intensif, puis à l'industriel. Les éleveurs industriels ont les

moyens de diminuer leur impact sur l'environnement, c'est une question de volonté. L'épandage des engrais se fait avec des dosages de plus en plus petits et mieux distribués dans le temps et selon les conditions météorologiques. Les bandes enherbées imposées par la PAC sont des obligations, mais alors que certains agriculteurs constatent la différence (il y a moins de plantes qui poussent dans les fossés), d'autres n'en comprennent pas l'utilité ou n'ont pas envie de perdre entre 5 à 10 mètres de terrain non cultivé. Il faut cependant reconnaître que les bonnes pratiques commencent à être communiquées et intégrées. L'intervenant conclut qu'il est convaincu qu'il doit changer ses pratiques mais passer au biologique n'est pas une solution envisageable pour lui.

### **Réaction des citoyens aux différentes interventions :**

Leur message au sujet de l'information est qu'elle soit moins rébarbative et donc plus accessible, mais toujours prise au sérieux. Le terme attractif serait plus approprié que ludique. Dans d'autres situations, l'information existe mais les citoyens ne viennent pas la chercher. Les enfants peuvent dès lors être une porte d'entrée. AWARE est un commencement, mais les échanges doivent continuer et être encouragés. L'information reçue pourrait être transmise à la société civile.

La reconversion au bio est viable, c'est peut être une partie de la solution. Il est utopique de vouloir l'appliquer à tout le territoire mais il faudrait en évaluer les possibilités.

**David ALCAUD, enseignant-chercheur en science politique, vice-président de la Fondation ICCR (Fondation internationale pour la Recherche comparative en sciences sociales)**

David ALCAUD identifie trois défis :

#### 1. Réussir à dépasser le gap entre experts garants de l'expertise et citoyens longtemps considérés comme incompetents

- Enjeux d'apprentissage collectif (eutrophisation et effets)
- Est-ce que AWARE permettra un nouveau système d'action où les citoyens joueront un rôle spécifique ?
- Les messages d'aujourd'hui ont-ils un impact sur les participants présents notamment dans leur activité professionnelle ? Est-ce qu'après la conférence, les élus vont continuer à fonctionner de la même manière ?

#### 2. Concilier une approche statique (on a appris et stabilisé les connaissances acquises) et dynamique (quel usage fait-on de ces données)

- Peut-il y avoir une plus-value citoyenne dans la dynamisation des systèmes d'action ? Les citoyens vont-ils bousculer les habitudes des acteurs en place ? Les citoyens ont-ils réussi à attirer l'attention sur les problèmes qui ne sont pas suffisamment abordés, à identifier les manques, à mettre sur l'agenda des experts les impensés ?

Sur le fond : on apprend les causes et les effets induits par les pollutions

Sur la forme : comment permettre à l'action publique de s'améliorer, communiquer un savoir-faire et induire un changement de priorités ?

3. Apprivoiser l'apparente complexité : Il y a une crainte non négligeable que le public se dise : « c'est une bonne rencontre mais comme c'est compliqué, je ne vois pas comment modifier mon mode de fonctionnement ». Ici, dans la dimension administrative et politique, on travaille sur des **échelles renouvelées** (à différents niveaux et création de solidarités, nécessité de dépasser les habitudes de travail). Ensuite, on travaille sur des **thématiques** où la façon d'aborder les choses diffère en fonction du thème. Quelle autorité est compétente ?

Les citoyens peuvent bousculer les choses et motiver les administrations publiques. La démarche collective n'est pas encore stabilisée et il est possible de structurer davantage la démarche et la dynamique collective pour obtenir une coproduction de qualité.

**5. Quelles sont les solutions pour une meilleure gestion de l'écosystème aquatique et de la qualité des eaux continentales et marines? Christiane LANCELOT, Université Libre de Bruxelles et Gilles BILLEN, Université Pierre et Marie Curie**

La ZCM est le dernier maillon de chaîne de processus qui commencent dans les terres. C'est au niveau du bassin versant que se prennent les mesures de réduction des émissions de N et P. La présentation décrit et évalue les effets sur la qualité des eaux continentales et marines des différentes options de réduction des émissions de N et P élaborées à partir des discussions avec les citoyens et les parties prenantes (atelier d'octobre 2010). La présentation pdf est disponible en annexe. Il est à noter que les résultats obtenus sont préliminaires.

Scénarii élaborés :

1. Quel est le chemin parcouru depuis 1985 (année de référence 'OSPAR' correspondant au maximum des émissions contemporaines de N et P)

Comparaison entre situation 1985 et 2006 cette dernière considérée comme actuelle

Analyse basée sur Forêt : l'agriculture est remplacée par des forêts.

Sans habitants : l'agriculture est maintenue, mais il n'y a plus de rejet d'habitants

Pristine : tout forêt sans habitants

## 2. Achever la mise aux normes des STEP (scénario DERU)

N : pas d'effet sur les rejets

P : diminution

On constate une diminution du nombre de jours de risque de mousse de 28 jours (2006) à 21 jours (DERU) dû à la diminution du P. L'intensité de l'efflorescence est diminuée de 17%. Mais la qualité de l'eau des rivières est toujours moyenne à pauvre.

## 3. Aménager les paysages hydrologiques

On imagine la création d'étangs et de mares récupérant les eaux des exploitations agricoles. Ce type de système permet d'abattre les concentrations en N lors des lessivages des terres. Au 18<sup>ème</sup> siècle (carte de Cassini), il existait beaucoup de mares et d'étangs dans la région étudiée. Il y a des régions plus propices aux étangs (sur base du type de couches géologiques). Le scénario multiplie les étangs qui existaient, on constate une amélioration locale de la qualité des eaux de surface mais dans les ZCM cela ne provoque pas de diminution supplémentaire des efflorescences algales et du risque de mousse sur la plage.

## 4. Agriculture reconsidérée et changement des habitudes alimentaires

L'agriculture doit fournir des denrées alimentaires et une eau de qualité. Elle a privilégié sa première fonction. L'agriculture biologique fournit ici une eau avec un seuil défini de N.

Scénario Agriculture biologique sur les bassins d'alimentation de captages prioritaires (BAC). En comparaison avec DERU, il n'y a pas de grande différence en ce qui concerne le nombre de jours de risque de mousses mais bien une augmentation du degré de diminution de l'intensité des efflorescences (23%) par rapport à la référence 2006.

Scénario Agriculture biologique sur tout le bassin : 19 jours et diminution minime de la quantité d'algues (+2% par rapport au scénario BAC).

La synthèse des scénarios montre un lien entre l'amplitude des efflorescences et l'enrichissement de la zone côtière en N tandis que la période durant laquelle les accumulations de mousse peuvent être observées semble liée à l'enrichissement en P.

Les bons résultats obtenus par les scénarios mettant en œuvre l'agriculture biologique pose la question de sa capacité à nourrir le territoire du bassin. Cette question fut abordée par le biais de bilans comparant l'agriculture traditionnelle, l'agriculture biologique et cette dernière combinée à une diminution de 50% de la part de viande dans le régime alimentaire (option bio-local-démocratique). Les estimations montrent que seule cette dernière option permet de ne plus dépendre des importations extérieures.

### **Table ronde : Réactions des parties prenantes et des citoyens aux scénarios testés**

**Bruno Rakedjian (Ministère) :** le Scénario DERU est une obligation et sera donc mis en œuvre à court-terme., Quid des autres scénarios ? Quel est l'impact des bandes enherbées, de zones ripisylves ?

**Nord-Pas de Calais :** Aware s'intéresse-t-il à la valorisation des algues et mousses ?

**R :** Cette question a été abordée dans le passé et abandonnée. Les composés mucilagineux des algues pourraient être utilisés en cosmétologie ou en pharmacie, mais malheureusement il faudrait d'énormes volumes d'eau pour extraire la gélatine. De plus le milieu étant pollué par des métaux lourds, il faudrait prévoir des étapes de purification.

La question est ensuite posée de l'intégration de la notion de quantité d'eau envoyée à la mer en plus de la qualité ? Le problème est important dans la région car Il faut maîtriser l'eau, garder l'eau en période de sécheresse et envoyer les excédents lors des pluies abondantes. Les débits moyens sont très modestes dans la région.

**Police de l'eau :** commence à mettre en place des zones d'épurations naturelles à la sortie des zones agricoles, à évaluer.

**Réponse des citoyens :** Lors de la présentation des résultats des nouveaux scénarii, ils espéraient des résultats plus positifs avec une réponse claire du genre 'voici ce qu'il faut faire pour résoudre les problèmes'. Au lieu de cela, chacun doit prendre ses responsabilités et faire ses choix tout en restant attentif aux intérêts des autres. Les citoyens sont confiants car, beaucoup de personnes étaient présentes et actives à la conférence. Ils ne veulent pas s'embarquer ( ?) dans une logique de marché, il ne faut pas se dire « on ne peut pas agir car les problèmes nous dépassent ». Il existe un désir de renforcer la position de "consomm'acteur", et d'avoir le pouvoir d'influencer l'avenir des générations futures. Ce n'est pas seulement une question de quantité de mousse accumulée sur la plage, mais aussi un combat pour une meilleure qualité de l'eau. Les citoyens sont favorables à ce qu'on explore les autres sources de pollution.



**Josette Garnier** souligne que le message issu des scénarii est positif. Il faut approfondir la recherche en modifiant l'hydrologie à des références plus actuelles que celles de 2006.

## **6. Table-ronde de réactions aux travaux présentés et échanges avec la salle**

### **- Pascal Maret, Agence de l'Eau Seine Normandie**

Il y a beaucoup de choses réalisées par les agriculteurs telles que la technique culturale simplifiée mais elles ne sont pas connues du public et doivent être communiquées => transparence, reconnaissance des efforts fournis.

Les réactions de l'écosystème sont lentes: les résultats d'aujourd'hui sont dus aux mesures prises il y a 20 ans au moins.

Même si les conclusions ne sont pas totalement satisfaisantes, il FAUT agir. On a la Directive-cadre sur l'eau, on a le grenelle de la mer en France. On a donc des outils qui nous permettent de prendre des décisions. La mise en conformité des zones de captages et le passage au bio sur ces territoires peut enclencher une dynamique.

### **- Martial Grandmougin, Agence de l'Eau Artois-Picardie**

Les effets socio-économiques des scénarii devraient être calculés. Quel sera le coût au m2 et qui sont les acteurs qui sont gagnants ou perdants ? C'est important car le décideur politique doit pouvoir optimiser sa décision en fonction de la relation coût / avantage.

**R :** C'est exact mais les bilans économiques sont valables à un certain moment dans le temps car les prix varient beaucoup.

### **- Michel Mariette, Assemblée pour la Défense de l'Environnement du Littoral Flandre-Artois (Association Adelfa)**

On a un savoir-faire et il faut le valoriser, trouver un équilibre entre la production et la consommation dans les relations de commerce international. Dans les pratiques agricoles, les données météorologiques ne parviennent pas à l'agriculteur à temps, alors que, si l'information leur parvenait au bon moment, on pourrait éviter les lessivages (éviter l'épandage d'engrais avant de grandes pluies). Le P est piégé dans les sédiments et avec les tempêtes et inondations, il revient à la surface, il faut donc entretenir le lit des rivières et les canaux

On tente de comprendre les phénomènes et puis d'agir en interpellant les gestionnaires et les administrations. L'administration est vieillissante et donc les préoccupations ne sont pas

les mêmes et il est par conséquent difficile de la mobiliser. Il faut rajeunir les institutions et les impliquer les citoyens conscientisés.

L'analyse du rapport coût/avantage : pour descendre de 30 à 20 jours d'efflorescences, on a des efforts considérables à réaliser, il ne faut pas négliger les coûts.

**Citoyens** : Pourquoi ne pas répartir différemment les budgets de la PAC pour modifier l'agriculture ? **R** : Il faudrait que DG agriculture et DG environnement se parlent plus.

- **Antoine Pierrot, La Lyonnaise des Eaux:**

La Lyonnaise des eaux est un exploitant des STEP. Il veut prendre une position de partenaire par rapport aux associations locales et aux collectivités. Cette conférence lui donne de l'espoir car l'information est claire, même si la problématique touche à beaucoup de niveaux, des solutions existent.

A la question de son action personnelle dans la résolution de ces problèmes il répond que qu'il exploite au mieux les outils dont il est gestionnaire (STEP et réseau d'assainissement) renouvellement, maintien, entretien, ici, il se considère n'être qu'un élément ponctuel de la chaîne.

**Citoyens** : Volonté des citoyens d'obtenir plus d'information sur la gestion des STEP, obtenir par exemple annuellement un rapport/bilan.

C'est l'argent public qui est injecté dans le fonctionnement de ces infrastructures. Donc pourquoi ne rendraient-ils pas des comptes à la population ? **R** : L'autorité publique est compétente et elle reste attentive et contrôle la façon dont les STEP sont gérées.

**Montassine** : en mer, il y a beaucoup de pollution par le pétrole. Les équilibres dans le milieu marin ont été altérés. Et c'est un élément tout aussi important que l'eutrophisation. La facture d'eau pourrait être un support de communication vers le consommateur.

## **7. Synthèse de la journée par David ALCAUD**

### **On a assisté :**

1. à un apprentissage collectif
2. à une dynamique de partage en termes d'utilisation des outils
3. à la confrontation avec la complexité réelle de l'action publique

La journée et surtout ce qui découlera de cette journée soulèvent un certain nombre de questions :

Quelle a été la production collective d'aujourd'hui ?

Qu'est-ce que Aware apporte de neuf à cette question de l'eutrophisation ?

Qui porte quoi désormais ? Qui prend la direction pour transmettre les messages d'aujourd'hui aux décideurs politiques à un niveau plus élevé ?

A-t-on un objectif clair et une stratégie ?

Peut-on influencer la gestion des écosystèmes côtiers grâce aux scénarii produits ?

Les lignes de force bougent-elles ? Il s'agit d'un processus hors du commun car on utilise des relations entre scientifiques et citoyens.

Les citoyens sentent-ils avoir plus d'outils pour réellement influencer les choses, un pouvoir d'action ?

Les citoyens se sentent-ils utiles au processus ?

Est-ce que parmi les élus présents, certains vont s'attacher aux recommandations faites et prendre en considération le processus ?

Que restera-t-il après la conférence, des changements vont-ils réellement s'opérer ?

Les remarques faites aujourd'hui par l'assemblée seront-elles incluses dans les scénarii et les recommandations ? Il serait opportun que chacun retravaille sa présentation pour les enrichir des remarques formulées au cours de la journée.

A vous, à nous de savoir mettre en œuvre les lignes d'actions identifiées.

### **Conclusion de Louardi Boughedada**

« Une société faiblement nitratée » (en parallèle à la société faiblement carbonée) doit être construite par toutes les strates des administrations. Les élus représentent les concitoyens et si ces derniers sont sensibilisés, leurs élus devront agir dans ce sens.

## Annex 4 – Programme of North Sea conference

# LA QUALITÉ DES EAUX CÔTIÈRES : UN ENJEU COLLECTIF !

VENDREDI 7 JANVIER 2011

## PROGRAMME DÉTAILLÉ

*Cette conférence est animée par Fanny Gleize et Yves Mathieu (Missions Publiques, partenaire du projet européen AWARE).*

*David Alcaud, enseignant-chercheur en science politique, vice-président de la Fondation ICCR (Fondation internationale pour la Recherche comparative en sciences sociales), sera le Grand Témoin de cette conférence et interviendra au long de la journée pour mettre les débats en perspective.*

9h00                    Accueil

9h30                    Ouverture de la conférence par **Yves MATHIEU** (Missions Publiques, partenaire du projet européen AWARE)

*Introduction par **Michel DELEBARRE**, Ancien Ministre d'Etat, député-maire de Dunkerque, Président de la Communauté urbaine*

09h50                    *Qualité des eaux côtières de la Manche Orientale et de la Baie sud de la Mer du Nord : quels enjeux d'une bonne gestion des bassins versants de la Seine, Somme et Escaut? Quelles actions pour y parvenir? par **Josette GARNIER**, Université Pierre et Marie Curie et **Véronique ROUSSEAU**, Université Libre de Bruxelles*  
*Quelle est la situation dans le dunkerquois et quels sont les enjeux? Par **Alain LEFEBVRE**, Centre IFREMER Manche-Mer du Nord*

10h45                    *L'atelier citoyen AWARE : présentation de la méthode par **Fanny GLEIZE** et de la Déclaration par **les participants de l'atelier AWARE***

11h15                    *Table-ronde de réactions à la Déclaration et échanges avec la salle*

- Pascal Maret, Agence de l'Eau Seine Normandie

- Bruno Rakedjian, Ministère français de l'écologie, énergie, développement durable et aménagement du territoire

- Louardi Boughedada, Vice-Président à la Communauté urbaine de Dunkerque, chargé des questions relatives à l'énergie dans le cadre du développement durable et au suivi du Plan climat

- Anne Lecoeuche, Animatrice du SAGE du Delta de l'Aa

- Ludovic Lemaire, Agence de l'Eau Artois-Picardie

12h15                    DEJEUNER

13h30                    *Quelles solutions pour une meilleure gestion de l'écosystème aquatique et de la qualité des eaux continentales et marines? Présentation des travaux des scientifiques du projet AWARE, par **Christiane LANCELOT**, Université Libre de Bruxelles et **Gilles BILLEN**, Université Pierre et Marie Curie*

## **Annex 5 – Agenda of North Sea workshop**

### Programme of the local citizen workshop, Brussels, 8-9<sup>th</sup> October 2010

#### **• Friday 8<sup>th</sup>, October 2010**

9.00 - 9.30 Warming-up, presentation of the programme and the objectives of the workshop. Answers to questions raised during the 1<sup>st</sup> European workshop in april 2010.

Participants (and Missions Publiques)

9.30 - 11.00 Eutrophication : presentation of the situation, existant scenarios and costs of measures. Possible conflicts on water use.

Gilles Billen, Josette Garnier, Université Pierre et Marie Curie

Christiane Lancelot et Véronique Rousseau, Université Libre de Bruxelles

11.00 - 11.15 Break

11.15 - 12.30 Round-table 1 : Impacts of eutrophication on the North sea Results of the online survey, which targeted stakeholders of the coastal marine ecosystem.

- Francis Kerckhof (NGOs, Beach Working Group)

- Marc Suméra, director of the Tourism Office of Wimereux

- Gérard Montassine, retired fisher in Dunkerque

- M. Lefèbvre (head officer of the laboratory of Environment and Resources of the Ifremer Channel-North Sea)

12.30 -13.00 Preparation with the participants of questions for the next round-tables

13.00 -14.00 Lunch

14.00 - 15.30 Round-table 2: Political and legal framework

- Michael Kyramarios (Service of Marine Environment –Belgian Federal Ministry)

- Pascal Maret (Water Agency of Seine Normandie)

- Bertrand Hamaide (economist, Facultés Universitaires Saint- Louis, Brussels)

- Marc Lipinski (Ile-de-France Region)

15.30 - 15.45 Break

15.45 -17.15 Round-table 3: Pointed-sources of nutrients

- Jean-Claude Martin (director of the waste-water treatment plant of Brussels North)

- Olivier Rousselot (SIAAP-Service public de l'assainissement francilien, on the 3 basins)

- Bruno Rakedjian ( French Ministry of ecology, energy, sustainable development and land management)

Complementary speakers :

- Bertrand Hamaide (economist, Facultés Universitaires Saint-Louis, Brussels)

- Pascal Maret (Water Agency of Seine Normandie)

Conclusion of day 1 – preparation of day 2

## **Saturday 9th, October 2010**

9.00 - 10.30 Round-table 4: Diffuse sources of nutrients –

Erik Gobard (farmer in Seine et Marne) –

Pascal Maret (Water Agency of Seine Normandie) –

Tomas Garcia Azcarate (CAP, Institut d'Etudes Européennes) –

Catherine Ramelot (NITRAWALAQUAWAL, association of the Wallonne Region) –

Nils Fauchon (Veolia Eau)

10.30 - 10.45 Break

10.45 - 12.30 Building scenarios: what do you recommend? What are the priorities to explore? Participants and scientists

14 12.30 - 14.00 Lunch

14.00 - 18.00 Working groups and drafting of the citizen declaration Preparation of the local conference  
Participants

## **Annex 6 – North Sea Citizen Declaration**

### **AWARE**

**Connecting people for Better water management**

### **CITIZENS' DECLARATION**

**For a sustainable management of coastal water ecosystems in the Southern North Sea and Seine, Somme and Scheldt river basins**

Nicolas COPIN

Mikhaëlla FIEL

Béatrice GOFFARD

Emmanuel HANKENNE

Isabelle MORE

Alain LEDAGUENEL

Ann LEFEBVRE

Jean-François MASSELOT

Véronique DE RIDDER

Benjamin WOUTERS

### **WHAT IS THE AWARE PROJECT?**

The AWARE project ([www.aware-eu.net](http://www.aware-eu.net)) is funded by the Seventh Framework programme of the European Commission. This original European initiative jointly engages scientists, policy makers and citizens in creating and analysing scenarios for a sustainable management of coastal water ecosystems in three European areas:

- The Gulf of Riga (Estonia and Latvia),
- The Southern North Sea and Seine, Somme and Scheldt river basins (France and Belgium) and
- The Po river Delta (Goro lagoon, Italy).

