PERSEUS

POLICY-ORIENTED MARINE ENVIRONMENTAL RESEARCH IN THE SOUTHERN EUROPEAN SEAS

AMP report on the experimentations in the four Pilot Cases. Lessons learned, feedbacks and recommendations

Deliverable D6.13

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Executive summary/Abstract

This deliverable reports the design and implementation of the AMP toolbox experimentation in the four PERSEUS case sites. AMP toolbox is a web-based platform that functions as a structured and documented depository of tools and databases supporting the design, implementation, monitoring, evaluation and adaptation of marine policies. The experimentation of the AMP toolbox refers to the use of the toolbox in a simulated environment with key stakeholders. A common methodological frame was devised and applied to the in-depth interviews and workshops. A total of 87 stakeholders were interviewed in 5 case studies, through 13 in-depth interviews, 49 online questionnaires and 6 workshops. The experimentation took place during the period September 2014 to December 2014. The results suggest that AMP is well perceived, rich in useful information and capable of becoming a valuable decision support instrument for policy makers. Nevertheless, deficiencies and missing elements were identified and suggestions for improvements in matters of: scope, structure, contents, user interactions and support were provided. Main recommendations include: more focused content on necessary policies and on corresponding methodologies and tools; option to search for detailed information if needed rather than extended texts and resources; a more schematic view of the content; Provide policy examples, including both success and failure stories; Expand material on legal aspects of policies; Provide navigation panel and sitemap; improve the search mechanism; Provide user support and guidance material.

Scope

This deliverable is produced within WP6 (Adaptive policies and scenarios), Task 6.4: Implementation and lessons learned. Task 6.4 aims at testing and improving the Adaptive Marine Policy toolbox designed and developed within Task 6.3. It approaches this target by exposing the toolbox to a number of structured tests in order to identify problems in design and functionality. The purpose of deliverable D6.13 is to present a first analysis of users' experience with the tool. It accordingly reports on recommendations and lessons learnt for improving the form and substance of the AMP toolbox. Deliverable D6.13 builds on previous research performed in various subtasks of WP6. Of central importance were results and progress laid down in Deliverables D6.7, D6.9, D6.10, D6.11 and D6.12. Deliverable D6.13 is closely linked with research to be performed for Deliverable D6.14 (Report on the experimentations at SES basin scale) and Deliverable D6.15 (APF, final report on expectations issued by the SES stakeholder platforms). The research initiated with Deliverable D6.13 will culminate in Deliverable D6.16 (Synthesis report) which is expected to homogenize and summarize all recommendations and lessons learned for AMP toolbox.

1 Introduction

This section introduces the reader to the general context and associated research questions that nourish the development of the AMP Toolbox and fathered the need for experimentation reported here. It stresses the complexity of modern marine governance and the limitations of the available tools to accommodate the necessarily adaptive character of a modern governance strategy. It thus highlights the rationale for making use of PERSEUS' stakeholder platforms in order to extract valuable lessons for the ability of AMP to perform its role.

1.1 The context of AMP experimentation

Again and again, policy analysts and MSFD commentators stress the numerous challenges that EU Marine Strategy Framework Directive (MSFD) poses to member-states in designing and implementing a successful strategy relating to the protection of territorial waters. [Thiel 2013; Freire-Gibb et al 2014] The challenges are exemplified, but not restricted, to: Operationalizing the concept of Good Ecological Status (GES) and link it to a state-of-the-art observing and monitoring system; quantify and monetize the gap between status-quo and targeted levels of GES; establish permanent fora of stakeholder deliberation; evaluate existing and prospective management measures; devise flexible mechanisms for adaptation to new information and data. Following the logic first introduced with the EU Water Framework Directive, the MSFD requires EU MS to perform an economic and social analysis for describing the economic importance of sectors that impose pressures on, or benefit from, marine ecosystems, and the costs imposed on society by the degradation of these ecosystems. This information is then used for supporting the selection of measures that will cost-effectively contribute to improving the ecological status of marine ecosystems. More precisely, Article 8.1 (c) of MSFD calls for 'an economic and social analysis of the use of those waters and of the cost of degradation of the marine environment'. (On the economic logic of MSFD see Skourtos et al)

PERSEUS embraces the integrative approach of MSFD by linking biophysical research and data relating to the various ecosystem processes, structures, stocks and flows with a solid socio-economic assessment of SES open sea and coastal zones. PERSEUS integrative research is exemplified in its four Pilot Case (PC) areas: Balearic Sea and Gulf of Lyon; Northern Adriatic Sea; Aegean Sea/Saronikos Gulf and Western Black Sea. This line of research culminates in the design and implementation of an innovative, web-based toolbox (Adaptive Marine Policy Toolbox – AMP) facilitating participatory elaboration of multi-scale management schemes and policies aiming to achieve or maintain the GES in the SES. AMP is mend to assist all individuals (hereafter policy- makers) charged with the design and/or implementation of marine policy measures in SES.

The purpose and usefulness of structured and documented collections of methodological tools and databases (i.e. 'toolboxes') must be seen against the backdrop of the on-going debate on science-policy interface. It is generally acknowledged that the complexity and severity of environmental problems make 'evidence-based policy' the desired norm in many fields and this by itself draws a growing number of scientists into the uneasy realm of policy consulting and advising. (Skourtos et al) Moreover, a frequent feature is the presence of uncertainties about the environmental system and the way it responds to management interventions. Uncertainties therefore necessitate a strong commitment to inflict flexibility and

adaptiveness into modern marine governance. To assist both sides - producers and consumers of scientific knowledge - such 'toolboxes' offer a practical and convenient way to transmit knowhow, data, expertise and experience to people charged with designing and implementing management measures. Toolboxes are designed to provide state agencies staff and key stakeholders with guidance and tools to use in developing, implementing, and monitoring state policies and their associated practices that support an effective and efficient public policy. As state agencies staff engages in efforts to set targets and reach desired goals, information is needed in all phases of the design, implementation, monitoring, evaluating and revising policies and practices. PERSEUS Deliverable D6.7: Report on the conceptual framework for the PERSEUS Adaptive Marine Policy (AMP) Tool Box provides in greater details material on the use of toolboxes in marine policy.

AMP is a *set of tools* intended to assist policy-makers involved in implementing marine policies in matters of:

- Structuring policy responses
- Delineating institutions and actors involved
- Accessing available data and information
- Becoming aware of alternative policy instruments and their relative merits
- Designing policy scenarios to visualize alternative outcomes, especially in presence of uncertainties
- Evaluating alternative outcomes
- And - when it is required to be adaptive – elaborating policies intrinsically robust to change.

AMP has been designed and developed within Work Package 6, Task 6.3. It is based on a five-step policy cycle where each step is linked to the knowledge base and other relevant resources. It relies on previous research in WP6, produced by a close collaboration between PERSEUS scientists and socio-economists:

- Task 6.1 (State of play) providing the basic information on scientific, technical, economic, legal and institutional knowledge necessary to develop the AMP. Thematic data bases developed within this task constitute the Knowledge base associated with the AMP. PERSEUS has already produced a number of (internal) tools: Seven databases produced within WP6 and forming its knowledge base; information on the main risks of non-achievement of the GES provided by WP1 (open sea) and WP2 (coastal areas); pressures in socioeconomic terms on the marine and coastal ecosystems by the WP1 (open sea) and WP2 (coastal areas); Model results from the WP4.
- Task 6.2 (Stakeholder dialogue): As the AMP Tool Box is developed for actual application in the Mediterranean Sea and Black Sea regions, the needs and expectations of stakeholders and decision-makers are of crucial importance. Task 6.2 provides a means for dialogue with stakeholders on the scope and functionalities of the AMP Tool Box.

Results and progress has been laid down in Deliverables D6.7, D6.9, D6.10 and D6.11. AMP is currently uploaded in a dedicated part of the PERSEUS web site by researchers of WP9, Task 9.4 (Targeted communication tools for policy-makers, scientists & environmental organizations).

1.2 The rationale of AMP experimentation

According to PERSEUS DoW, Task 6.4 (Implementation and lessons learned) is dedicated to testing the AMP Tool Box in pilot case studies in collaboration with selected stakeholders. The insight gained during this experimentation phase will be thoroughly documented and it will serve to further elaborate and improve the AMP Tool Box. The main objective of Task 6.4 accordingly is to test the AMP at:

- ✓ The Pilot Cases
- ✓ The basin scale
- ✓ For coastal zones and
- ✓ Open sea areas

The experimentation will mainly focus on elaboration of adaptive policies aiming to overcome situations at risk of non-achievement of the GES during the 2020-2030 horizon and will be developed using a participative approach involving stakeholders and as far as possible scientists specialized in these kind of risks. From the lessons learned in the PCs, the framework will be finalized so as to ensure its suitability for policy planning at various scales in support of reaching marine GES in the context of the Sustainable Development of the EU riparian countries.

The rationale of testing AMP is to empirically verify its suitability for the elaboration of future programs of measures for marine governance in SES. Moreover, AMP has to verify its *integrated* nature by being able to link to scientific modelling and other scientific resources produced either internally by PERSEUS or in other research projects. The test of AMP should also shed light on how well the transition from one policy step to another facilitates (or necessitates!) a 'chain reaction' between socio-economics and scientific models and tools.