During the course of the project, citizens, scientists, policy makers and other stakeholders concerned by human-caused deterioration of coastal ecosystems actively participate to workshops held at both local and European levels. AWARE's approach is collaborative and solution oriented, focusing on the dialogue between the key actors to improve the management of the situation.

The AWARE project aims at delivering recommendations and scenarios to European and local policy makers, and ultimately making all stakeholders aware of the urgency for a sustainable management of European coastal water ecosystems. AWARE project's achievements will be presented and discussed in Brussels, on 9th June 2011, at the European Economic and Social Committee head office.

### **WHAT IS EUTROPHICATION ?**

The coastal zone of the Southern North Sea suffers from eutrophication, as a result of the unbalance between inputs of nutrients, i.e. nitrogen, phosphorus and silicium. Of particular significance is the excess of anthropogenic nitrogen and phosphorus (agriculture and urbanisation) on the Seine, Somme and Scheldt river basins that causes eutrophication. These problems have not only environmental but also social and economic consequences on the impacted areas.

## INTRODUCTION

We are a group of 10 citizens involved in the AWARE European project. This project aims at improving coastal water management in three European areas:

- The Sacca di Goro lagoon (Italy)
- The Gulf of Riga (Estonia and Latvia)
- The Southern North Sea and the Seine, Somme and Scheldt river basins (France and Belgium), in which we live.

In the same way as 10 citizens from Goro and 10 others from the Gulf of Riga regions, we have volunteered and were randomly selected to participate.

We are not directly involved in water or land management, nor are we scientists in this field, but we do share the same will to understand the situation and play an active part in improving it.

The 30 of us had a first meeting in Paris in April 2010, where we debated on our perceptions of coastal water quality in each three European sites. The topic of particular interest was eutrophication (a strange word for us at the beginning!), its causes, its consequences, as well as the European context of coastal ecosystem management.

On 8th and 9th October 2010, we (10 citizens from the Southern North Sea) met to study more locally and specifically eutrophication problems in our area and elaborate on recommendations for a better management of our coastal waters. Our perception of the problem was originally based on visual observations of the shoreline or at sea: whitish foam, brownish and cloudy waters, litter on beaches... Overall, we could see there were problems, but did not understand what was really happening, or what we could do about it. Our concern about the coastal water quality is part of much broader concerns, such as the quality of our environment, our practices, the policies we make, and which actions are appropriate and should be taken.

We had discussions with scientists working on eutrophication and with a large panel of stakeholders from the Seine, Somme and Scheldt river basins: elected representatives, policy makers, water management representatives, association representatives, fishermen, farmers....

We understood that eutrophication in the North Sea – a process related to human activities on the three watersheds – resulted from excess nutrients being discharged from point sources (e.g. sewage and waste water treatment plant) and diffuse sources (leaching and run off from agricultural soils) .

Not only do we focus on the consequences of eutrophication in Southern North Sea coastal zones, but our concern extends to the quality of inland and marine waters, regardless of the pollutant considered. Therefore, the issue of the environmental quality of our coastal waters is for us much larger than that of eutrophication.

The following presents some of our findings and recommendations we made as citizens, because we feel as full-fledged participants in the ecosystem affecting the quality of coastal waters.

We now all agree that efforts to solve the problem of coastal eutrophication must come primarily from:

- a better coherence between the decision makers and the other stakeholders at the scale of the river basins (Part I);
- a better information of all stakeholders, including citizens, for a real awareness of the implications of the coastal water quality issue (Part II);



- a strong message to farmers, expecting a change in their farming practices and committing to changes in our consumption patterns (Part III).

It seems to us that the main measures to reduce eutrophication should focus on diffuse sources, including agriculture. We wonder whether investments to address point sources pollution aren't coming close to the breakeven point (both in terms of cost and processing techniques).

It is therefore a priority for us to act in allocating resources to fight against diffuse sources including agriculture.

## **I. TRANSVERSALITY / CONSISTENCY / DYNAMICS**

### **OUR FINDINGS**

From what we found out, eutrophication seems to be a complex issue involving nitrogen and phosphorus cycles and multiple cause-effect relationships; the sea acting as the one significant outfall. It is also a complex system in terms of territorial approach and its political management. It is multistakeholders (decision makers, managers, food producers, scientists, water consumer unions, environmental organisations... not to mention residents) and multilevels (European, national or federal, regional, local, river basins, etc.. ); and this makes it hard to manage at political level.

This complexity is exacerbated regarding the time scale involved: some of the pollution sources have accumulated over several decades. A positive impact of our changes in practice will only be visible in the long-term, that is to say: not aligned with politicians' commitments.

Awareness is difficult because the origins of eutrophication are diverse, and lifestyles and responsibility levels multiple.

Many things have already been done: studies have been written, models, and regulations implemented. But we get lost under the load of information and we do not feel that they are consistent with each other.

Finally, citizen's action is weak: while the citizen can be a regular "user" of the coastal area, he or she – in most cases – only observes the degradation of the area, and offers little involvement in efforts to improve water quality.

### **OUR RECOMMENDATIONS**

- Enhance awareness and foster actions; these are even more urgent than effects will be slow (we have wasted enough time!).

- Finding a sufficiently coherent unity of purpose that leads to joint actions: a common interest to act

Two stories reported among stakeholders illustrate well our idea.

A fisherman told us that he feels better informed when a scientist is on board his ship. He wishes he were consulted as a marine professional. What he observed happened to be at times in contradiction with scientific findings.

Overall, this fisherman feels more responsive to the issue of the marine water quality deterioration when one explains to him that these waters are polluted by the watersheds, mostly independently of his actions. He attests to the fact that while being included in a scientific process, he is more attentive to the whole pollution chain and to the role of everyone, his own as well as other farmers', and feels more inclined to act together with others.

A Tourism Office director on the French coast told us that he does not feel concerned by the problem of coastal eutrophication, or he refuses to be, "because it would be like shooting yourself in the foot". He also told us that he was not involved in discussions on this issue. At the end of our discussion, he was more aware of problems but did not know what to do...

These two exemplified the issue of reinsurance or reassurance of the actors. Once the fog lifts and we all share the same information (see below), we end up acting. We are all responsible, to a certain level, and we must all react together in the same direction. This is not to blame the actors or to raise them against each other. When we discuss and we take the time to explain threats and opportunities, one feels less blamed, more positive on actions to implement. It is about communication and recognition of every one's place in the system.

**- As citizens, we also want to be actors able of concretely contributing (not just as passive receivers of the information).**

The ability of citizens to understand these issues should not be minimized. In that case, one solution to the fears of the Tourist information office director that tourists will avoid the coastal station if they hear about eutrophication is to ensure that tourists awareness of marine area preservation is an issue by itself, and that the tourist information office recognises the deterioration and promotes the work done to restore the area.

The message must be positive: "You get a quality resort for your vacation. Do you know you have an important role to play in preserving and improving the water quality here during your stay but also back home?" It is important to position citizens as everyday actors of environmental quality. Citizens must take their responsibilities and be active even between elections.

**- Bring together the Fisherman and the Farmer:** their respective problems must be shared so that each of them is aware of its impact on marine environment (on the one hand fishing, on the other the degradation of water quality) and understand the ecosystem they live in.

Meetings between the people of the Land and the people of the Sea should become best practice. These meetings would help to share their observations and constraints, and together they would try to find solutions to their specific problems. This could be done like already done for instance by the interprofessional Flemish organizations Boerenbond & Zeebond which support farmers and fishermen, and exchange with organizations such as Greenpeace, sharing their expertise. Farmers are not necessarily aware that their practices have an impact on the marine environment and vice versa, the fishermen do not necessarily know that the marine problems find an origin upstream river mouths.

**- Create links between the eutrophication-related disciplines:** interactions between the public, citizens, scientists, policy makers.

Scientists involved in the AWARE project know well that a multidisciplinary approach is required (environment, economics, sociology ...). In addition, workshops - where the different stakeholders come together – give to everyone the opportunity to speak, to clarify and share their views, approaches and experience, which is a source of enrichment ... Different people participate to AWARE: no one has been stigmatized, everyone feels rich with knowledge, ready to convey the message to the outside.

**- Create a dynamics from these meetings and exchanges and then a "snowball" effect:** we recommend disseminating effectively the information, through operational "toolbox", in order to involve more and more people.

We feel that care must be taken not to communicate everything to everyone, risking to rapidly reaching the limit of feasible. Dynamic must be

maintained after an experience like AWARE. It is therefore a matter of finding "ambassadors" which will involve stakeholders at their own level and generate, through this dynamics, a snowball effect.

We questioned politicians and will question them again, as well as scientists, but we also have to question citizens. We can play a tremendous role as a lever.

It is about strengthening the role of civil society, citizens, and their controlling role.

## **II. INFORMATION / OPENNESS / EDUCATION**

### **OUR FINDINGS**

- As citizens we consider that the information we have access to is not sufficient. We became aware that there is a large (not to say a huge) amount of information, but which is neither shared nor accessible enough. A better access to that information will mean a better understanding of our environment.

- We notice a lack of transparency; our water bill for instance: what part of our bill goes to the water treatment? We do not know how the money generated by the "water" taxes finance the different process (drinking water, treatment).

- It seems to us that each stakeholder has "vertical" data (related to its own field of activity) at its disposal, but that there is little cross reference. For example, the water agency of Seine-Normandie has information on the water pollution rate in the Seine estuary; but we understood that it is more difficult for this agency to assess the implication of the water discharge resulting from farming activities. There is existing data (amount of nitrogen used on the crops, information on the livestock, analyses of the harvest to check the residual amounts of nitrate ....) but how do we link them so that we improve knowledge about what happens in water, at least in theory?

- Practical knowledge and visual observations acquired by researchers as part of their work is not recorded. Even worse: academic papers are sometimes in contradiction with actual situation, as we were told by a former fisherman. This lack of a proper strategy for capitalising on the field experience is an important debate; and scientists do recognise the added value of these information. Beyond a doubt it should become the rule that they give local stakeholders feedback on their research and vice versa.

- Citizens are not only passive witnesses of environmental issues, they are actors among others. Succeeding in solving the eutrophication issue is only feasible if we, citizens, become aware of the situation and make the decision to change our individual and collective behaviour.

### **OUR RECOMMENDATIONS**

*We should...*

- Popularize more scientific data, all the while remaining neutral regarding special-interest groups (in particular industrial and sectorial lobbies). Besides it should become generally accessible through mediatization, direct marketing or even home mailing. Thus we suggest to launch a periodical (like the EDF/Electrabel's magazines) in order to inform about water control and treatment (based on the results of delegate's report), to acquaint citizens with the current and coming actions and to offer them a right of reply.

Concerning popularization, can it be conceivable to raise public awareness

of eutrophication through advertising campaign, like it is done to promote a change in people's behaviour?

- Force the stakeholders (provider, distributor and operator) to publish once a year, clear information about the investments and expenses that they made for the improvement of the situation.
- Consolidate and record the facts and figures in a centralized way, in order to identify any redundancy in data gathering. Each group should have access to those elements in a way that they can understand: detailed and gross access for scientists, summarised form for stakeholders and decisionmakers and attractive rundown for citizens.

The objective is to achieve the sharing of the same elements by any involved actor, to allow citizens to understand what is going on around them and to make them realise that "what I am doing here does have an impact there."

- Increase young generation awareness through school. It will have a domino effect, and it will permit to bring parents to think about the impact of their choices as consumer activists.

### **III. DIFFUSE SOURCE / CONSUMPTION**

#### **OUR FINDINGS**

Nowadays the eutrophication of the Somme, the Seine and the Scheldt rivers basins is mainly caused by the diffuse source of nutrients (nutrients enter river waters from soil erosion and run-off).

The soil quality is still questionable in spite of current progress.

We heard that there are many solutions which can be combined in order to move beyond traditional agriculture model. But economic issue, not to mention pressures of interest groups does matter when it comes to the choice of the type of culture.

There seems to be little room for change in farmers' mentalities, as decisions are often dictated by market fluctuations and CAP. We perceive a gap between the health recommendations (standard for drinking water regarding nitrate rate is 50mg/l) and the environmental recommendations (good environmental quality standards for water could be as low as 12mg/l).

Therefore meeting the health guidelines does not mean having good environmental quality water.

*We are ready to...*

- Act as well-informed consumers and promote alternative cultures and market (local, organic).
- Enhance social ties with farmers and reinforce dialogue rather than pointing the finger at them for supposedly being responsible of overall environmental impacts. Thus we must reconsider farmers' status and make them understand that they are not alone, and that we are ready to support them as citizens.
- Call for an assessment of what has been done and obtained in relation to environmental objectives and political commitments. We wish more transparency and advocate for further evaluation and continuous reporting.

#### **OUR RECOMMENDATIONS**

*We should...*

- Ask our representatives to reassert the value of farmer's stead.
  - Help the latter in a reconversion toward mixed crop farming, crop rotation.
- This can be done by relying on counselling in biodynamic agriculture, to help

farmers with the regeneration of soil microorganism and soil enrichment.

- Enhance the value of the *water* environment's *good ecological* status (before and after changes made)
- Raise awareness of the various links of water chain: each stakeholder should be aware that all activities are interconnected, that there is a cause and effect relationship between the land and the sea, and that consumers have an essential responsibility at their own level.
- Develop and communicate a view based on territories and focused on troubleshooting. For instance, in some territories organic farming could work while in other one it won't, depending on the intrinsic attributes of the ground. We want to emphasise that by adopting a territory-based approach and associating all the stakeholders, they are consequently more enthusiastic and inclined to change things for the better. Dynamics occur and make solutions and measures more easily conceivable, applied and effective.

**To conclude** it is important to us to repeat that beyond the problem of eutrophication - one of the key water pollution issues in the river basins and in the coastal waters looked at, we claim for an awakening and a change in everyone mindset, in order to improve water quality, and on a larger scale to preserve the natural resources.

We hope that this project, for its approach as much as for its methodology, paves the way for a new kind of civic participation and gesture, because it recognizes and gives every one of us a place and a responsibility to understand and to act.

## Annex 7 – Local Workshop Agenda



### Local workshop on “How to achieve sustainable ecosystem in the Gulf of Riga”

#### AGENDA

29-30 October, 2010

Jūrmala, Latvia

Hotel “Eiropa”, Jūras street 56, Majori

##### Day 1: 29 October, 2010

9:00 Arrival/coffee

##### SESSION I: INTRODUCTION

09:30 Welcome  
by AWARE project team

09:40 Introduction to the objectives of the workshop  
by AWARE project team

09:50 Role of scenarios as a tool for planning future of the coastal waters  
Presentation by AWARE team  
Questions and discussion

##### SESSION II: PRESENT SITUATION IN THE GULF OF RIGA

10:10 Trophic status development (N and P concentrations, water clarity, Chlorophyll) and impacts on human health (bathing waters, food) and natural resources (algae blooms, fish)  
Presentation by AWARE team  
Discussion on present situation and definition of “good environmental status”

11:00 Coffee break

11:20 Other pollutants: oils spills, hazardous substances  
Presentation by AWARE team  
Discussion on monitoring and assessment results

11:50 Pollution loads to the Gulf of Riga

- Point and diffuse pollution sources
- Anthropogenic versus natural
- Transboundary pollution load

Presentation by AWARE team  
Discussion

12:20 How much pollution load shall be reduced to ensure good environmental status of the Gulf of Riga? Modelling of future of the Gulf of Riga  
Presentation by AWARE team  
Discussion

The event is organized in the frame of EU 7<sup>th</sup> Research Framework Programme, project “AWARE – How to achieve sustainable water ecosystems management connecting research, people and policy makers in Europe”



12:00	Lunch
	<b>SESSION III: SCENARIOS FOR FUTURE</b>
14:00	Work groups on the social perceptions and future visions on the status and impacts of the coastal and marine waters
15:00	Plenary discussion on work group results
15:30	Coffee break
16:00	National policies and legislation to improve the status of coastal and marine waters; <i>Presentation on situation in Estonia by Ministry of the Environment</i> <i>Presentation on situation in Latvia by Ministry of the Environment</i>
17:00	<i>Discussion on policy goals and visions for the Gulf of Riga, connecting policy ambitions and citizens views</i>
17:45	International cooperation with Russia and Belarus <i>Presentation on situation by Ministry of the Environment</i> <i>Discussion on strengthening cooperation, connecting different stakeholders</i>
18:30	Closing of the day
19:30	Dinner/Social activity

#### Day 2: 30 October, 2010

09:00	Review and preview of the day
09:10	Urban waste water treatment <i>Presentation on treatment standards, present situation with treating waste water treatment, costs for needed improvements</i>  <i>Discussion on development of waste water treatment policies for the Gulf of Riga, role of scientists, policy makers, municipalities and citizens</i>
10:30	Coffee break
11:30	Agricultural activities <i>Presentation on potential measures (change in land-use, cropping patterns, limitation in use of fertilisers, manure) related costs and economic loss</i> <i>Discussion on agricultural measures, role of scientists, farmers, policy makers and citizens</i>
12:00	Lunch
14:00	Fishery <i>Presentation of fish stocks in the Gulf of Riga</i> <i>Discussion on future of fishery, particularly coastal fishery</i>
14:45	Tourism <i>Presentation on tourism development strategies in coastal area</i> <i>Discussion on future of tourism</i>
15:30	Coffee
16:00	<b>SESSION VI: RECOMMENDATIONS FOR ACTIONS ON CONNECTIVITY BETWEEN SCIENCE - POLICY MAKERS - CITIZENS</b> <i>Discussion on communication and dissemination of scientific knowledge</i>
17:30	Next steps, closure of the workshop

## Annex 8 – Gulf of Riga Online Survey

**Full name:**

**Name of the organization you are representing:**

**Address:**

**Phone:**

**E-mail :**

### 9. Please let us know to which of the following groups you belong:

Professional associations (farmers, fishers, other) ☐

Civil society (NGOs, other) ☐

Scientists/academic ☐

Policy-makers (public water agencies, environmental  
management institutions, other policy-making bodies) ☐

Other, please fill in:

### 10. What is your perception of the ecological status of the Gulf of Riga coastal water ecosystem? Please rate on a scale of 1 (very poor) to 5 (very good)

*Quality of water (algae, colour, etc.)*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	I don't know

*State of the water's edge (cleanliness, implications for human health, etc.)*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	I don't know

*Overall ecological status*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	I don't know

### 11. Has the overall ecological status improved / worsened in the past five years?

Improved ☐

Worsened ☐



**12. If the ecological status has improved / worsened, what are the main causes, in your opinion?**

**13. What can the following actors do to improve or protect the ecological status of the coastal water ecosystem?**

Professional associations (farmers, fishers, other)

Civil society (NGOs, other)

Scientist/academic

Public bodies and policy-makers (local, regional, national, EU)

Citizens and tourists

**14. To what extent does cooperation between the following actors currently occur?** Please rate the quality of cooperation using a scale of 1 (very poor) to 5 (very good)

*Science towards Policy-makers (SCI → POL)*

*Do scientists consider the issues addressed by policy-makers?*

☐

1

☐

2

☐

3

☐

4

☐

5

☐

I don't know/cannot answer

*Do policy-makers interact with the academic world and rely on scientific activity?*

○ ○ ○ ○ ○ ○

1 2 3 4 5 I don't know

*Do policy-makers interact with the citizens and take proper consideration of their opinions?*

○ ○ ○ ○ ○ ○  
1 2 3 4 5 I don't know

*Do citizens express and communicate social issues to the policy-makers?*

○ ○ ○ ○ ○ ○

1 2 3 4 5 I don't know

*Are scientific knowledge and outcomes available and accessible for citizens?*

○ ○ ○ ○ ○ ○

1 2 3 4 5 I don't know

*Do citizens provide inputs to the scientific community?*

○ ○ ○ ○ ○ ○  
1 2 3 4 5 I don't know

--

**15. Please describe in a few words an example of science, policy, and public cooperation:**

## Who cooperated?

policy and the public □

science and the public ☐science, policy, and the public ☐

How did it work? (number of meetings, time period of cooperation, etc.)

Positive results and experiences:

Negative results and experiences:

**16. Please tick-off the following options/statements that according to your opinion is most relevant to the environmental degradation of your coastal waters:**

*Lack of appropriate policies*

☐

Totally  
disagree

☐

Partly  
disagree

☐

Neutral

☐

Partly  
agree

☐

Totally  
agree

*Lacking enforcement of regulation/policies*

☐

Totally  
disagree

☐

Partly  
disagree

☐

Neutral

☐

Partly  
agree

☐

Totally  
agree

*Lack of stakeholder participation*

☐

Totally  
disagree

☐

Partly  
disagree

☐

Neutral

☐

Partly  
agree

☐

Totally  
agree

*Lack of sufficient funding*

☐

Totally  
disagree

☐

Partly  
disagree

☐

Neutral

☐

Partly  
agree

☐

Totally  
agree

*Lack of environmental awareness*

☐

Totally

☐

Partly

☐

Neutral

☐

Partly

☐

Totally

disagree

disagree

agree

agree

Other, please fill in:

**17. The citizen's panel has suggested the following measures for achieving better ecological status. Do you agree or disagree that these measures are appropriate?**

a. Improving environmental awareness

Do you Agree

Disagree

☐☐

b. Environmental education

Do you Agree

Disagree

☐☐

c. If you have answered "Agree" on a) or b), how should the improvement be achieved in practice?

**18. How do you perceive the following potential environmental threats to the ecological status of the Gulf of Riga? Please rate from 1 = non-existent threat to 5 = very likely and serious threat?**

*Eutrophication and intensified algal blooms*

☐☐☐☐☐

1

2

3

4

5

*Decreasing abundance of fish*

☐☐☐☐☐

1

2

3

4

5

*Swimming prohibition due to faecal colibacteria*

☐☐☐☐☐

1

2

3

4

5

---

*Oil spills*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

---

*Dumped chemical weapons and other munitions*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

---

*Waste/litter in the water*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

---

*The NordStream gas pipeline*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

---

*Climate change*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

Other, please fill in:

--

## Annex 9 – Citizen Declaration Presentation at the Local Conference

### EU-classification of water quality – Recommendations

- Percentages are necessary to understand what the indicators are saying, and also to enhance comparability across Europe
- A common interpretation of the classifications are needed (what does ‚slight‘ really mean?)
- Simple, accessible information on water quality (including indicators) is key, and has to include health risks

### Hazardous Substances – Recommendations

- Public information is needed on the sources of all hazardous substances
- Increase public dialogue about hazardous substances, but also about daily products e.g. detergents, fertilisers, and batteries in boat harbors, which all affect coastal waters
- Improve records and monitoring of small scale oil spillage at the local level
- Improve public information and communication about policy changes to consumer products (e.g. why are old light bulbs suddenly banned?)

### Scenarios for the Future – Recommendations

- Acknowledge that any implemented changes in pollution reduction will not come about quickly
- Consider human health risks above economic needs
- Balance ambitious ecological goals with social needs and acceptable costs
- Encourage gradual planning and actions towards improvement of natural resources
- Increase public awareness about the trade-off in costs now vs. costs later for the future water quality
- Increase the efficiency of urban waste water treatment
- To achieve more cost-efficient treatment of waste water, consider investing nationally and across borders
- Increase cooperation among scientists across borders

### Pollution Loads and Impacts – Recommendations

- Provide citizens with clear and simple information on different alternatives (e.g. on organic agriculture)
- Increase industrial transparency (e.g. publish sewage treatment results) and explain impacts on human health
- Provide comprehensive information on the health and environmental impacts of consumer products
- Improve communication on ‘consumer rights’ regarding environmental effects of consumer products

### Recommendations for Policy – Background

The 2-day AWARE workshop took a holistic, comprehensive, approach to coastal water management:

- Scientists and policy expert presentations on
- Fisheries
- Agriculture
- Tourism
- EU and national policies
- Scientific modelling and scenario building
- Workshop discussions involved all those present

#### Recommendations for Policy

- Before deciding on policy measures, evaluate their cost effectiveness
- Neighbouring countries need financial incentives to cooperate (carrots)
- Maintain necessary resources for monitoring, enforcement, and controlling on human and environmental impacts
- Enforcements and monitoring measures should be supported by economic instruments / sanctions / penalties (sticks)
- Raise awareness, especially in rural areas, and offer free water quality tests for individual wells
- Scientific ambassadors who could explain / interpret investigation results to policy makers and to the public
- Clear information about impacts of policies (on people's daily lives) is needed, and appropriate involvement of stakeholders in the decision-making should follow
- Water policies should be communicated in a more proactive way using a variety of media for public communication (e.g. official announcements and advertisements in local newspapers; regular email lists; TV evening news; TV panel discussions; radio; popular online public portals; social networks)
- Involve more scientists in environmental assessments and also in public hearings
- Integrate 'water days' into existing events, open to all, where achievements can be presented and awareness raised
- Encourage a common agricultural strategy at the national level
- Improve the communication between farmers, agricultural and rural development advisors, and the public, especially on best practices
- For tourism, check the carrying capacity of the local area, and consider long-term maintenance of tourism infrastructure

## Annex 10 – Participants List at Local Workshop

**29-30 October, 2010 Jūrmala, Latvia**

### **List of participants**

NR.	Name, surname	Institution
1.	Agnese Jēkabsons	GoR citizen panel member
2.	Aija Caune	GoR citizen panel member
3.	Aivars Hincs	GoR citizen panel member
4.	Aleksandrs Petjukevičs	GoR citizen panel member
5.	Anda Mize	GoR citizen panel member
6.	Arnis Bērziņš	GoR citizen panel member
7.	Gina Piegava	GoR citizen panel member
8.	Ieva Reinholde	GoR citizen panel member
9.	Karins Kops	GoR citizen panel member
10.	Kaur Sarv	GoR citizen panel member
11.	Dace Vīlīņa	Baltic Environmental Forum-Latvia
12.	Kristīna Veidemane	Baltic Environmental Forum-Latvia
13.	Per Stålnacke	Bioforsk - Norwegian Institute for Agricultural and Environmental Research
14.	Andreas Bryhn	Uppsala University
15.	Peter Dimberg	Uppsala University
16.	Irina Comardicea	Adelphi
17.	Barbel Müller-Karulis	Latvian Institute of Aquatic Ecology
18.	Valters Toropovs	Baltic Environmental Forum-Latvia
20.	Laura Jankovska	Ministry of Environment of Latvia
21.	Sandra Biedre	Latvian Environmental Investment Fund
22.	Kaspars Žūriņš	Latvian Rural Advisory and Training Centre
23.	Maira Dzelzkalēja	Farmers Union
24.	Atis Minde	Food safety, animal health and environmental science institute, "BIOR"
25.	Inese Štrava	Tourism Development State Agency



## **Annex 11 – Evaluator’s Notes from the Local Workshop**

### **AWARE GULF OF RIGA LOCAL WORKSHOP**

1<sup>st</sup> DAY – 29 October 2010

#### **SESSION I – Introductions**

Introductions started by Kristina who asked the partners to introduce themselves first and then the citizens. The question to them was to say where they are from and also to mention their interests (keeping the sea clean, sustainable environment, etc).

The first PPT presentation was made the *Kristina* about AWARE – she used the structure and presentation created by Carlo for Goro. Her introduction also included an over of how the 2 workshop days are structured and that the main goal is to develop the citizen statement, which is not only saying something about the local level (for the local conference) but also about the European level (for the June conference).

*Irina* mentioned that evaluation sheets are included in the folders, and that they are welcome to fill it in throughout the 2 days, but also just at the end of the workshop.

*Kristina* then introduced Peter’s presentation by focusing on the word „scenario“, which may not be so familiar to all. She does very well in using few jargon terms and of using language that is clear and open to all.

*Peter* made the link between scenarios and models – that models are used to allow scenarios to predict how a system will react by changing assumptions. He used his hands to describe this process. Also, he used a bit of theatre to explain why we want to use scenarios based on mathematical models: instead of sitting down (literally did that) and talking about changes, which is like guessing, we should use models based on statistical data that help us to get specific answers; people reacted well to that. Perhaps not as much time spent on the slide with the 3 graphs as necessary.

He asks people what they would like to see changed, and to use their imagination – then the scenarios can be used to show what the system will look like under various changes before the changes have actually been made.

#### **SESSION II – Present situation in the GoR**

*Andreas* talked about the trophic state in the GoR and some health aspects. Started by explaining eutrophication using good analogies familiar to all and mentioning that normally with eutrophication causes an increase of most life (from phytoplankton to fish). He explained trophic status as the total amount of biological activity in a system, and the link between trophic status and eutrophication. He also explained also the „good“ ecological status by showing the EU classification of water quality – he also mentioned that the citizens will get to discuss this classification, which brought them back into the presentation. The trends of oxygen, phosphorus and nitrogen have all remained fairly stable, but mentioned that changes to poorer water quality probably occurred before the time measurements shown, and that for „good status“ would mean a reduction of P from about 25 to 15 mg/L. Andreas stopped and asked people if these graphs were clear, and explained again the x and y axes – getting a few nods from the room. He used his hands a lot to show levels on the PPT. The room is small so the projection is at a perfect height for presenters to do that – which helps. Most citizens followed along with the printed presentations, sometimes making notes. Aside from herring, Andreas brought up cod, because someone had asked about it in Paris – Kristina asked a clarification question and a nice discussion ensued given Bärbel’s expertise. This short opening of interaction also broke the stiffer atmosphere a bit ☺

Andreas then went into some health issues from eutrophication, e.g. toxic algal blooms. Conclusions also pretty clear. Trophic status changed mainly before the 1980s and since then have been stable. Before the 1980s few data. Oxygen is ok, but eutrophication caused increased life, including fish, but also therefore causing health issues with blooms. Clarification question on herring slide – it helps that people have the slides printed (in colour). A good question about how scientists calculate how much fish is caught and also how much fish are there (stocks). Andreas then explains some methods and the fact that there are high uncertainties in them. Ieva had questions on the phytoplankton blooms, including how can we protect children if non-experts without a microscope cannot tell which algae are toxic. Andreas explained that the authorities are supposed to keep an eye and tell the public not to swim at those times. Talking about measurements and Bärbel does not think the authorities measure cyanobacteria – Kristina will check at the break.

Discussion on EU classification – Karin wanted to know if there are examples of „high“ status. Maybe in some remote areas. GoR is right now at „moderate“ mostly and sometimes „poor“.

### ➔ How shall the definition of ‘good environmental status’ be set up?

Not clear, would be better to have percentages. What does „slight“ mean? If the EU looks at the global level, maybe what for them is good, for the local citizens it is absolutely terrible. There needs to be a common interpretation of these words. There are no strict definitions for „moderate“ and „major“, Andreas thinks because of political reasons. Bärbel talks about the guessing game that scientists go through to classify quality, and that often classification varies between different elements (fish, bottom fauna, water, habitat, etc). She also makes clear that a LOT of work is put into trying to agree with countries what the difference is between moderate and good, and that therefore the other classes will remain poorly defined. Yes, the scientific and management communities really focus only on the moderate-good line.

### ➔ Which indicators shall be used and in what way?

A suggestion to combine the EU classifications with the indicators presented, e.g. oxygen. Bärbel makes the point that it may be easier to look at what kind of animals you have in a system, this gives you a better indication of the quality, than to take oxygen measurements, which also depends on the weather, etc.

A question about N – if „good“ quality would be 15, what is it for N? Andreas makes the point that it’s easier to start with visibility, and work backwards to N and P from there. He also argues that because it’s easier to work with an indicator where you have long-term data, like secchi depth (this is also a cheap and easy method). The longer time you have data the more certain you are. To start with chlorophyll for example is much more difficult than to start with secchi depth for example. But Bärbel says she likes chlorophyll better because the measurements are more sensitive. But both parameters are easy to measure and they are used. Biological measurements are much more difficult and expensive to take.

Salinity is not really a measurement and indicator used. Fluctuations are not really connected to human activity. We monitor it though, because it gives indications about other descriptors.

Kristina asks why herring are used as an indicator. Andreas says it’s the dominant species. But it’s not a good idea to use them as an indicator for pollution, as they are an uncertain indicator of water quality.

Katrin wants to keep P and N as indicators, because it gives you exact numbers, and helps comparability over Europe.

Agnese comes back to health issues and the importance of having accessible information about the quality of water, and any health risks. Now she understands that the EU classification is not really clear and it would make sense to have country-specific parameters.

Aivers mentioned the weighting of issues, e.g. the health of the herring vs the health of humans.

### → How far are we from the 'good environmental status'?

GoR is at „moderate“.

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*Coffee Break – We are on schedule based on the agenda*

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*Kristina* introduced the oil spill presentation saying that it was inspired by the citizens in Paris.

*Andreas* mentioned the short and long term effects of oil spills. Policy mentions that ALL discharges of oil in the water are illegal – so if you see it, it's evidence of a crime. Legally it is very clear. Thus all Baltic States have to monitor the water, but concentrate on major traffic routes (monitoring twice weekly). *Andreas* causes laughter by asking people if they know what a mammal is ☺ He also mentioned that media loses interest once the oil is gone (at the latest after about 3 years) but PAHs still cause health risks even after that.

An interesting slide was included that shows how the number of oil spills is decreasing since the monitoring has increased. *Andreas* makes a good conclusion, bringing into review the items that he talked about.

*Andreas* gives the word to *Valters Toropovs*, and *Kristina* mentions that discussion will take place after this second presentation.

*Valters* talks about hazardous chemicals. The situation is not so clear as oil discharges, but most substances here are monitored somehow. When talking about what can be done individually we can pay attention to what we buy, how we dispose of it, and we can decrease the use of household chemicals. On the political and industrial levels we can substitute products containing hazardous substances, we can control and enforce regulations, and we can develop international treaties to ease cross-country cooperation. Presentation used good words, but not enough visual images perhaps.

*Kristina* takes over the moderation and introduces the guiding questions. What is missing is to ask citizens whether there are any clarification questions. But perhaps it was a good idea to start with the guiding questions, as clarification questions were asked throughout.

### → Is this issue a priority for the scientists, policy makers, and citizens?

*Ieva* brings up concerns about lead and why this was not brought up.

The question was also brought up about smaller spillage of oil products, not just about the large oil spills that are recorded and monitored. *Andreas* mentions that spills also less than 1 cubic meter are also recorded, but not all. Why? Probably resources... *Andreas* is not sure, somewhere along the line the information gets lost, possibly between the local authorities and HELCOM. But at the local level this is important to keep records.

Question also about chemical weapons and substances from WWII. Apparently there is no problem for the GoR, as too shallow.

### → Why and where are they considered as priority issues?

Remark about yacht clubs and boat owners who dispose of their old batteries in the coastal areas. They could be collected for recycled, but if this is not controlled there can be spills in the transport, etc.

It seems that these questions are often talked about at the policy level, but not publicly. And even if they hear talk about questionable detergents for example, the main problems are 1. We don't know or understand the details, and 2. The price difference is large and „better“ products are often more expensive.

There was a question about 1 or 2-layered tankers – the question is whether all tankers are now double bottom? Kristina can check later.

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*Lunch – We are behind schedule, as we did not get to Per's presentation before lunch. Kristina asked us to meet earlier, but we came back 10 minutes late, as a nice 3 course lunch was served.*

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## **SESSION II – continued**

Kristina introduced Per, who talked about the pollution loads.

Per started out with a long discussion on N and P, and really asked the participants to describe what they saw in the graphs. Really made a point about the fact that drier years mean less water, mean less nutrients in the gulf. Same with the loadings, made a really interactive slide that really involved the participants into the information. Great slides that showed how water samples are taken, and talking about why once per month is not enough. Came back to the first slide on N and P to connect with uncertainties – that these figures are a bit uncertain, so they are often just a pretty good estimate. Then he asked the citizens about the sources of N and P, where do they think it comes from? Per also mentioned that his discussion on N fertilisers will be echoed by the farmers association representative on the second day of the workshop. Good description that from 0 to 100 kg of N fertiliser a farmer can double his yield; but that from 100 to 200 kg, there is a minute increase in yield only. Whereas the losses of N to water from 0 to 100 kg is minimal, but from 100 to 200 kg the loss to water is very large. And including climate change, everything just gets exacerbated.

Kristina asked Andreas to continue, and then a discussion will take place later.

## **SESSION III – Scenarios for the Future**

Andreas talked about the pollution loading, and what are sustainable loads for good water quality? He used a cartoon (Prof Balthazar) image to explain the specifics of the GoR model. He also made clear that significant reductions could be achieved if sewage treatment would comply with the Urban Waste Water Treatment Directive – but this would still not happen by 2020, rather later. Also, it should be clear that total fish biomass would decrease if this would be done.

Andreas passed then the word to Bärbel, who presented results of her own model. In contrast to Andreas' model, this one includes exchanges of water and nutrients with Baltic Proper. Bärbel also included some graphs that showed that the model was tested with existing data, to see that it works and it is fairly reliable. Found the presentation of the models a bit too detailed and the citizens seemed a bit lost. Conclusion is that if P levels are not reduced then we will keep having regular unacceptable cyanobacteria blooms.

We are 20 min. behind schedule. Kristina introduces now the guiding questions back from session II. She makes the point that we wanted to look at 2020-2025 but the presentations about the scenarios show that we will only see some few changes until then, not the full effect.

### **→ What is the view on visions for 2020-2025 from citizens' view point?**

Karin asked about the model, and that climate change is not included, therefore the model is a closed box, static environment. Could weather have such a large impact on the model that it won't even work? Andreas mentioned that they cannot use weather since it is impossible to forecast. The point from Bärbel is also to not use climate change as an excuse to do nothing. Both models say that loads are in any case more important than climate.

Maybe it doesn't harm us so much yet. In principle we would like to have a cleaner sea but that would mean buying more expensive detergents, etc.

## → What could be common objectives?



Karin mentioned that we have to also acknowledge to ourselves that change will not come about quickly, so we have to get used to really long time lines. But Kaur reminded that we have to explain to people that changing things now are actually cheaper than trying to fix things later when it is too late.

Aija also mentioned that models show that business as usual will go on with the „moderate“ state, much as the last few years, some toxic blooms, but not so bad. The point is that this is a very lukewarm mood, and it doesn't motivate people to really change things. She would choose in any case the „golden middle road“. What does that look like? What is that scenario? Per comes back to the middle model presented by Andreas: if UWWTD is implemented in the drainage basin of the GoR, that would cost 40-90 million euro/year. If you ask the question of willingness to pay this way, people will not be willing. But if you say it is 10-20 euro/year/person, then people would say yes!

Ieva came back to the connectivity between people, scientists and policy. And corruption gets in the way. We must propose that the sewage waters be treated more. And Aivers says that if corruption is taken into account, we have to wonder how many million have to be put in to get out a benefit of 40-90 million?

From Bärbel and Andreas a question of fairness was brought up. First, that everyone should pay equally even if connected or not to sewage treatment. Second, the international aspects are important – Belarussians never see the GoR but Swedes benefit even while not living in the drainage basin.

*Kristina* now introduces the working group discussion – talking about key certainties and uncertainties of pollution loads and impacts. We are 55 minutes behind schedule. Kristina suggests going until 4 pm with the group discussion, and then having a break. Coffee can anyway be taken at any time during the discussion at the coffee machine.

### **Presentations of the working groups:**

*Anda's* group divided the pollution loads into agriculture, forests, households, and industry. For agriculture, it is clear that pollution is caused by chemical fertilisers, but unclear what the effects of biological fertilisers/manure. Also there is a clear necessity for food, but what is uncertain is the management of the food supply. If we decrease production in order to decrease pollution, then how do we grow the food? How do we produce it sustainably? Is organic agriculture also polluting?

For forests, the pollution will increase due to the cutting of trees, but the extent of the impact of that pollution is unclear.

For households the impact of sewage water is clear but unclear is the certainty of the future scenarios due to a lack of knowledge. Also the effective control/enforcements are crucial. Raising awareness is also necessary, as well as the improvement of waste water treatment.

For industry, the production will be ongoing, this much is certain, but the development of the industry (direction), and also the commitment of the other countries is not clear.

*Kaur's* group used almost the same topics. For industry, it is clear that clean processes are needed and also transparency of the production cycle. This is also a need for the future. This means that everybody should understand what technology they are using, etc. What is unclear is how much does it cost for a person? Are state institution monitoring? And how do we enforce control?

For sewage it is clear that large areas of Riga and Latvia are not connected to centralised systems and a significant % of the sewage systems are not effective. Do surveillance systems exist only in theory? How can we make it work? Is it easy to upgrade sewage systems and where to we get the money from?

For agriculture, they focused on fertilisers. It is clear that fertiliser overuse is hazardous for health, in the long run. How can we establish organic agriculture using current nature condition? Can we afford to switch to „pure“ organic agriculture, and does that mean we'll have to go back to horses?

For the policy of human behaviour, many people lack information, and the why products are advertised should be much more strict. Maybe even sewage companies should show the results of their treatment – more transparency!! How do we make people think about consequences of their actions? And how do we motivate politicians to control the actions of businessmen? How to we avoid conflicts between necessary regulations and personal freedoms?

There is a *general discussion* that ensued about organic agriculture. In theory it sounds good, but can we live with it, considering costs, current conditions, needed yields, etc.

There is a common feeling that information can be overwhelming. E.g. Bärbel's presentation and the different numbers and graphs presented, which was totally unclear to the citizens. Andreas' model on the other hand was easier to understand, it was clear. Karin underlined the fact that citizens often need to hear information very simply: this is bad, this is good!

#### **SESSION IV – What the policy is doing**

*Kristina* introduces the next session, and *Laura*, who will present instead of *Baiba Zasa*.

*Laura* is not a marine expert, but she tried to cover *Baiba's* presentation elements. A new Law on Marine Environment Protection and Management was just passed yesterday. This is the first „policy“ presentation for the day, and the feeling in the room is that this is just as difficult to understand as the „scientific“ talk.

*Kristina* introduces the guiding questions for the discussion.

##### **→ How does the connectivity works?**

Scientists are involved based on the law that is being considered. Maybe not researchers, but organisations that have to work with those laws.

Before a regulation is approved there is an approval process that involves consultation with other bodies – regulations are also available on the cabinet of ministers' website.

*Bärbel* asked specifically on the marine law, who were the groups that were most interested in saying their opinion? *Laura* mentioned only the greens.

##### **→ What could be improved?**

Question from *Karin* about enforcing new regulations? When you present a law to Latvians or Estonians for example, they will look for loopholes – so who controls it? *Laura* mentioned that if it is needed, regional environmental boards will do that, plus the navy can do that for the marine law.

Put drafts earlier on the website so that the public has more time to comment, and the law can still be approved in time. Currently, very few citizen comment so far on the regulations. *Aija* asked why? Is it because they don't understand the text, because it's not explained in public conference? Or because they are not interested? *Laura* agrees that the information is not really presented in a clear and „entertaining“ way. But



also not every law or amendments are interesting to the public, since they don't affect the public so much. *Aija* then asked whether there is a scaling system that describes the relevance to the public. *Laura* stated that the media is often the conduit that decides which laws and regulations are published and communicated to the public. Even this marine law will probably not influence people's daily lives, directly – indirectly it will probably have influence.

*Bärbel*'s point is that a lot depends on how well the programmes of measures are designed, how well the stakeholders were involved, and how well the information was communicated. *Laura* responded that programmes of measure are indeed in place, but that they are not so well financed, or so well put into place. More initiatives are definitely needed.

Citizen feedback on the website of the Ministry of the Environment: the News items are more of a distraction. People generally look for very specific things, and having to dig through the pages on legislation, etc. The point is that people have to really want to comment, it is not easy. *Anda* made the comment, however, that the general citizens probably do not care that much to comment and become involved.

#### → How are different stakeholders' view considered?

Stakeholders are: industry, NGOs, EU, employer unions, professional organisations (e.g. harbours)...

Before a law is passed information (a draft of the regulation) is put on the ministry website, and comments can be made there. There is also an NGO advisory board, so currently the citizens' point of view is gathered through NGOs.

There have been sometimes citizen surveys, depending on the law and the interest and sensitivity. If there are laws that impact daily lives, then there are also public consultations.

Question from *Per* on the relationship of this marine law to two very important elements of the WFD: the public participation focus, and the polluter pays principle. This last one, the PPP is in place, but this is not something that is new with this law.

Health organisations are also involved, depending on the law. *Ieva* says that they are not involved in this marine law.

#### → Environment vs. economic benefits?

This issue is considered, mainly as driven by stakeholders that are involved in the process. For economic benefits they use consultants who help them with that. For the daily economic benefits colleagues from the ministry do that. But also professional organisations, involved in the process as stakeholders, may bring numbers as input. Conclusion for the marine law? *Laura* mentions that due to the monitoring and control this law will not be cheap. It is difficult to discuss how much this law and the marine strategy will cost.

*Bärbel* asked how much the fine from the EU will be fined if they fail the goal by 2015? *Laura* says no country will reach that. But we have to try our best, and the penalty may be large but depends on the Commission (and if you show that you made efforts, it probably won't be so bad). *Kristina* feels discomfort because apparently we all know that we cannot achieve these goals in this timeline, yet we still sign these laws! The idea is that you would be moving slowly toward the targets.

In general, the feeling throughout this discussion session was fairly tense.

*Kristina* then introduces *Laura*'s second presentation on cooperation with Russia and Belarus.

*Laura* mentions that cooperation with EU and non-EU member states is required by the EU Directive. Advantages/disadvantages of the carrot policy? HELCOM experience is that this works. *Andreas* makes the point that Sweden does not want to participate in the Baltic Sea Action Plan because the measures suggested are not specific enough, and those that are, are too expensive as compared with e.g. improving sewage treatment plants in Belarus.

*Kristina* introduces the guiding questions for this discussion.

**→ How could citizens and scientists strengthen the international cooperation for improvement of status of the GoR?**

Informal cooperation is key. Cooperation with scientists across country borders is possible. Citizens could make a difference if there is significant pressure for example to improve the environment. *Karin*'s question shows daily difficulties of the public – Russia giving Estonian's visas so they can demonstrate about the quality of the Daugava River? *Aija* underlines the importance of providing governments with carrots. If you give money, then they might move a little bit. But she thinks citizens and NGOs cannot play a significant role.

What about scientists as a bridge to improve quality? *Bärbel* mentioned the benefits of working together on the project level – this can also show how that government views issues, whether they take it seriously or whether it is just political propaganda. *Per*'s dilemma is that they would like to work more with decision makers and policy makers, but currently scientists are valued and evaluated only on the number of international publications – so it is very difficult to take the time out for this kind of intensive cross-stakeholder dialogues and communication. He also tried to introduce the idea of a scientific ambassador, who would go around and inform ministries, etc. for at least 6 months after the end of a project.

*Aija* asked whether there has been any sort of cooperation between scientists on the costs and variety of cost levels of achieving certain goals. *Bärbel* says yes, but the numbers are uncertain. *Andreas* A common management plan really would be great...

*Kristina* also made a comment about the difference in the quality assessment between countries. E.g. for the same branch of the river in Lithuania the assessment is „moderate“ and on the Latvian side is „poor“!

**→ Which are the needs of politicians?**



## AWARE GULF OF RIGA LOCAL WORKSHOP

2<sup>nd</sup> DAY – 30 October 2010

*Kristina* introduces two stakeholders, and gives some information about logistics. She also gave an overview of how the day will look like, and what the expected outputs are.

### **SESSION V – Achieving a better quality of waters in the GoR**

*Kristina* introduces Laura, and her presentation, which is now on her topic.

*Laura* gave a presentation on the urban waste water treatment in Latvia. The territory of Latvia is considered as „highly sensitive“ so more strict regulations apply. The HELCOM Baltic Sea Action Plan and Recommendations are stricter than those of the UWWTD. The main conclusion is that since 2009 there are pretty drastic reductions in pollutants, as *Laura* says because companies are doing their job.

*Kristina* makes a short wrap-up after every presentation, and opens the floor to clarifying questions after most presentations. She also moderates those question sessions.

A question about the extremely high amounts of N in 2008 reveals that this is the year in which reporting standards changed. Most waste water treatment plants owe their investments to European funds. There is a transitional period right now, where these funds are still possible. A question also came up about the situation in Jūrmala, where a lot of the richer, private home owners are not connected to the sewage systems, but in fact the city has a brand new waste water treatment plant that achieves the highest standards. There are regulations that say all houses should at least have their own septic tanks, but it seems difficult to enforce especially for old houses. In general the connection of houses to waste water treatment plants is the hardest thing to implement, but it will also achieve high reductions in pollutants

*Kristina* introduces the next speaker, Sandra Biedre from the Latvian Environmental Investment Fund.

*Sandra* also spoke about the difference between centralised and decentralised wastewater treatment systems. Septic tanks are the most simple and outdated solution. The problem is that they can overflow and pollute the area. The biggest problems in Latvia centre on outdated and / or non-functioning treatment plants, inappropriate maintenance, capacity and sewage collection and drainage. Also, unavailable centralised sewage services and high maintenance costs. *Sandra* also went into detail (but fairly easy to understand) about the different treatment stages – mechanical, chemical, and biological. Out of these the chemical treatment is the most expensive, but also very effective. Small municipalities almost never use chemical treatment, but mainly biological. *Sandra* also gave an idea about the elements that must be taken into account when doing cost developments, i.e. number of current and future consumers, terrain, types of consumers (households, hotels, or companies), current state of the infrastructure, and maintenance costs. *Sandra* mentioned also individual actions that can be a solution, such as using less water, using different types of detergents, and educating the young generation.

*Kristina* opens the floor for general questions on this presentation.

Some municipalities apparently prefer to pay the environmental pollution tax rather than use chemical treatment, due to the cost. *Laura* mentions that this tax is actually a good weapon against pollution, but it also depends if you are still in the transitional period or not. If not, then you have to pay the tax tenfold if you are above the limit. A discussion also ensued on individual use of water and the flip-side, which is that treatment plants find it difficult to treat very concentrated sludge from consumers that save water very efficiently. There was also a question about what happens with the outputs of the chemical vs. the biological treatments: the sludge from bio treatments can be used on agricultural fields, but what about the chemical

sludge, which contains cached P and N? Monitoring does not require stringent testing of hazardous chemicals in waste waters. *Ieva* 's question was about treating chickens with chemicals in large production farms, and the answer is that these polluters are strictly controlled, as they are in the A class. There was also an interesting comment about „rich years“, such as 2008, when people consumed more water.

*Kristina* then introduced the guiding discussion questions.

#### → What can be done to tackle identified certainties / uncertainties?

*Katrin* emphasises that it is clear that enforcement is necessary. Citizens and policy makers agree, and also on the method, which is financial / economic measures (fines and controlling). *Arnis* also mentioned the importance of controlling individuals, and reacting quickly to breaches.

*Kaur* mentioned the idea of having to pay an environmental tax if you build a new well. But that still leaves old wells out of the equation. Ideas were also talked about such as offering tests on water quality in private wells, meaning that awareness has to be raised, especially in the rural areas.

*Andreas* brought the discussion back to priorities: country-wide standards can be reached by solving the waste water problems in Riga, and that is where the money should go. The small, country-house, polluters are more expensive to tackle and they only contribute very little.

#### → How can citizens / scientists / stakeholders support the implementation of actions / measures?

*Anda* reiterated the importance of raising public awareness on the impacts of individual actions related to waste water (e.g. taking a shower).

*Sandra* mentioned a database of best practices. A question on drinking water quality revealed that the quality is actually pretty good, but the problem is that most municipal pipes have been changed, but not the inner pipes, which are the responsibility of individual owners. The water in Latvia is naturally high in iron, and maybe people react to the colour and taste, and assume that it is not good. Obviously people just do not know enough about the level of quality, and intrinsically do not trust the pipes.

*Kaur* mentioned to inform the citizens of upcoming changes in waste water treatment and networks.

The question was also brought up about where public information should be included. There was a suggestion about putting advertisements (official announcements) from the ministry or the municipalities in the newspapers. Or a regular email list to which people could sign up (more relevant for scientists).

*Aija* is concerned about the limited amount of scientist involvement in best available technologies – and environmental assessments. Also, there is a lack of involvement of scientists in public hearings, so there is no transfer of knowledge at that local level. The difficulty from the scientists' side is that neutrality should be maintained. However, it is important that authorities who enforce regulations have good scientific capacity to use in these assessments.

A suggestion was also made to have „water days“ (for all stakeholders involved) that companies, ministries, municipalities would have a much bigger public impact if they were proud of their achievements and present them to the citizens!

We are 15 minutes past schedule, but the coffee break was still 30 minutes (participants also could then check out).

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*Coffee Break*

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*Kristina* introduced *Kaspars Zurins*, after giving a wrap-up of the previous sessions and linking it with the upcoming ones.

*Kaspars* talked about the agri-environmental advisory services in Latvia. The share of the population involved in agriculture is decreasing, as well as the share of agriculture in the GDP. But agricultural GDP is increasing (?). He also touched on the question of self-sufficiency. There was a big switch from 1990 to 2008 and it is due to the Soviet era style production to capacity. In that time there were a lot more exports, mostly going back to Russia and to the Russian soldiers stationed in Latvia. The data in 2008 shows that there are exports only in milk and dairy, and cereals, a little bit, and imports on pork and poultry. Regarding organic farming, the trend is increasing in the development of organic farming. 2 driving forces: understanding of farmers about their modes of production, and carrots, supporting farmers in this development.

*Kaspars* then gave the floor to *Maira Dzelzkaleja*, from the Union Farmers' Parliament. They decided before the session to break up their sessions for clarity.

*Maira* discussed a broader issue of whether farmers represent a threat or a friend for the environment. The UFP is counted as the third most important political pressure group in Latvia, according to the CIA. Their members are 861 farms and agriculture enterprises (people in the business), and they produce 46% of all grain produced in Latvia. *Maira* mentioned that in the last 20 years some significant amount of agricultural land has been lost, and is overgrown with bushes, etc. The general society views farmers as food producers, but also that they are small, always disappointed, poor beggars, and environmental destroyers. But farmers are also entrepreneurs, socially active in the civil society delivering public and social goods, and promoters of regional development who provide support to municipalities. *Maira's* point is that farmers would not want to destroy the basis of their own business by destroying the environment. Issues mentioned include high environmental requirements that result in high production costs (also resulting in increasing food prices). There is also uncertainty in regulations and legislation, a lack of knowledge and information flow, high bureaucracy, and pressure from society to produce food for everybody but to do it „green“! Farmers must balance three aspects: policy, innovative technologies, and investment planning and finances. From the union's side, the ideal future means that farmers promote state sustainability and stability; that officials are supporter not judges of farmers; that Latvian farmers are competitive on European and world markets; and that society is educated and aware of product characteristics.

*Kaspars* continued his presentation, focusing now on the role of the public advisory services in the CAP (common agricultural policy). He mentioned the Integrated Pollution Prevention and Control directive, which is aimed mostly at point polluters (e.g. pig farms), which are really strict regulations. The Nitrate Directive is Europe-wide and targets particularly sensitive areas. 5 districts of Latvia are covered by this directive. Different requirements all fall under an umbrella called Cross-compliance. Only when they comply to this (15 different legislations) do they receive the European subsidies. The main carrot is the Rural Development Programme 2007-2013. The Good Agricultural Practice codex is mandatory throughout Europe.

*Kristina* opened up the floor to the discussion.

*Kaspars* made it clear that organic farming will still produce N „pollution“. *Maira* also made it clear that organic farms also use fertilisers, mainly from animal sources, and that sometimes more N leaches into the environment from them. It is „sustainable“ farming that we need, it's not a question of organic vs. traditional farming. The gap is not that big.

*Karin* brought up the point that especially in Estonia the farming is already organic, the difference is in the post-production and the preservatives that are added to the products.

*Kaspars*’ opinion is that if we really want to do something for the environment we should stop eating meat! (the citizens did not seem to take that idea up though ☺)

*Ieva* brought up the balance between Latvia following EU regulations, but the transboundary nature of water resources, including non-EU countries. *Kaspars* mentioned that Russia is involved in HELCOM and they are participating in the decisions. Belarus is more difficult since they are not yet involved. In the planning process it is not such a problem, but it becomes a problem at the implementation level. Also, there is a monitoring program set up that measures the loads at the border, to keep track of what is coming into the system. Of course it costs money, though. From the farmers’ point of view it seems really unfair and stupid that such stringent requirements are enforced on small farmers in Latvia where large-scale farmers in Belarus are getting away with things.

*Karin* reminded that people want things green, but also *cheap*! But farmers actually have a lot of costs, and they invest a lot.

*Agnese* asked whether there is a common vision in Latvia about what to produce. *Maira* said that it is not clear at all. Farmers’ organisations try to cope with the uncertainty and ask this from the government to provide a clear strategy. The example given was that grain is grown in Latvia (with imported mineral fertilisers), exported to Denmark, where it is used to produce pigs, which are imported back into Latvia... silly – they could produce the pigs here and grow the economy. This type of strategy could also have a potential for cooperation.

*Kaspars* asks, however, what other branch of industry has these kinds of strategic plans? That’s socialism!

*Bärbel* asks a clarification on the economic benefits of manual manure storage – why are farmers so against it then? There is a clear need for awareness raising also for farmers, a discussion between farmers and advisors is also necessary.

*Maira* also reminded that society does not want natural manure, but push for chemical fertilisers.

We are still 15 minutes behind schedule, and are now taking lunch. The discussion was very lively and interested.

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### ***Lunch Break***

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## **SESSION VI – Sustainable development of the GoR resources**

We are still behind schedule, but only 15 minutes.

*Kristina* introduces the afternoon session before the next coffee break, and the first speaker *Atis Minde*.

*Atis* talked about fisheries and fish resources in the GoR. The presenter was often asked about the Latvian names of fish species mentioned, and to clarify the different names that are confusing even in Latvian. *Atis* also explained the difference in communities of fish on the coast and in the open waters, which are quite significant and that is why there are landings of coastal fish that are measured separately. He also mentioned that the main determinant of the number of herring in the gulf is the harshness of the winter. Milder winters mean more herring in the GoR. In open sea fishery, the number of fishing vessels has dropped from 76 to 36, and the fishers confirm that the amount of compensation money they get for the ships is much more than they would have had from fishing revenues. The number of professional fishermen in coastal areas is 30 out of 650. The rest are fishing during the summer for their own use. *Atis* also mentioned the problem of seals, which are destroying the fisheries for the fishers. The citizens could relate to the points, when the concepts

were presented using stories and humour. *Adis* also brought up the point about climate change-caused uncertainties.

*Kristina* opens the floor for questions.

*Andreas* asked about the increase in fish biomass due to eutrophication. *Adis* repeats that he only talked about some species that are negatively affected. He also speculates that beyond a certain amount of eutrophication maybe it will be bad for the fish, and also that it may be useful to know what the state was like 100 years ago. The two scientists continued the discussion, which did not seem to agree completely.

*Adis* does not believe that eutrophication will be decreased significantly. And if it decreases a bit it will probably be beneficial to fish populations. Fishermen just want more fish in the sea, and right now they are blaming the seals for the decrease of finishing, which is the biggest problem.

*Karin* asked about monitoring how many individuals that catch fish (in Estonia even if you catch one fish you need a permit, but it's fairly easy for casual fishers). In Latvia this is not so easy. Minimum are 3 months, and for using nets you have to apply for a license, etc. *Karin's* point is that if you make it easier for lower frequency fishers, you won't have so much illegal fishing. *Adis* admits that the main problems is with enforcement because there is so little checking that it's basically like none at all, due to too few capacities.

*Kristina* introduces the next, and last, speaker – *Inese* Sirava, from the Tourism Development State Agency.

*Inese* mentioned that tourism represents 4% of the GDP in Latvia. It seems like Latvians are spending more as tourists in other countries, than foreign tourists spend in Latvia (situation is not unique). The new tourism brand is „Latvia. Best enjoyed slowly“. Visually, the brand looks very water-related. Marketing strategy researched tourism trends in order to go in this new direction. Trends include green, nature, eco, knowledge, experience, culture, culinary, and slow tourism. The trend is that tourists are also engaging in a more sustainable relationship to nature on their trips.

*Agnese* asked about the seeming contradiction in the fact that this year most tourists came from Russia and Belarus (and maybe will continue to be), and they are not really in this niche of new experiences, slow, green, cultural tourists. *Inese* mentioned also some marketing products that aim to that target audience. Also, the motto in Russian does not include the word „slow“. She also mentioned that possibly we have stereotypes about Russian tourists. The LiveRiga campaign is also aimed more toward city tourists, and more active and dynamic visitors. She mentions that Riga and the rest of Latvia are mostly different places. Jurmala as well, targets a different kind of audience.

*Inese* then continued with her presentation specifically looking at the importance of the Baltic Sea with more than 500 km seashore in Latvia. One of the advantages here are the 4 very distinctive seasons. Pollution however, can be a negative influence on tourism. On the other hand tourism can lead to nature protection, improved management and planning and improved knowledge about nature and nature processes.

*Kristina* opens the floor to questions about tourism.

It seems like tourism is not impacting the nature of Latvia so much at the time, and that strategies are taken into account natural resources. *Kristina* asked if the tourism agency also cooperates with scientists. Yes, also with professional and industry associations, who are involved in advisory boards in the daily work of the agency. For them, the municipalities are the main stakeholders.

*Aija* asked whether there is a database on trends on what the most popular kind of tourism is in Latvia. At this point city tourism in Riga is the most popular. 80% of tourists are staying in Riga and Jurmala for short

periods. But the aim of the agency, says *Inese*, is to promote and develop Riga Plus products to take tourists out to surrounding areas.

*Anda* agrees that there are very few tourists in the countryside. These spots are also not very popular with local Latvians though, so it is a difficult direction.

*Karin* came back to the „green“ tourism and asked what types of assessments are done on the carrying capacity of certain spots. *Inese* mentioned that this is the first task of the municipalities. Is it scientific? Yes, there are methods used. Does someone check these? *Kristina* and *Inese* think so, but the permits are through the Ministry of Environment. At this moment the tourist flows are not so large, but *Kristina* thinks that if this strategy develops there will be even more assessments done.



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*Coffee Break, with optional walk to the beach.*

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## **SESSION VII – Recommendations for actions on connectivity between science/policy makers/citizens**

We are still running 15 minutes behind schedule.

*Kristina* starts this last session by going over the agenda of the conference on Monday. At this point 5 out of the 10 citizens have registered. *Gina*, *Ieva*, *Karin*, *Kaur*, and ... will be there from the beginning. Later in the afternoon, *Anda*, *Agnese*, and *Aivars* will join the conference.

*Kristina* then introduced the powerpoint created by *Irina*, which summarises a lot of the discussion points and recommendations made by the group.

There was about 1 hour of group discussion on the statements. There seemed to be surprise about some of them (later I asked some participants what they thought about the statements and they mentioned being surprised and not remembering that they talked about some of the issues). Perhaps a better way of doing this next time would be to ask one of the participants to keep track of these issues. It may however also be difficult since they may feel a bit outside of the discussion, like a Rapporteur. Still, I could have done the same thing but then only serve as a reminder of items that were potentially missed by that Rapporteur. This may have increased the feeling of ownership felt by the group. An even better idea (from *Karin*) is to have asked the participants to record their own statements / statements along the 2 days. This would have helped them be a bit more active, and would have helped them remember later what they talked about, and decrease the surprise at the end!! Otherwise, there were some additions, and a couple of deletions of statements. There was a lot of rephrasing and clarification on meaning, which was expected.

At the end of the discussion it was agreed that a 2 person team would present the statements, and a 2 person team would participate on the panel chaired by *Per*. Both teams would include a Latvian and an Estonian. *Anda* and *Kaur* were to present the statements and *Aivars* and *Karin* were to sit on the panel. *Kaur* unfortunately became ill on Sunday, and had to return home. *Karin* took his place on the presentation.

### **General comments about structure / logistics:**

- All proceedings (including the working group discussions) were recorded using a voice recorder.
- Comment from a stakeholder about making sure that you let people know that we are recording the proceedings. For the citizens it is no problem, since they agreed to it in their contracts, but the stakeholders did not know about it.

- Kristina is very comfortable as a moderator, and also with technology – this is an often overlooked, but important point and benefit for such a workshop.
- Guiding questions for the discussions were written on flip charts before the workshop and only shown when the floor was opened for discussion. The discussion points were noted by Kristina on separate flip charts, all placed on the wall in the front of the room. All flip charts were kept on the walls, but rearranged on the evening of the first day (they were also photographed for the records).
- After the conference, it seems that it would have been a good idea to include a presentation such as Rene's in the workshop. First of all due to its quality, practicality, and ease of understanding, but second also because it would have been nice to have presentations (not just citizens) from both countries.
- Karin later made a comment that we lost not only scientists but also citizens between the workshop and the conference, so either have the conference on a totally different date, or do not allow a free day between the two events.

## Annex 12 – Gulf of Riga Local Conference Agenda

### Conference “How to achieve sustainable ecosystem In the Gulf of Riga”

#### DRAFT AGENDA

1 November, 2010

Ministry of the Environment, Peldu 25, Riga, Latvia the hall 409

9:30	Registration/coffee
10:00	Welcome greetings by Ministry of Environment Latvia <i>Rolands Bebris, Director of the Environmental Protection Department, Ministry of the Environment, Latvia</i>
10:15	Introduction to the AWARE project <i>Kristīna Vaidemane, Baltic Environmental Forum, Latvia</i>
10:30	Current policy framework on coastal and marine protection in the Baltic Sea and the Gulf of Riga <i>Presentation by Baiba Zasa, Senior Official, Water Resources Unit, Ministry of the Environment of Latvia</i> <i>Presentation by the Ministry of the Environment, Estonia (N.N.)</i>
11:10	Water status of the Gulf of Riga <i>Presentation by Andreas Bryhn, Uppsala University, Sweden</i> <i>Presentation by the Latvian Institute of Aquatic Ecology (to be confirmed)</i>
11:40	Coffee break
12:10	Possible future of the Gulf of Riga and recommendable policy measures <i>Presentation by Citizen Panel (N.N.)</i>
12:40	Scenarios of potential changes in the Gulf of Riga <i>Presentation by Andreas Bryhn, Uppsala University, Sweden</i>
13:00	Panel discussion on the recommendations of the citizens <i>Moderator: Per Stålnacke, Bioforsk - Norwegian Institute for Agricultural and Environmental Research</i> <ul style="list-style-type: none"><li>• On pollution reduction measures;</li><li>• On cooperation with stakeholders</li></ul>
14:00	Final conclusions and next steps
14:30	Closing of the event



## **Annex 13 – Evaluator’s Notes from the Gulf of Riga Conference**

### **AWARE GULF OF RIGA LOCAL CONFERENCE**

1 November 2010

56 people registered for the conference, not all of which were present. On the morning of the conference however, more people came, who had not registered before. Four of the AWARE citizens panel were present from the beginning of the conference.

#### **Introductions**

*Kristina* welcomed everyone at the Ministry of the Environment and gave the word to *Rolands Bebris*.

*Rolands* mentioned the political and legal importance of the HELCOM Baltic Sea Action Plan. The Gulf of Riga is not only important for fisheries, but also for tourism, swimming, spa activities, etc. Especially in Jurmala, people do not recognise that this is a very sensitive environment. He is happy that the AWARE project is here to support efforts, to inform people, etc. He mentioned the importance of PPP (public private partnerships) and the fact that there is a fourth P that emphasises personal involvement. Also mentioned the upstream influence of Russia (where the small Daugava there is not a priority), and Belarus (who only has tourists coming to Jurmala to enjoy holidays, but not talking about upstream management). *Rolands* also talked about the new Marine Law, as one step in the large amount of work that still needs to be done. There needs to be a mix of national, regional, and international legislations. Last but not least there is the important part of public involvement. With that he closed and gave the word back to *Kristina*.

*Kristina* then gave a short presentation of the AWARE project, the same as she used at the workshop. The slide on the relevance of AWARE’s work for the GoR was also used to present the agenda for the day, which was a very good way of presenting the topics and the day’s outlook. *Kristina* then went over the materials that participants received with the registration: the AWARE leaflet for more information on the project (linking to the other 2 cases), a few of the presentations (inviting participants to leave their email address to receive the others later), and the evaluation (which she stressed is important to improve the future research projects). Then she introduced *Baiba Zasa* from the Latvian Ministry for the Environment.

*Baiba* started with an overview of the International marine policy framework. She then went into more detail on the Baltic Sea regional issues, and the laws guiding their work. The first one is the Marine Strategy Framework Directive (2008), which has been transposed into Latvian Law, last Thursday adopted by the Parliament! First she focused on a regional discussion, then the national level. She made it clear that the Marine Directive and the HELCOM Baltic Sea Action Plan (BSAP) work hand in hand and their goal is to achieve good environmental status by 2021. The requirements of the BSAP are quite tough for Latvia, but it allows a flexible approach for countries to choose the most effective and efficient, relevant, and cost-effective methods to reach those goals. Besides actions in municipal waste water sector or agricultural sector they have also introduced restrictions on P in laundry detergents (since June). Latvia’s BSAP is a tool for the implementation of the Marine Strategy, and vice versa. There is also a National Environmental policy Strategy 2009-2015 (an umbrella environmental policy planning document that includes air, water, earth, nature, and climate). It is collaboration between the Ministry of the Environment along with other ministries that integrate this strategy into sectoral development strategy documents and legal acts. The chapter on water looks at global and regional measures in the field of marine environmental protection, the status of the Baltic Sea and Latvian marine waters, and the quality of inland and ground waters. So the health of the marine

waters has become an indicator for the health and status of water resources in general. The new Law on Marine Environment Protection and management applies to all Baltic Sea marine waters under the jurisdiction of the Republic Latvia (including EEZ). General principles applicable are regional cooperation; ecosystem approach (including integration of environmental aspects into other policies); adaptive management; and scientific knowledge based approach.

*Kristina* opened the floor for questions. There are none, so the word is given to Rene Reisner from the Ministry of the Environment in Estonia.

*Rene* talked about different actions in their policy framework, their costs, reasons, and what the expected outcomes are. There are different water types available to us and we should differentiate between riverine, coastal, and marine waters. For Estonia, the focus when looking at the Gulf of Riga is on river basin management planning. The law that has just recently been adopted for marine waters in Latvia, is still being elaborated in Estonia, so marine waters are not so well regulated there. Rene would like that their legislation would focus on nutrients, and the eutrophication caused by them. For marine waters the good status objective is by 2020, but for coastal waters it should be achieved by 2015. He explained that behind these goals/objectives are actually quite specific actions and activities. He has no idea yet how to combine the actions to achieve this good status in both marine and coastal waters. Rene also presented a good slide on the trends in various policy drivers for the future. From that slide it is clear that waste water and sewage issues are decreasing in importance as a driver. Waste water from areas not connected with systems is important but they are not a hugely increasing pressure (it pretty much is evened out by migration to cities). Drivers that are increasing in importance include agriculture, water reservoirs and impoundments, and mining of minerals. These issues will have an impact whatever the policy decisions are made. Currently, almost 93% of N discharges are coming from agriculture, and about 77% of P → this means that this is one of the most important issues to deal with for both coastal and marine waters. Rene then gave an example that shows changes in Nitrate concentrations in groundwater, which clearly show a close connection to the current policy during specific times. For example the levels increased rapidly after EU membership, due to the increasing funds available for farmers. Currently the status of the coastal waters is moderate, but it is not based on scientific measurements but rather on an extrapolation of the „moderate“ status of the marine waters. Today most of the money goes to the improvement of waste water collection treatment systems. We can only ask whether we have our priorities are in the right place, because as we saw earlier this area does not signify such a significant pressure. There is also a question of who will pay for certain costs. When we look at where the cost efficiency is highest, it is also in the agricultural sector, but about 90% of the needed money is missing in that sector.

There were some questions on this presentation, for example about ports. This is a growing risk, which has not been yet considered. There is still some oil transportation going on, but not as much as before (5-6 years ago), which was from Russia. Two persons asked the same question, which may reflect a difficulty of working in English (?). Bärbel also asked why it is easier to find funds for other measures than agricultural activities. Rene mentioned that European funds go directly to waste water treatment improvements for example. It is not so for agricultural measures, and when all the available funds and relevant organisations were added up, it was found that 90% were still missing. There was also a question on whether climate change effects or forestry practices have impacts. Yes, after forest cuttings are done there is an increase in nutrients but there a measures in place to decrease these effects. Still, it seems not enough. Water managers see clear increases in nutrients after clear cutting, but there is not much they can do, since the forest managers have taken the required measures. For climate change there are no specific studies for Estonia. They have looked at the studies for Sweden and discussed how Estonia might be affected, e.g. in Lake Peipsi. But there is no further investigation to compile existing information on water effects. They are planning however, to start compiling the information from existing studies.

*Kristina* then gave the word to Peter and Bärbel. Peter presented the presentation from Andreas, about the current state of GoR (Andreas' son was very ill and Andreas could not make it back to Riga on Sunday).

*Peter* talked about the Baltic Sea being affected by eutrophication, hazardous substances, loss of biodiversity, etc. Currently the status is not better than „moderate“. This presentation is the same as Andreas presented at the workshop in Jurmala. Peter presented a new slide on field observations and satellite data showing cyanobacteria blooms. This shows that toxic blooms have been decreasing in the last few years. Peter gave the word to Bärbel.

*Bärbel* mentioned that she will switch from mostly marine data to coastal waters. She addressed Rene and acknowledged that this presentation will include a very Latvian point of view. She also mentioned that the biggest problem for the coastal waters of Latvia is the loss of biodiversity. The algal vegetation is negatively affected by eutrophication due to the increased turbidity in the water. Perennial species then get replaced by annual species, which overtake the area, decrease oxygen, etc. Although the macroalgae in the GoR are affected by eutrophication, but „good“ status is difficult to define. Additionally, benthic animal communities are in a good to moderate condition. However, what happens with eutrophication (e.g. in the southern GoR by the mouth of the Daugava, in the late 80s and early 90s) is that sensitive species were replaced by insensitive ones. There is also a difficulty to collect data, since some years only have one sample on which to base trends.

There was a question about the indicator of a „good“ water visibility, and on the way in which you measure that.

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### *Coffee Break*

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*After the coffee break we seem to have lost about half of the participants ☹*

*Kristina* gave a quick background on the workshop and introduced Karin and Anda.

*Anda* gave a short introduction, *Karin* talked about the next few slides, and *Anda* ended with the policy-specific recommendations. Although there was a very brief electricity shortage and interruption in the projection, but since the participants had printed slides we were able to continue. Both presenters did a great job making the statements come alive (using examples from the workshop both from their own experience, and from what they learned during the 2 days), and I saw the policy makers really make note of their statements.

*Kristina* opened the floor only for clarifying questions, but there were none. She then introduced the two next presentations on the scenarios, from Peter and Bärbel.

*Peter* talked about urban waste water treatment to begin with. He used many slides that were already shown in the workshop, by Andreas, in an order that made more logical sense. Peter used a nice tennis example to explain what a model is. There is a question for me here, what could have been a better way to present these issues that are so similar to the way they were presented in the workshop... Overall, Peter did a better job explaining the model, in my opinion (but it is still the same presentation). He then moved on to the question of „who should pay“ for pollution reduction measures, and ended with some conclusions thereafter.

*Kristina* invited Bärbel to present first and then will open the discussion later.

*Bärbel* mentioned that she and Peter were still a team, even though the slides are not put together, but also that they disagree on some things. The main difference between the two models is that hers treats both P and N in the coastal and marine waters. She gave the same presentation as in the workshop, as far as I can tell. She made clear that if you have a model that does well in predicting the past, then you can perhaps use it as a

fairly good indication of the future. Bärbel also kept all the slides showing her model's view of the future, which were not well understood by the citizens, and most likely not understood by the participants at the conference. If we implement the BSAP there is a bit of a time lag in the system, it takes a longer time for the concentrations to stabilise. She agrees with Peter and Andreas that the decline of about 20% in primary production will mean a reduction in fish biomass, but she does not know exactly how much – depends also on other things.

Basically, there was no chance for the scientists to do any changes to their models based on the thoughts of the citizens.

Kristina asked both presenters if their models really achieve „good environmental status“. Bärbel says probably yes, but she would need to discuss it with colleagues. Kristina then introduces the panel discussion.

Per introduces the one-hour long panel. He gives a global outlook for the introduction. A new speaker is on the panel, Yuri..., Latvian scientist. Two topics will be discussed: pollution prevention measures, and interaction between science, citizens, and policy making. After each of the two topics Per will open the floor for questions.

### ➔ What pollution reduction measures?

Rolands wants to concentrate on the Baltic Sea, not on global issues. CAP and the common fisheries policy should be changed perhaps. Basically the necessary legislations are in place, but regionally they can be more adapted and modified.

Rene thinks we should do what we agreed to do, meaning continue improving the status of waste water treatment, look for new measures for agricultural sector, and make sure we achieve what we set out to do, not look for new measures all together. But transboundary pollution should perhaps be considered more, especially air pollution, which is not really covered by other measures that we can use. We should look for more strict ways to deal with this transboundary pollution.

Karin agrees that we have to think locally first (e.g. focus on sewage in Latvia and agriculture in Estonia), but she does not think we need more laws. There are enough laws but we need enforcement and monitoring – ways to make sure that current laws are actually working.

Yuri addressed agricultural practices, which he says is a known evil. But he thinks in the GoR are some additional (major) issues, like forestry. He knows there are guidelines and measures to minimise impacts from forestry but he has not heard as much about them than about agricultural measures. Maybe there doesn't need to be a law, but other techniques to implement these measures, which should be pragmatic and cost-effective. Because the problem with laws is that you then need more policemen and enforcement, which is expensive, etc.

### ➔ Do you think it is achievable to go from moderate to good in the timeframes given (2015 for coastal and 2021 for marine)?

Yuri thinks it is not feasible. Even with all the money in the world, it would still take 10-20 years. So no way to achieve this goal.

Karin says it is ok to say it is not realistic, but we should not say it is not achievable, because we cannot give up this future, it is our future.

Rolands talks about HELCOM and the importance of putting things down into legislation, because otherwise you don't get money for it. He also agrees with the comment about forestry, since forest makes up about

50% of the land in Latvia. Need more stringent measure on WWT, than the European Directive, but HELCOM is not currently binding.

*Rene* believes there will be some kind of adjustment of society to the way things are now, e.g. that we'll agree at some point that a „moderate“ status is as good as it gets. The changes will probably come when we have the financial means to go from the current measures to some that are more effective. There will be improvements from what we do today, but not significant. Significant improvements will only happen when there are enough funds.

### → Who should fund these measures?

*Rene* continues by saying that we don't have this money today and the ones who should pay are those who pollute (PPP). The accountability to pay is currently very low.

*Karin* asks if there are any ideas on how to solve the problem that we have now, where a polluter is allowed to continue polluting when they cannot afford to pay. She asks basically why we do not make an example of some polluters, but simply shutting them down.

*Rene* gives some examples from real life and points to the difficulty of choosing one agricultural producer for example and shutting them down!!

*Ronalds* talks about the social problems that are addressed by „polluters“ it is very difficult to shut them down, because they provide essential services. He also mentions the different amounts of financial support that agricultural producers for example receive in the EU, to explain why we cannot demand the same standards from Latvian farmers than from Greek farmers. The market should be fair, then we can talk about full market costs.

*Aivers* also asks a concrete question about who exactly the polluters are, but it seems no one can answer this question.

*Yuri* explains that most of our activities produce pollution. He also describes the difference between the amount of pollution that the environment can tolerate, and the amount of pollution that the environmental cannot tolerate anymore. Do we know the difference between the two? Look at the example of increase in phytoplankton – bad, and the resulting increase in fish – good. He also mentions that citizens are responsible to change, because politicians reflect what citizens want. When citizens come and say: we are willing to pay twice the amount of taxes, then we will move in a different direction.

*Per* also opens the floor to the audience.

*Bärbel* brings up the issue of the manure pits that we talked about on Saturday, which actually provide some benefits in the long term (but farmers only see the immediate costs) – are we moving in a direction where we are just taking the easy way?

*Audience member* also brought up the point about priorities.

*Yuri* describes the terms „good and bad“ as very human-based and not scientific-based (what is pre-industrial?). He also gives the example of Denmark who started planting trees in the 1600s, meaning they've had problems with managing their resources for centuries. So how and why do we choose some index year to make our baseline? Science gives mostly options, and then citizens can say whether or not they are ready to pay for the different options. Only if they are ready can the government go ahead with a certain measure.

*Karin* makes a point that citizens only receive a part of the information, such as something is „good or bad“. By not explaining why something is a good option this is not enough to help them make a decision. If a person does not understand something they also will not ask. We need more dialogue such as this.

*Rolands* is happy to sit on such a panel, but he is not a scientist and he does not understand the nuances between moderate, good, and high, but he has seen what a „bad“ situation is like in the ocean (e.g. garbage and sewage in the ocean). Not quite sure about the example, but he agrees we „need to do more, need to involve all stakeholders, and need to find more finances“.

*Per* says that this comment brings us to the second topic of this panel discussion, which is the connectivity issue.

### ➔ Is there a need for cooperation between citizens, scientists, and policy-makers?

Yes, they all raised their hands! ☺

### ➔ What are the benefits? Just for the sake of cooperation?

*Rene* mentions that when we plan or implements something and we want to see the results and effectiveness, it is important to work with scientists; otherwise we don't understand why certain things happen. Lately they have been gathering together scientists and decision-makers to talk about certain issues, which shows how difficult it is for them to agree.

### ➔ What about the citizens?

*Yuri* agrees that this event shows this importance of this, because citizens clearly want to know and scientists apparently cannot explain things well enough. He would like to point to journalists as potential translators. He thinks there are not enough environmental journalists in Latvia.

*Rolands* would also like to support volunteer monitoring. He mentioned some examples from schools, etc, and the huge amount of people that do this voluntarily in the US!

### ➔ How should we increase this cooperation in practice? Besides this AWARE project. Public hearings?

*Rolands* mentioned the „green schools“ and municipalities as good tools and channels. The young generation is key.

*Karin* brings up the idea of media campaigns, which done consistently can in time raise public awareness very effectively.

*Rene* mentioned working together with stakeholders and the public on a regular basis and consistently, not just on a project basis. Regular meetings could be set up to discuss different topics, but the most important thing is the regular manner. It also has to be flexible. There are ways to communicate information but they don't get feedback. So the information should be more tailored and it should be two-way, not just a one-way monologue.

*Kristina* asked about the lessons that could be learned from river basin management.

*Rolands* would like to wait and see what happens at the implementation stage, and then learn the lessons. He suggests having a stakeholder forum on this issue in 2012.

*Karin* asks if this is a promise, or if they are really going to do it. Basically the answer is „maybe“.

*Per* opens the floor to general comments and questions.

*Ieva* asks about the increase in allergies around the world and thinks it is connected to the chemicals in the water. What will governments do in the future to develop more biological agriculture? Is round-up used here and if so how does it affect our water and ground water? She understands it improves agricultural production, but how does it impact health and environment? Also bio products are more expensive, so this is a big problem of affordability.

*Rene* mentioned that we have to understand global problems and policies. He also says it is difficult to see which products are bio and which are not, our existing environment may be so polluted that there are still trace contaminants in our food. What can be done today, however, is only to ensure proper monitoring of these products – we need products because we need to eat.

*Ronalds* adds that this is a global market. There are EU regulations and we should abide by them. He agreed that their ministries focus on water quality not on health. He also mentioned that even if we don't use DDT anymore in Europe, they are using it a lot in Africa.

*Ieva* does not seem satisfied by their answers.

*Per* asks panellists for final words.

*Ronalds* talks about the Latvian environmental policy, and he is happy to see a new audience discussing these issues. The problem he sees is that not a lot of people are getting involved in these policy discussions. Legislations and financial resources are not enough; the public energy needs to be involved.

Panellists were thanked and *Kristina* ended the conference. She thanked the participants, and reminded them to fill out the questionnaires. Participants will receive updates about this project. She also invites participants to check out another scientific project hosted by BEF.

## Annex 14– Citizen Evaluation Questionnaire for the Gulf of Riga Workshop

*(Jurmala, October 29-30, 2010)*

The purpose of this questionnaire is to tap on your impressions of the Gulf of Riga Citizen Workshop of the AWARE project – so that we can learn and become better in subsequent events at the local level. Note that this is NOT a test and therefore there is also no „right“ or „wrong“ answer to the following questions. We welcome all inputs, positive and negative. In order to safeguard your privacy and confidentiality, your answers will remain anonymous. Please answer the questionnaire, enclose in the attached envelope and return to any of the AWARE partners participating at the workshop.

### 19. How would you assess your level of knowledge on the following subjects PRIOR to this Workshop?

#### *EU Water Framework Directive*

- |   |                          |
|---|--------------------------|
| No knowledge whatsoever                         | <input type="checkbox"/> |
| Had heard about it but no more                  | <input type="checkbox"/> |
| Learned about it in preparation of this meeting | <input type="checkbox"/> |
| Had a pretty good knowledge                     | <input type="checkbox"/> |

#### *Gulf of Riga coastal area and the environmental pollution problems faced*

- |   |                          |
|---|--------------------------|
| No knowledge whatsoever                         | <input type="checkbox"/> |
| Had heard about it but no more                  | <input type="checkbox"/> |
| Learned about it in preparation of this meeting | <input type="checkbox"/> |
| Had a pretty good knowledge                     | <input type="checkbox"/> |

#### *Science-Policy Interface and Citizen Participation*

- |   |                          |
|---|--------------------------|
| No knowledge whatsoever                         | <input type="checkbox"/> |
| Had heard about it but no more                  | <input type="checkbox"/> |
| Learned about it in preparation of this meeting | <input type="checkbox"/> |
| Had a pretty good knowledge                     | <input type="checkbox"/> |

### 20. Please assess what you have learned during the last two days:

- |                             |                          |
|-----------------------------|--------------------------|
| Have learned a great deal   | <input type="checkbox"/> |
| Have learned a little       | <input type="checkbox"/> |
| Have learned nothing at all | <input type="checkbox"/> |



**21. If yes, what did you learn most about?**

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**22. How satisfied are you with the single sessions? Please rate on a scale of 1 (not at all) to 5 (very much)**

*First session (1<sup>st</sup> day, 9:40 – 10:10): Introduction to the objectives of the workshop and scenarios*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Second session (1<sup>st</sup> day, 10:10 – 12:30): Present situation in the Gulf of Riga*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Third session (1<sup>st</sup> day, 13:30 – 16:00): Scenarios for the future*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Fourth session (1<sup>st</sup> day, 16:30 – 18:30): What policy is doing*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Fifth session (2<sup>nd</sup> day, 9:10 – 13:00): Achieving a better quality of waters in the Gulf of Riga*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Sixth session (2<sup>nd</sup> day, 14:00 – 15:30): Sustainable development of the Gulf of Riga resources*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Seventh session (2<sup>nd</sup> day, 16:00 – 17:30): Recommendations for actions on connectivity between science – policy makers – citizens*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Overall satisfaction*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

**23. How satisfied are you with the discussion elements of this workshop? Please rate on a scale of 1 (not at all) to 5 (very much)**

*Overall satisfaction*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Moderator*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Communication tools and techniques*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Quality of discussions*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Discussion outputs*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

**24. How satisfied are you with the logistics of this workshop? Please rate on a scale of 1 (not at all) to 5 (very much), and N/A for not applicable.**

*Overall satisfaction*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

*Location of workshop*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

*Organization of workshop*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

*Catering and lunch*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

---

*Transport modalities*

☐

1

☐

2

☐

3

☐

4

☐

5

☐

N/A

---

*Accommodation arrangements*

☐

1

☐

2

☐

3

☐

4

☐

5

☐

N/A

**25. Name one thing you liked especially about this First Citizen Workshop and one thing you did not like so much**

I very much liked ....

I did not like ...

**26. What would you have done differently had you been involved in the workshop organization?**

**27. What recommendations or expectations do you have regarding the next workshops?**

**28. Did the workshop meet your expectations? Please rate on a scale of 1 (not at all) to 5 (very much)**

☐

1

☐

2

☐

3

☐

4

☐

5

**29. How satisfied are you with the work of formulation of the Citizens' Statement? Please rate on a scale of 1 (not at all) to 5 (very much)**

☐

1

☐

2

☐

3

☐

4

☐

5

**30. Any other comments**

## Annex 15 –Evaluation Questionnaire for the Gulf of Riga Conference

The purpose of this questionnaire is to tap on your impressions of the Gulf of Riga Local Conference of the AWARE project. Note that this is NOT a test and therefore there is also no „right“ or „wrong“ answer to the following questions. We welcome all inputs, positive and negative. In order to safeguard your privacy and confidentiality, your answers will remain anonymous. Please answer the questionnaire and return it to the receptionists at the room entrance.

### 31. Could you please indicate what of the following groups you belong to?

- Professional associations (farmers, fishers, other) ☐
- Civil society (NGOs, other) ☐
- Scientists/academics ☐
- Policy-makers (public water agencies, environmental management institutions, other policy-making bodies) ☐
- Citizen ☐
- Other, please fill in:

### 32. Did you participate in the Gulf of Riga Local Workshop (29 – 30 October)?

Yes ☐ No ☐

### 33. How would you assess your level of knowledge on the following subjects PRIOR to this Conference?

#### *EU Water Framework Directive*

- No knowledge whatsoever ☐
- Had heard about it but no more ☐
- Learned about it in preparation of this meeting ☐
- Had a pretty good knowledge ☐

#### *Gulf of Riga coastal area and the environmental pollution problems faced*

- No knowledge whatsoever ☐
- Had heard about it but no more ☐
- Learned about it in preparation of this meeting ☐
- Had a pretty good knowledge ☐

*Science-Policy Interface and Citizen Participation*

No knowledge whatsoever ☐

Had heard about it but no more ☐

Learned about it in preparation of this meeting ☐

Had a pretty good knowledge ☐

**34. Please assess what you have learned today:**

Have learned a great deal ☐

Have learned a little ☐

Have learned nothing at all ☐

**35. If yes, what issues did you learn most about?**

**36. How satisfied are you with the single presentations? Please rate on a scale of 1 (not at all) to 5 (very much)**

*Introduction to the AWARE project*

*(Kristina Veidemane, Baltic Environmental Forum)*

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

*Current policy framework on coastal and marine protection in the Baltic Sea and the Gulf of Riga*

*(Ministry of the Environment of Latvia; Ministry of the Environment of Estonia)*

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

*Water status of the Gulf of Riga*

*(Andreas Bryhn, Uppsala University; Bärbel Müller-Karulis, Latvian Institute of Aquatic Ecology)*

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

*Possible future of the Gulf of Riga and recommendable policy measures*

*(Citizen group representatives, Latvia and Estonia)*

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

*Scenarios of potential changes in the Gulf of Riga*

*(Andreas Bryhn, Uppsala University)*

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

*Panel discussion on the recommendations of the citizens*

*(Moderator: Per Stalnacke, Bioforsk)*

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

*Overall satisfaction*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5

**37. How satisfied are you with the discussion elements of the Conference? Please rate on a scale of 1 (not at all) to 5 (very much)**

*Moderator*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5

*Speakers*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5

*Quality of presentations*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5

*Output of the debates*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5

*Overall satisfaction*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5

**38. How satisfied are you with the logistics of this Conference? Please rate on a scale of 1 (not at all) to 5 (very much) or pick N/A if not applicable.**

*Location of the Conference*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ N/A

*Organization of the Conference*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ N/A

*Catering and lunch*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ N/A

*Overall satisfaction*

☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ N/A

**39. Name one thing you liked especially about this Conference and one thing you did not like so much**

I very much liked ....

I did not like ...

**40. What would you have done differently had you been involved in the Conference organization?**

**41. What recommendations or expectations do you have regarding the European Conference?**

**42. Did the discussion contribute practically to your daily work? Please rate on a scale of 1 (not at all) to 5 (very much)**

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

**43. Did the Conference meet your expectations? Please rate on a scale of 1 (not at all) to 5 (very much)**

- ☐ 1
- ☐ 2
- ☐ 3
- ☐ 4
- ☐ 5

**44. How satisfied are you with the debate on the Citizens’ Statement? Why?**

**45. How satisfied are you with the Local Authorities speeches? Why?**

**46. Any other comments**



## Annex 16 – Citizen Questionnaire Sacca di Goro

### Citizen Questionnaire – Evaluation of the Sacca di Goro Citizen Workshop

(Goro, October 15-16, 2010)

The purpose of this questionnaire is to tap on your impressions of the Sacca di Goro Citizen Workshop of the AWARE project – so that we can learn and become better in subsequent events at the local level. Note that this is NOT a test and therefore there is also no „right“ or „wrong“ answer to the following questions. We welcome all inputs, positive and negative. In order to safeguard your privacy and confidentiality, your answers will remain anonymous. Please answer the questionnaire, enclose in the attached envelope and return to any of the AWARE partners participating at the workshop.

#### **1. How would you assess your level of knowledge on the following subjects PRIOR to this Workshop?**

##### *EU Water Framework Directive*

- |   |                          |
|---|--------------------------|
| No knowledge whatsoever                         | <input type="checkbox"/> |
| Had heard about it but no more                  | <input type="checkbox"/> |
| Learned about it in preparation of this meeting | <input type="checkbox"/> |
| Had a pretty good knowledge                     | <input type="checkbox"/> |

##### *Sacca di Goro coastal area and the environmental pollution problems faced*

- |   |                          |
|---|--------------------------|
| No knowledge whatsoever                         | <input type="checkbox"/> |
| Had heard about it but no more                  | <input type="checkbox"/> |
| Learned about it in preparation of this meeting | <input type="checkbox"/> |
| Had a pretty good knowledge                     | <input type="checkbox"/> |

##### *Science-Policy Interface and Citizen Participation*

- |   |                          |
|---|--------------------------|
| No knowledge whatsoever                         | <input type="checkbox"/> |
| Had heard about it but no more                  | <input type="checkbox"/> |
| Learned about it in preparation of this meeting | <input type="checkbox"/> |
| Had a pretty good knowledge                     | <input type="checkbox"/> |

#### **2. Please assess what you have learned during the last two days:**

- |                           |                          |
|---------------------------|--------------------------|
| Have learned a great deal | <input type="checkbox"/> |
| Have learned a little     | <input type="checkbox"/> |

Have learned nothing at all ☐

**3. If yes, what issues did you learn most about?**

**4. How satisfied are you with the single sessions? Please rate on a scale of 1 (not at all) to 5 (very much)**

*First session (1<sup>st</sup> day, 10.00 – 11.00): Introduction to the key themes of the Workshop*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Second session (1<sup>st</sup> day, 11.15 – 13.00): Ecological management of Sacca di Goro Lagoon: the present situation*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Third session (1<sup>st</sup> day, 14.00 – 15.30): Ecological management of Sacca di Goro Lagoon: situation in perspective*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Fourth session (1<sup>st</sup> day, 15.45 – 17.00): Ecological management of Sacca di Goro Lagoon: how to improve cooperation among actors*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Fifth session (2<sup>nd</sup> day, 09.30 – 11.00): assessment and synthesis of first day discussions and results*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Sixth session (2<sup>nd</sup> day, 11.15 – 13.00): assessment of Sacca di Goro future options: identification of options, criteria and priorities*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Overall satisfaction*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

**5. How satisfied are you with the discussion elements of this workshop? Please rate on a scale of 1 (not at all) to 5 (very much)**

*Moderator*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Communication tools and techniques*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Quality of discussions*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Discussion outputs*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

*Overall satisfaction*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5

**6. How satisfied are you with the logistics of this workshop? Please rate on a scale of 1 (not at all) to 5 (very much) or pick N/A if not available.**

*Location of workshop*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

*Organization of workshop*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

*Catering and lunch*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

*Transport modalities*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
1	2	3	4	5	N/A

*Overall satisfaction*

<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
-----------------------	-----------------------	-----------------------	-----------------------	-----------------------

1

2

3

4

5

**7. Name one thing you liked especially about this Workshop and one thing you did not like so much**

I very much liked ....

I did not like ...

**8. What would you have done differently had you been involved in the Workshop organization?**

--

**9. What recommendations or expectations do you have regarding the Local Conference?**

--

**10. Did the workshop meet your expectations? Please rate on a scale of 1 (not at all) to 5 (very much)**



1

2

3

4

5

**11. How satisfied are you with the work of formulation of the Citizens' Statement? Please rate on a scale of 1 (not at all) to 5 (very much)**



○

1

2

3

4

5

## 12. Any other comments

--

## Annex 17 – Questionnaire for Sacca di Goro

### QUESTIONARIO

*I dati raccolti verranno utilizzati esclusivamente dai membri del consorzio AWARE per gli scopi del progetto.*

Nome \_\_\_\_\_ Cognome \_\_\_\_\_

Data di Nascita \_\_\_\_\_ Nazionalità \_\_\_\_\_

Sesso: Maschio ☐ Femmina ☐

Indirizzo:

Via \_\_\_\_\_ N° \_\_\_\_\_ CAP \_\_\_\_\_

Telefono \_\_\_\_\_ E-mail \_\_\_\_\_

Istruzione: Primaria ☐ Secondaria ☐ Università ☐

Attività: Lavoratore ☐ Studente ☐ Pensionato ☐ Disoccupato ☐ Casalinga ☐

Tipo di occupazione: Autonoma ☐ Imprenditore ☐ Dipendente ☐

Tipo di famiglia: Coppia con figli ☐ Coppia senza figli ☐ Single ☐

**Se sei occupato, specifica se il tuo lavoro è a tempo pieno o parziale e il settore di attività:**

Tempo pieno ☐ Tempo parziale ☐

Settore di attività: \_\_\_\_\_

**Quale è il vostro rapporto con l'ambiente costiero di riferimento:**

Vivo nei dintorni (entro 10 km) ☐ Lavoro/Fonte di guadagno (es: pesca, attività turistiche, industrie ecc.) ☐

Vacanza nei Week-end ☐ Vacanza nella stagione turistica ☐

Altro (specificare): \_\_\_\_\_

**Hai partecipato a campagne di sensibilizzazione ambientale**

- correlate alle organizzazioni presenti in questo progetto? Si ☐ No ☐

- correlate ad altri contesti e/o altre tematiche? Si ☐ No ☐

**Conosci l'Inglese?** Si ☐ No ☐

• capacità di lettura 1 2 3 4

• capacità scritta 1 2 3 4

• capacità orale 1 2 3 4

((1 = poco; 2 = buono; 3 = molto buono; 4 = eccellente)

**Usi Internet e possiedi una e-mail?**

Si ☐

No ☐

**Spiega per cortesia perché desideri partecipare ad una conferenza di cittadini**

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---

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**Spiega per cortesia quale è la tua attuale percezione della qualità dell'ambiente costiero con il quale siete più collegati: buona o cattiva e perché ? Hai idea di come possa essere migliorata ?**

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**Si prega di fornire ogni ulteriore informazione si ritenga utile per essere selezionati**

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\_\_\_\_\_  
Luogo e Data

## Annex 18 – Protocol of Sacca di Goro Conference

### AWARE LOCAL CONFERENCE

12<sup>th</sup> October 2010

The AWARE Local Conference for Sacca di Goro takes place in Canneviè, a locality nearby Codigoro (Ferrara) and close to the sea. It is the first sunny day after many rainy days. The weather is fine to be in shirt-sleeves. The building hosting the Conference, owned by the Province of Ferrara, is settled among cane thickets, channels and damp zones. The landscape is pleasant and it visibly shows men's interventions in shaping and modeling the land. The building is warm and cozy, with a nice wooden coffered ceiling and terracotta floor. It is divided into two main rooms: an entrance hall and the main room. Toilettas, in the building, are easily accessible. The main room, a long rectangle, is light (many wide windows and French doors) and comfortable. Chairs are arranged into eight rows, seven for each. A slide shows screen is set on the short side of the rectangle, opposite to the entrance. Sitting in the furthest row, the screen is easy to watch to. Pictures of the lagoon and of local avifauna are hanged on the walls, informative (scientific and touristic) materials about Sacca di Goro are at disposal to consult and take away.

Before the Conference start, Carlo Sessa (CS) from ISIS meets (09.00 – 10.00) the ten citizens to sum up the proceedings and to review their intervention. The ten citizens look emotionally involved and a bit positively anxious. Citizens will sit between the conference table and the audience, giving their backs to the wall on the left side.

At the entrance two women are on charge of registering participants and giving them a folder containing:

- A leaflet with the Conference program
- The two AWARE newsletters
- The evaluation questionnaire
- Some informative material about the Province of Ferrara
- A brochure (by the Province of Ferrara) about the accessibility via web of Sacca di Goro monitoring data
- Blank sheets

At the 10.07 the Conference starts. About 50 people are in the room, this including AWARE partners and the ten citizens.

CS welcomes present people and sums up the Conference time plan. He also explains the choice of citizens spatial disposal and underlines the focus of the Conference: the citizens' statement. He speaks loud and clear, standing on the raised part of the floor, aside the lectern. He finally introduces the next speaker, Marcella Zappaterra (MZ), president of Province of Ferrara.

h. 10.10. MZ is sit at the table conference. She congratulates with organizers for logistics and for the constructive attitude carried forward along the AWARE process. She sounds to be totally aware of AWARE objectives, scope, methodologies and process. She speaks very confidently, not reading and with a conciliatory tone.

h. 10.20 CS, who defines himself both as the facilitator and project manager, stands aside the lectern and starts his presentation. He uses an hand microphone and explains objectives and process of the project by

means of slide presentation. He uses to indicate slides while speaking. In the meanwhile, other people are joining the conference and the room is almost full. Some people are browsing the folder content, most is listening. He finishes the presentation by displaying the time plan: a change has been made by shifting the citizens' statement presentation before UNISI's one. CS explains why of having changed the schedule. The feeling is of having too much information all in once.

h. 10.37 Pierluigi Viaroli (PV), full professor of ecology from Parma University, introduces himself and reveal to be really excited, since he has been working for twenty two years on projects regarding Sacca di Goro. He stands behind the lectern, he mainly looks at the first row (he sometimes gives a glance to slides) and gesticulates. He starts listing data about Po basin and its features, both economical and natural ones. He also remembers and shows pictures of events to support his statements. Very impressive. He sounds as very confident in speaking in front of many people although his voice is a bit breathless. He makes large use of scientific terms, giving for granted their comprehension. There are many slides, too. He becomes aware of being late and he begins speaking faster. The concepts he insist on are "scale (geographic and temporal)" and "natural vs anthropic equilibrium".

h. 10.56 Few people begin to stand and abandon the conference, a little confusion rises. CS reminds speakers to be on time and explains the sense of scientific interventions in the conference. He asks people to register for free interventions at Maria Teresa Belluscio (MT) who is taking minutes of the conference. CS, although he is the moderator, is very concerned into the process and his attitude fosters people to participate actively.

h. 11.00 It is the turn of Andrea Calori (AC), from Poliedra – Politecnico di Milano. Some people at the bottom of the room are chatting. He stands aside the lectern, he gesticulates pretty much. He uses a clear, warm and quiet tone of voice, speaking moderately slowly. He is very incisive on some key steps of his presentation, he indicates slides and moves. He manages to resume concepts described within the previous presentations, he clearly explains complex charts. The light coming from the left side of the building reduces contrast and disturbs the vision; small characters used in some slides cannot be distinguished from the furthest rows. He jumps some slides and he fast close onto the last slide that resumes what he has described till that moment.

h. 11.18 Coffee break. Sunny weather, really nice day. Good atmosphere among participants, beautiful landscape and tasty food.

h. 11.45 Some people have not reached the room yet. CS, again, reminds to presents the aim of the second part of the morning. People return late.

h. 11.49 Citizens read their statement. Five of ten stand front of the audience, giving their back to a big board titled "I Love Goro". A sheet with the suggested options of interventions is placed on the big board. The options are handwritten, thus not legible from a distance. At their left another board with other options of interventions about water quality, grouped into "local" and "global". People attending the conference do not have the paper of the statement for a precise and previously motivated choice: to listen. But it is hard to critically follow their speech without a support.





Figure 50: citizens read their statement

h. 11.59 Chiara Mocenni (CM) from the Università di Siena is now speaking. Alessandro Luè (AL) and AC move the boards aside, since they do not allow to see the screen. CS takes advantage of the moment for resuming once again objectives and time plan of what is going to follow. CM restarts. She stands aside the lectern and gesticulates on average. She does not read her slides but talks on to them. She clears up what is a Decision Support System and she sometimes make use of terms maybe not understandable to all. Her tone of voice is clear, loud, incisive and musical. She speaks slowly. In the meanwhile, two people more reach the conference. Some texts are too small but CM is really effective in explaining charts.

h. 12.20 CS calls speakers to take a seat at the conference table, since the debate is going to begin. CS takes a five minutes time to resume and to introduce the debate.

h. 12.25 The debate starts.

Stefano Martini representative for Legambiente Delta del Po (environmental association) stands up and asks for considering more the economical dimension concerning Sacca di Goro. Calm tone of voice.

Antonio Rubis Viviani, responsible of urban services for Goro Municipality, with a firm tone, asks to politics for tools, projects and rules. He is a bit embittered because he feels that politics runs after phenomena instead of planning and foreseeing.

Alessandra Ridolfi, from Associazione Consumatori, espresses positive feelings about the participatory methodology. She wonders if is it possible apply such a methodology even to other cases.

Mauro. Balestra from CNA (Confederazione Nazionale dell'Artigianato e della Piccola e Media Impresa) and vice-president of Navi Delta Consortium is curious and worried at the same time for tourism role in the Goro business. He wonders what is and what can be the value of tourism among the others.

h. 12.35 CS expresses his thoughts about the questions raised and assign questions to be answered to speakers at the table.

h. 12.38 The speakers answer, some of them resuming part of their presentation. Generally speakers tend not to answer just the question assigned by CS but to digress towards other raised topics. The audience is really silent and committed. One of the questions posed is answered by two citizens. They react by stating their concern about the concrete developments of the AWARE project but, at the same time, they underline the strong political importance of active participation in civic life: "the question should be: what can I do for my country?".

h. 13.04 CS re-points out what is the objective of afternoon works and he suggests to anticipate the start of the works. The continuous CS's interventions, although a bit long and repetitive, contribute on creating a nice mood of commitment and collaboration with the aim of getting together "as a team" to end of the process. Lunch break is offered in an another building (restaurant), close to the conference one.

h. 14.40 Works resumes. Initially few people enter the room, so that CS holds over. In the meanwhile, citizens' chairs rotate up to arrange as an amphitheater facing the audience. That is the best disposal for developing the following debate. CS welcomes the just arrived local authorities:

- Vincenzino Soncini, the major of Goro;
- Francesco Paesanti, member of the Emilia Romagna Po River Delta Park directorate;
- Davide Nardini, Assessor of Emilia Romagna Region for Budget, Structural Funds, Roads, Public Works and Soil Protection.
- Davide Bellotti, Assessor of Emilia Romagna Region for Tourism, Sport e Leisure Activities;

AL remembers to fill in the evaluation questionnaire and CS explains the meaning of the evaluation activity within the scope of AWARE project.

h. 14.45 Four citizens stand facing the audience and read the last part of their statement. Microphone does not work, they decide to go ahead without it. From the back of the room the volume is ok. About twenty persons, in addition to partners and citizens, are present at the moment.

h. 14.52 Debate is opened. Since no questions raise (perhaps because of the the post-lunch atmosphere), the question previously raised by Mr. Balestra, that did not receive answer, is re-posed. Since hand microphone does not work, speakers have to use the desk microphones.

h. 15.02 Diego Viviani, one of the ten citizens and also a stakeholder (he declares to be president of a clam farmers association with around eight hundreds associates) stands and makes his intervention. "What is the meaning of remove pollution?" (hand microphone is working now). He states that it is not possible and even recommended removing pollution from the Sacca di Goro. It is a really natural intervention about a today-citizen's responsibilities, about the existence of people that, although convinced that changing attitudes, changing something is complex, difficult and sometimes frustrating, do believe that "yes, it is possible!". The conference is touching the apex in terms of commitment and emotions. Diego Viviani prosecutes with a thought on the "chain of effects" phenomenon. His speech does help to enhance and feed collaborative atmosphere since it affects ideals and personal commitment.

- h. 15.11 CS remembers the final destination of citizens' statement and underlines the meaning of Diego Viviani's speech. He fosters new interventions: what would you suggest to citizen to say about EU directives? Which scenarios / case studies to consider? How to overcome political obstacles and lack of appropriate and timely policies?
- h. 15.18 Stefano Martini from Legambiente stresses constructively some passages of the statement.
- h. 15.20 PV takes the floor and explains the ecological hypothesis of average perturbation: the maximum number of species (i.e. biodiversity) does not correspond to no disturb at all: a light (also anthropic) disturb contributes to biodiversity.
- h. 15.24 CS says that, as the facilitator, he should not much intervene into discussions but he wants to answer to one of the questions raised in the morning about the methodological approach of AWARE project. He makes references to other European projects he has been involved in: MOVE TOGETHER and RACE, both featured by a participatory approach. He invites citizens to relate their impressions and thought about participation.
- h. 15.32 Arianna, in a very easy and excited way, tells her working experience within AWARE and what is the contribution of a participatory approach: although at a small scale, projects like AWARE can lead to important programs. She underlines the concrete aspect of the citizens' statement.
- h.15.37 In the meanwhile the room has been filled up. CS makes a last call for interventions before proceed with public authorities' interventions.
- h. 15.41 Since no one intervenes, the public authorities occupy the conference desk.
- h.15.42 The major of Goro, Vincenzino Soncini, prefers not to draw conclusions but advance some suggestions by his side of major. He is very glad of the choice of the Sacca di Goro as a case study and he underlined the great collaborative spirit of the initiative. He seems to be very excited, he gesticulates a lot and he expresses his regret for the intensive use of English terms in the presentations.
- h. 15.54 Francesco Paesanti starts remembering the contrasts raised decades ago in order to make a comparison with the opposite collaborative attitude perceived during the conference.
- h. 15.57 Davide Nardini He traces an historical frame of the Sacca di Goro land. A very discordant intervention, as if he has not been listening anything since he arrived till that moment. He tells about his mansions. He speaks standing, with no microphone and gesticulates. A true politician's speech. He mainly speaks about past things, no particular mention to AWARE project or to the suggested participatory approach. Really disappointing.
- h. 16.10 Davide Bellotti speaks from a chair, using the microphone. He sounds much more concerned than his colleague, D. Nardini. He stresses the particularity of being sat on the side of those who have to take decisions, resuming the meaning of Diego Viviani's interventions. The speech is generally confused but committed.
- h. 16.25 CS resumes the idea of a participatory approach and asks to D. Bellotti if it is just a dream or if it can be a real opportunity.
- h. 16.28 D. Bellotti answers by telling about similar experiences he has been involved, featured by the will of going beyond a mere local and utilitarian matter, but he also asserts that such an approach is long and

laborious. But he also feels that AWARE managed to touch something new and important. The awareness of a complex problem has to lead to an advanced table of work in order to finally make choices.

h. 16.38 R. Poletti, a citizen. He states that the same concerns the ASSESSORE has just finished to report are those that citizens felt and thought throughout all the AWARE process. Politicians with a good level of consciousness and sensibleness, can have good results. He does thanks and wishes a good journey back.

h. 16.40 CS greets all and closes the conference.

## Annex 19 – Protocol of Sacca di Goro Workshop

### AWARE LOCAL WORKSHOP MEETING

1<sup>st</sup> DAY –15 October 2010

Participants to the local workshop:

<i>Citizens and Partnes</i>		
Belluscio	Maria Teresa	Isis
Bencivelli	Silvano	Ferrara Province
Bernardi	Arianna	Citizen
Calori	Andrea	POLIEDRA
Camisotti	Fabio	Citizen
Fabbri	Marco	UNISI
Giordani	Gianmarco	UNIPR
Gori	Gilda	Citizen
Gori	Giovanna	Citizen
Detomati	Giulia	POLIEDRA
Liquete	Camino	JRC
Lonati	Arianna	Citizen
Lovo	Stefano	Ferrara Province
Lue**	Alessandro	POLIEDRA
Manfredini	Claudio	Citizen
Mocenni	Chiara	Unisi
Poletti	Roberto	Citizen
Scarpa	Angelo	Citizen
Sessa	Carlo	ISIS
Sparacino	Emiliano	Unisi
Veratelli	Maria Cristina	Citizen

Viviani	Diego	Citizen
<b>Stakeholders</b>		
Balboni	Giampaolo	WWF Ferrara Department
Barbieri	Cristina	Delta Ecologia Applicata Institute
Andreotti	Francesca	Delta Ecologia Applicata
Paesanti	Francesco	Clam Fishermen Consortium of Goro and PortoGaribaldi
Broccoli	Umberto	
Previati	Lucilla	Po Delta Park
Tornatore	Francesco	Po River Basin Authority
Valentini	Pietro	The Drainage Consortium of Ferrara Plain
Mondo	Valentino	Assonautica
Martini	Stefano	Circolo Legambiente "Po delta"

### **Introduction (9.15a.m. – 10.15 a.m.)**

The workshop takes place in the building of Provincia di Ferrara, in Goro. The room is big (there's a room for a hundred people) and bright. All but three citizens arrive in Goro on time. Printed versions of the presentation are available so that once the other citizens arrived they could easily understand what has happened.

The citizens take a seat: the chairs are put in a horseshoe. The scientists and the stakeholders are seated in the middle of the horseshoe and on the chairs behind.

The meeting starts at 9:15 a.m. with a brief introduction by Carlo Sessa (ISIS) about the Aware process. He introduces what has been done in the previous steps of the project.

Then Camino Lique (JRC) present answers to the ten questions asked by citizens during the Paris meeting. Some questions regard the Water Framework Directive (for example: What is a directive?, Which are the control measures of the Directive?

What is the Waste Water Treatment Directive?, Are there conflicts among UE and national directives?), other questions regard the ecosystem situation (for example: is the eutrophication positive? Are there other problems in addition to eutrophication? Are there natural solution to these problems?). The presentation slides are written in English, but a printed version in Italian is available.

At the end of the twenty minutes presentation Camino Lique says that she prepared a new question not for the scientists but for the citizens: "What do you think are the best ways of cooperation?". Citizens are asked to answer by email to Camino.

All the questions and the answers are presented in a simple and non-technical language. During Camino presentation two citizens have arrived. Only one citizen is missing.

Carlo introduces the methodology: this is a participation process on an informed basis. The object of the meeting is to discuss the case of Sacca di Goro. Carlo explains the roles of the participants with a clear language, all the citizens listen carefully to his words.

Some of the stakeholders as Valentino Mondo (Assonautica), Silvano Bencivelli (Province of Ferrara) e

Stefano Martini (Legambiente) introduce themselves, but the everybody's presentation is postponed since only few stakeholders are present at that moment.

Gianmarco Giordani (UNIPR) starts with the second presentation of the day (about fifteen minutes): "The ecosystem management in the Sacca di Goro". The presentation is addressed to the questions of citizens about Goro situation and its focused especially on ecological state and problems related to the lagoon such as quantity of nutrients, turbidity of the water column, low hydrodynamics, pollution of Po river.

Gianmarco Giordani explains that nowadays it is not clear to scientists if clams are like a substrate that can favor algal blooms. He introduces some economic and social conflicts of Goro such as education vs social welfare, clams economy vs tourism.

Carlo decides to change the agenda and to postpone Alessandro Luè's (Poliedra) and Andrea Calori's (Poliedra) presentation after the break. The second part of the morning is dedicated to the stakeholders.

### **First Session (10:15a.m. – 11:15 a.m.)**

Carlo at 10:15 a.m. presents the project to the stakeholders and explains the Aware process as a process of collaboration among them. The interesting thing of the process is to understand what scientists and policy makers say regarding to water sustainable management and how they can collaborate.

Carlo explains the working methodology of the day: experts will present the problems of the ecosystem then citizens and stakeholders will be organized in groups and will discuss the topics. After the discussion each group will summarize the key points to everybody. All the citizens and stakeholders listen carefully.

Then Carlo introduces himself and the institution he belongs to (ISIS): he explains his double role of facilitator and coordinator of the project. Carlo asks scientists to make a brief presentation and he requests feedbacks from stakeholders. There are only 9 stakeholders out of 20. This is because in the same day of the Aware workshop there is an emergency meeting of the fishermen about the scarcity of the seed clams. In the same day there is also an important institutional event promoted by the Agriculture Department of Provincia di Ferrara focused on agriculture and energy themes.

Due to these circumstances some fisherman and farmers are engaged in these activities.

- Francesco Paesanti (the only fisherman in the workshop): he declares his interest in learning but he underlines one problem: one day of the workshop is a weekday, this is not compatible with fishermen's job. Carlo underlines the importance of participation because the project aims to combine scientific and local knowledge.
- Umberto Broccoli (nuclear physicist) says that he is not been invited and he is here as an observer because he is interested in environmental issues.
- Lucilla Previati (Director of Po Delta Park, Emilia Romagna Section): the park is not only an institution for protection but it also support the involvement of citizens working and living in the park. She remembers that specific guidelines were designed to manage the park in 2006, in collaboration with various universities, but they have never been used by local administrators. She thinks that this project can be an opportunity in order to have the attention of the administrators.
- Francesco Tornatore (manager of the Po River Basin Authority): he is interested in the project, but he defines himself as a policy maker rather than a stakeholder. He would like to know how the process can transpose the theme of the project to an higher level.
- Silvano Bencivelli (Province of Ferrara): that there are some problems regarding this workshop: because of adverse circumstances not all the stakeholders are present at the moment. He underlines that there here are difficulties in cooperation between citizens and scientists but also between citizens and politicians.
- Valentino Mondo (Assonautica): the problems of clams fishing depends mainly on agriculture. Tourism today is not well developed and it is in conflict with fishing.
- Giampaolo Balboni (WWF): welcomes the project and believes that can be useful to promote the involvement of the population.

- Stefano Martini (Legambiente): the project is important for citizen involvement, but we need to involve politicians and local administrators. He also underlines the need to involve media.

Silvano Bencivelli closes the round of feedbacks: he says that the projects aims to put together politicians and stakeholders. At the end of this section the last citizen arrive

*Coffee Break (11:25-11:40 a.m.): all citizens seem to appreciate the welcome buffet, they speak with scientists and the stakeholders in a relaxed atmosphere.*

## **Second Session: (11.40 a.m. – 1.15 p.m.)**

After the break Carlo says that the presentations are preliminary to the working groups.

Gianmarco Giordani around 11:40 a.m. gives a presentation of the current situation in the Sacca di Goro (around fifteen minutes) based on the methodology for analysis of ecological and social systems by the Nobel Prize winner Elinor Ostrom. The presentation, although technical, it is well designed, citizens' attention is high.

After the presentation, Carlo ask citizens to answer to three questions:

- (1) Is the presentation of the system clear and complete?
- (2) What are the strengths of the system?
- (3) What are the weaknesses of the system?

The citizens are divided into three groups. The first group is composed by Lucilla Previati, Stefano Martini and three citizens. During the discussion the citizens and the stakeholders are emotionally involved and there's a good interaction.

The second group is composed by Francesco Tornatore, Gianpaolo Balboni, Stefano Lovo and three citizens. There is not a debate during the working time. Everybody listen to Francesco Tornatore.

The third group is composed by Francesco Paesenti, Valentino Raimondo and three citizens. They are discussing in another room, close to the main one. They debate and discuss in a cooperative way.

After the discussion time, there's a plenary meeting. One citizen for each group explains what his/her group has pointed out. The first group states that:

- (1) All the presentation are clear but the Ostrom chart could be simplified and improved.
- (2) Thanks to the awareness of the local operators, such as fishermen, the situation is improving. Another element of strength is the double economic prospective (land and sea).
- (3) There is not a link between associations and local stakeholders.

The second group states that:

- (1) The presentation is clear but it's useful to study in depth the theme of eutrophication.
- (2) The biodiversity of the Sacca of Goro can open different perspectives on both economic and environmental development. The economy based on clams helps to control the ecosystem and



keep it in a certain state and in equilibrium. There are many treatment plants but they are not sufficient for waters treatment.

- (3) The basin has far exceeded its carrying capacity compared to the impacts due to clams production. It is difficult to control the impacts of the river Po throughout its course. It is important to study the possibility of developing other economic activities that do not affect the landscape. The river sediments do not allow water to be transparent. There is an interesting question: is it really necessary and competitive on the market to keep this big production of clams? Pollution may depend on large quantities of clams (you could try to reduce the concessions). There is also a lack of supervision with the consequent construction of warehouses in the Scanno<sup>24</sup>. This has negative influence on the breeding of some species of birds such as woodcock.

The third group says that:

- (1) It is necessary to study the relationship between fishermen and the environment (not only for economic reasons).
- (2) The clams represent a private and economic interest but they improve attention for ecosystem and for monitoring (for example the data collected by the Province of Ferrara are very useful).
- (3) There are a lot of problems: sometimes money is wasted, there is no education on waste disposal and there is no collaboration among local stakeholders. The clams are a mono-economy (with all the consequences of this kind of economy) and there are a lot of problems for the sludge that is removed from the lagoon and placed in other places. There are problems related to the agriculture. There is a lack of organization of the harbour of Goro and problems to develop tourism.

*Lunch Break (1:15-2:15 p.m.)*

### **Third and Fourth Session (2.30 p.m. – 5.45 p.m.)**

Around 2:15 p.m. the workshop starts. The chairs are disposed in a circle. Citizens and scientists take a seat. There are new participants as Cristina Barbieri that is substituting the Director of Po Delta Park.

Chiara Mocenni (UNISI) presents the " Decision Support System for the management of Mediterranean coastal lagoons". She explains in twenty minutes the Ditty project as an example of application. The presentation is sometimes very technical. Carlo underlines that the next step to do is to apply this model on the case study area.

Then, Andrea Calori presents, in about fifteen minutes, the governance analysis with focus on the Water Framework Directive. The language is easy to understand and key points are explained by using questions to have the attention and the feedback of the citizens. Carlo tries to stop the questions and decides to change the agenda and to merge the presentation of the scientists in a single session and then open the working group and debating session after the presentation (in the original agenda the presentation on the governance of the Sacca of Goro and the analysis of the online survey were divided into two sessions. At the end of each session a time for debating and working was expected).

Alessandro Luè explains the results of the online survey and of the stakeholders interviews. After his presentation Giulia Detomati (Poliedra) asks the attention and gives to the stakeholders the evaluation sheets: they have to fill and then to return to her at the end of the day, before leaving.

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<sup>24</sup> The Scanno of Goro is a 8 km long sandbar. It isolates the Sacca di Goro from the offshore.

Then Carlo explains that citizens have to answer to three questions:

- (1) The presentation of the system in its various aspects is clear? Do you have doubts / reservations or requests for investigation?
- (2) What are the most important goals (priorities)?
- (3) Which are the most interesting options of action?
- (4) Do you think the cooperation between the actors of "Goro system" can be improved? How?

After a break of few minutes the citizens organize themselves into three working groups. Carlo explains the rules: they have 40 minutes to discuss the questions and after that, 20 minutes to give a feedback of their work.

There are three working groups.

The first group is composed by Francesco Tornatore, Stefano Martini and four citizens. During the discussion there is not a debate, it looks like a "lesson" of Francesco Tornatore, the mood is very quite. One of the citizens explain what they pointed out during the discussion

He is emotionally involved in the problems.

- (1) The Sacca of Goro is a modified environment and it is an unstable system. It is difficult to define the objectives of sustainability.
- (2) It is important to maintain at least the current state.
- (3) It is important to apply the Nitrates Directive and to involve all the stakeholders in the process. It is important to define economic objectives in order to raise funds to invest.
- (4) It is important to involve different stakeholders in order to plan joint action and find common solution for the management of the Sacca. Create an annual event where the stakeholders and decision makers can meet.

The second group is composed by Cristina Barbieri (as a substitute of the Director of Po Delta Park), Francesco Paesanti and Valentino Raimondo.

Citizens during the working time discuss animatedly. One citizen explains the key aspects of the discussion.

Their approach is critical and proactive. The results are the following:

- (1) They are not satisfied by the presentation because they believe that the interviewed people do not represent all the actors and stakeholders involved in this issue.
- (2) The important goals to reach are: reducing the impact of pollution upstream of the river Po, raising awareness and information on these issues; fostering cooperation and communication between stakeholders in order to improve the ecosystem.
- (3) The most important options of actions are: build channels for reflux, water, boat traffic and tourism; improving roads, improving water quality through treatment, removing the foxes from the Scanno (they eat the eggs of clams).
- (4) The communication can be improved by involving administrators that should be more present and represent the citizens.

The third group is composed by Stefano Lovo, Francesca Andreetti, Gianpaolo Balboni and three citizens. They discuss in a ordinate way, by listening each to other. One citizen gives the feedback of their discussion.

- (1) They have not understood Chiara Mocenni's presentation. They think it is difficult to understand how the information provided can be useful for the workshop.
- (2) Agriculture is increasingly competitive and intensive and it uses more resources that are not available for others. One goal is to optimize the integrated management of coastal areas in a sustainable way.
- (3) They think that the most interesting options for actions are: improving the hydrodynamics (public funds are not sufficient for this type of work, so it is important to involve all sectors); addressing the problems of pollution from the entire basin of Po River; promoting tourism and the development of nature so that to lead to a diversification of the economy.
- (4) The cooperation could be improved through increased participation and sharing of objectives and actions, especially through the assumption of responsibility by all stakeholders.

All citizens express their criticism about the lack of important stakeholders at the workshop as fisherman and farmers.

Chiara Mocenni, answers to the citizens that have not understood her presentation and explains the importance of a DSS system and the usefulness of this instrument application for the purpose of the project. The citizens are in a circle for the conclusion. Carlo says that the objective of the day after is to design a draft of the declaration of Citizens.

Around 5:30 p.m. Carlo talks about Aware process in terms of meeting and workshop in order to organize the next steps. There are some changes: the European workshop in Paris will be postponed to the 29<sup>th</sup>-30<sup>th</sup> of April.

Each stakeholder explains his mood regarding the day: the words are: confused, motivate, surprise, chaos management, conscious and satisfied (for three times).

At 5:45 p.m. the workshop ends.

## 2nd DAY –16 October 2010

Participants to the local workshop:

<i><b>Citizens and partners</b></i>			
<i><b>Name</b></i>	<i><b>Surname</b></i>		
Belluscio	Maria Teresa	Isis	X
Bencivelli	Silvano	Ferrara Province	X
Bernardi	Arianna	Citizen	X
Calori	Andrea	Poliedra	X
Camisotti	Fabio	Citizen	X
Fabbri	Marco	Unisi	X
Giordani	Gianmarco	Unipr	X
Gori	Gilda	Citizen	X
Gori	Giovanna	Citizen	X
Detomati	Giulia	Poliedra	X
Liquete	Camino	Jrc	X
Lonati	Arianna	Citizen	X
Lovo	Stefano	Ferrara Province	X
Lue''	Alessandro	Poliedra	X
Manfredini	Claudio	Citizen	X
Mocenni	Chiara	Unisi	X
Poletti	Roberto	Citizen	X
Scarpa	Angelo	Citizen	-
Sessa	Carlo	ISIS	X
Sparacino	Emiliano	Unisi	X
Veratelli	Maria Cristina	Citizen	X
Viviani	Diego	Citizen	X

## First Session (9:15 a.m.-11 a.m.)

At 9 o' clock a.m. the citizens arrive and take a seat: they are arranged in a horseshoe. The meeting starts with a discussion facilitated by Carlo Sessa (ISIS). Carlo says that now the important is to resume what we have done and what we have to do. Then he explains to the citizens what is their mandate for today: they have to prepare the declaration with the experts' support.

He explains how to design the structure of the declaration. In particular, he suggests to consider these three sections:

1. The citizens group: who we are, how and why we are here
2. The Goro System: our vision of present and future situation.
  - a. The UE Water Framework Directive
  - b. Water quality in Sacca of Goro
  - c. The development of local economy
3. In which ways can we involve citizens?
  - a. Information
  - b. Participation
  - c. Awareness
  - d. Action

Then a bit messy debate about previous topics, Goro situation and its problems starts,. All the citizens are emotionally involved in Goro's problems. One citizen says that the first things to do are: to focus on the historical causes of conflict and to try to learn something from Goro's history, since it is very important build up a common vision.

One citizen says that Goro is a small town with a great economical and great social potential but with environmental conflicts: there is not a general awareness about environmental problems and cultural level is low, people lack of education. Someone speaks about his feelings of skepticism about the possibility to change things and about the time of changing.

All citizens are involved in the discussion, each person speaks about his own point of view. It is important to consider not only Goro's problems but also its strengths.

Carlo says that this discussion is useful to understand the process and to imagine whether in the future there will be the possibility to change things or to leave them as usual.

Carlo underlines the importance of contextualizing the problems within the Sacca of Goro. One girl asks which is the objective of the citizens, she does not understand the objective of the workshop. Someone infers that there is a big problem in this workshop because there are not important stakeholders such as fishermen and farmers, so there is the risk that this experience will be ignored by important subjects of Goro's economy. The citizens seem to be a bit disoriented.

Carlo points out the objectives and explains that Goro's citizens mandate is to find common objectives, to spread new opinions, to suggest actions on the basis of the things learned during this workshop and to design the declaration contents. Carlo also explains that Italian citizens with the other European groups will design the European declaration. This declaration will be the sum of the opinions of three groups and its primarily objective is to improve connectivity among stakeholders, scientists and citizens.

One citizen says that Goro is a very special case of management of an ecological system, it can't be expected to achieve an idyllic ecological situation. We have to consider that the productive system involves 1200 workers. He says that the problem is finding a good balance between all the local actors. What we

need is a “little bit of pollution” or “the right dose of pollution”. The radical approach is not useful and it does not work.

The atmosphere of the debate is positive, each citizen is committed and tries to make proposals. One citizen underlines another problem: Goro system is not based on equity. Sacca of Goro can be considered as a metaphor of the Earth: we have Sahara, and some temperate zones. Some territories are more sensible to the variation of the ecosystem and their condition can easily get worst. If we consider that these days economy is also very unstable, it is easy to understand that the situation for someone can easily precipitate. The control of the ecosystem can be considered as a positive contribution to help the economy.

Carlo stops the discussion and underlines the importance to consider the local approaches in the citizens declaration. There is a three weeks time to write down the declaration draft. Two working group will work on the contents, the first one on the technical topics and the second one on the communication and dissemination of results. One editor from ISIS will edit the text.

Stefano Lovo (Ferrara Province) remembers other projects which may be taken into account in the declaration (e.g. zeolites agriculture project).

Carlo points out the importance of considering both the local and the global dimension of the problem. Carlo explains that some politicians will be invited to participate in the next conference.

*Coffee Break (11:15 a.m.-11:30 a.m.)*

## **Second Session (11:30 a.m.–1:30 p.m.)**

The second session of the morning starts around 11:30 a.m. citizens and the scientists are disposed in two halves of a big circle. Carlo explains that the objective of this session “citizens against experts” is to understand how we can put in connection the local and the scientific knowledge. Carlo asks if it is possible to improve economy and at the same time to respect the environment. One citizen answers that in Goro it is impossible to make money without environment because the economic system is based on ecosystem.

Citizens and scientists stay in circle for the duration of the presentation. Than Emiliano Sparacino’s (UNISI) presentation starts: he introduces the method for the comparison of the options Analytic Hierarchy Process (AHP). Chiara Mocenni (UNISI) emphasizes one of the most important things of the this method: it does not return only the best options but it also generates the general ranking of the options. By using this ranking, it is possible to understand the distance among the options.

Carlo introduces the objective of a DSS system: the most interesting thing is that it makes possible to consider different options.

This method allows to integrate citizens’ local knowledge with scientific knowledge. The discussion on this methodology starts. One citizen says that there is a limit in using this tool: it is impossible to have a large vision of the problem, we can only compare two couple of options. Carlo and Chiara Mocenni explain that this methodology has some limits but it can be very useful and helpful, once alternatives have been exactly identified.

Carlo also says that this operation is important in order to:

- prepare the declaration for the conference of the 12<sup>th</sup> of November
- apply the AHP method for the assessment of the options.

Carlo speaks about the relation between actions and criteria and about the importance to find common definition for these categories.

A debate about the possibility to combine actions begins: Chiara explains that the idea is to use the stakeholders' suggestions in order to form a set of criteria (environmental and socio-economic), and then add an assessment of the acceptability of the various options for action by the citizens.

To this end, the staff of the University of Siena will quickly prepare a questionnaire that will be available on-line on the webpage of Aware: citizens of the Aware group have to respond individually. Then University of Siena will prepare the assessments for the conference on November the 12<sup>th</sup>. Responding to the questionnaire should not take more than about 15 minutes

At the end of this section, a debate on the ways to spread this information and questionnaire among the other participants starts. Some citizens ask how it is possible to involve other stakeholders, schools and citizens, if it is possible to ask them to fill the questionnaire. Alessandro Luè explains that we have to consider that can be difficult for a person who does not have this knowledge gained in this two-day intensive workshop. So citizens discuss how it is possible to communicate in a easy way the problems of Goro ecosystem for example by using synthetic indicators. Then they discuss the recipients of the communication such as students, teachers, parents...

Carlo explains that what is important is to present this case study during the European session and only further start with the design of the informative network.

Carlo underlines the importance of identifying now local and global options of actions and the investment, control and information options.

Camino underlines the importance of considering also the global dimension, by considering for example the pollution of Po River, even if we cannot change it, because it is important to have a complete framework of knowledge.

Carlo explains that citizens have to define options of actions and to verify their feasibility by adopting a pragmatic approach.

The debate on the options starts: some citizens explain that some options are missing such as the surveillance one. Others suggest to define the options in a more specific way for example if we talk about "tourism" we have to explain which kind of tourism (such as eco-tourism). Carlo says that is important to work on feasible options (maybe some that are already planned) such as bike paths.

A debate on the importance of work on common information in order to avoid environmental conflicts starts: one citizen says that among the farmers there is a common perception that fishermen are rich and lucky. They are envy and they do not care about fishermen's problems. There is a conflict based on this prejudice.

One citizen says that the important thing is to change minds: everyone who lives in Goro can have direct or indirect benefits from fishing activities. All citizens seems to be very committed and they want to find the best way to communicate ecosystem problems.

*Lunch (1:30 p.m.-2:30 p.m.)*

### Third Session (2:30p.m.-5:30 p.m.)

Around 2:30 p.m. the workshop starts again. The citizens are disposed in a circle. Alessandro answers to some questions of the citizens revealed by the online interviews to the stakeholders.

Carlo explains the activities of the afternoon: the citizens have to vote their favourite answers of stakeholders by pasting five stamps on the right board.

Then citizens start to work in groups. They are divided into two groups of five people. Carlo explains again citizens' mandate: they have to react to the presentation of the AHP methodology and to process the results of options in terms of water quality (group 1) and local economic development (group 2) by adopting a global (Delta Po and the Po basin) and local (Sacca di Goro, Goro, and the town of Bosco Mesola) vision.

Both groups have to submit their personal views on information dissemination/awareness creation. While citizens are working, some members of the aware team have a meeting for the preparation of the local conference.

Economic development group is constituted by four citizens. Citizens discuss and listen each to other. Each citizen gives his contribute.

Action (economic group)	Global	Local
Dredging and mud and seaweed treatment		X
Channel Construction		X
Collaboration between the Park and private operators	X	X
Emblem of the Park	X	X
Sewage treatment plants	X	
Building	X	X
Diversification of economic activities (fishing) in tourism and trade		X
Fields of university research		X

Action (awareness and information)	Global	Local
Mass media: newspapers and TV	X	X
Involvement of primary and secondary schools		X
Cooperative involvement of fishermen and farmers		X
Information leaflets door to door with brief summaries		X
Visual information (pictures, sculptures)	X	X



Water quality group is constituted by five citizens. There is an atmosphere of cooperation. The citizens listen to the most experienced ones.

Action (economic group)	Global	Local
Reduce nutrients	X	X
Wetland plants (lower environmental impact)	X	X
Construction of water treatment plants	X	X
Construction of ponds (in the margins or near industrial plants)	X	not quite
Improve the hydrodynamics (more oxygen)		X
Incentives for the construction of water courses more sustainable (i.e. keep the reeds, avoid overbuilding channels, increased handles)	X	X
Increase control and surveillance measures (sanctions) on discharges of industrial and agriculture	X	not quite
Awareness among fishermen (incentives) to use tools and means a lower environmental impact		X
Raise awareness among the municipalities close to Goro and recycling and not dumping waste in bag		X

Action (awareness and information)	Global	Local
Newspapers and TV advertising	X	X
Exchange of ideas and information on the web (blogs, social networks, forums)	X	X
Flyers		X
Conferences geographically distributed along the Po	X	X
Guided tours by land and sea		X

Carlo speaks about the Aware declaration in terms of methodology: it is important to maintain the separation of the themes (water quality and economic development).

Then speaks about deadlines: it is important to finish the declaration by the 5<sup>th</sup> of November.

The citizens organize themselves in order to finalize the declaration: they will meet on Thursday in the hall of local authority.

Silvano Bencivelli (Ferrara Province) updates on the conference to be held the 12<sup>th</sup> of November in Canneviè. He also suggests to organize a meeting in order to explore future opportunities for active participation and improve relations between citizens and local authorities. Giulia Detomati (Poliedra) gives to the citizens the evaluation sheets: they have to fill in and to return to her.

Then Carlo asks about personal opinions on the day and on the process to citizens and partners. The mood is good, the major part of citizens declares himself as satisfied. Around 5:30 p.m. the workshop ends.

Giulia Detomati