1.3 Links with other deliverables

As already mentioned, the present report is linked backwards to all previous reports within WP6 that led to the inception, design and web-based implementation of AMP. These are:

- Deliverable D6.7, which provided a first outline of the conceptual framework of the PERSEUS AMP Toolbox;
- Deliverable D6.9, which provides keys to link the Perseus Knowledge base to the five steps structuring the AMP Tool Box;
- Deliverable D6.10, which provides an overview of the state-of-the-art of existing principles and methods for drafting adaptive policies and further elaborates the steps designated in Deliverable 6.7;
- Deliverable D6.11, which specifying the presentation of the results of this Task on the web;
- The present report is also linked to Deliverable D6.12, which presents the results of the various exercises of stakeholder consultation carried out within the Stakeholders Platforms (SHPs) at the sub basin pilot cases level. It will also provide a major input to immediate future research in:
- Deliverable D6.14, which will report on the experimentations at SES basin scale
- Deliverable D6.15, which will report on expectations issued by the SES stakeholder platforms

- Deliverable D6.16, which will provide a synthesis on the experimentation of the AMP and final recommendations / lessons learnt.

1.4 Objectives of the deliverable

In this context, the objectives of the work underlying this deliverable are:

- ✓ To develop and propose a coherent and manageable scheme for organizing the test and the subsequent improvements of the AMP at the level of Pilot Cases.
- ✓ To offer an insight on the functionality of AMP and highlight main deficiencies and gaps, as identified from the tests
- ✓ To homogenize and summarize suggestions for improving AMP as stated by the participants scientists and decision-makers
- ✓ To offer a base for organizing the test also on the level of the basin scale

1.5 Content of the deliverable

This deliverable is organized in 7 Sections and 7 Annexes. Section 1, Introduction, starts off with the position of this deliverable within the context of PERSEUS, its objective and content. Section 2, highlights the methodological approach of the experimentation. Section 3 describes the experimentation in the four case sites and gives a qualitative assessment of the results. Section 4 presents the results of the high-level meeting during the Black Sea Day while section 5 discusses the statistical results of the on-line questionnaire. Section 6 is an overall discussion of results while section 7 concludes with recommendations.

2. Methodology

There are not up to date established control methodologies for assessing decision support tools. Researchers have to rely on similar but more complex procedures for software testing and adapt them to their specific needs. The scientific community of software development and testing has devised a number of testing methodologies. (Mathur 2008) Testing approaches for example can be categorized in: Static vs. dynamic; White-Box vs Black-Box; Specification-based testing; Visual testing; Ad hoc testing; exploratory testing; Grey-box testing. Alternatively, such a methodological synthesis and transfer could be based on tools aiming at testing a website's usability (see for example: http://mashable.com/2011/09/30/website-usability-tools/).

A general framework for setting up software testing is presented in Kinnula and Matini (1989). The role of testing is to determine the functionality of the tool under specific assumptions but cannot identify all problems ('bugs'). Many of these will be identified, isolated and corrected only after the tool/software pass a critical period of public exposure. In this report we have decided to combine a number of different methodological sources: elements of software testing with guidelines on social experiments and information on qualitative social research tools.

2.1 Basic concepts

The full development of the methodology is given in Appendix I; here we describe its basic components.

The meaning of the 'test'

By "test" we practically mean *exposing the AMP in a simulated, hypothetical but realistic situation, where an agent is called to address a problem in marine governance using the* AMP *as a support device.* The test is meant to be a preliminary assessment of AMP Toolbox in order to: demonstrate its utility; try out procedures; evaluate its implementation and the results; and make any needed changes or adjustments. The basic concepts of the experimentation are presented below.

'Agent'

By "agent" we mean a member of a regional PERSEUS SH platform having a specific interest in policy making for aspects of marine management in the Pilot Cases. 'Agents' are therefore members of the regional SH platforms active in the AMP Toolbox testing and improvement. Both civil servants working in policy design as well as high-level stakeholders charged with implementing marine policy are considered here representative agents. A representative agent could also be a scientist who often finds himself in the position of a policy consulter and therefore acquires a certain skill as policy advisor. Such policy-involved scientists are an important target group of the AMP testing because they are in the position to provide expert judgement referring to both the form and the substance of the provided tools and databases.

In line with the above argumentation, three factors are important in selecting agents for the purposes of the test:

- The vicinity of agent to a real, decision-making authority
- The extent of agent's prior experience in developing or implementing new tools, practices, etc.
- The willingness and availability of agents to participate in the test

"Hypothetical but realistic situation"

By "hypothetical but realistic situation" we mean a problem *setting* that anticipates a future or addresses a current issue and its solutions. The problem setting can be visualized as a "what if" scenario that describes the problem and its possible solutions (the 'program of measures') in all five steps of the policy cycle. The setting is realistic if it is anchored in a solid knowledge of the local conditions and habits in matters of state intervention and marine management practices.

Simulation

By "simulated" we refer to *setting in motion* the five cycles of AMP by the agent in a deliberative mode to structure the issues and choose response policies. We build them into appropriate MSFD-scenarios and visualize their outcome. We score the performance of policies by suitable indicators: How effective? How efficient? How quick? The simulation (which is practically the test) can take place either in a face-to-face, interview-like setting or in a group fashion. In all cases, stakeholder deliberation is important! Deliberation means that we interact with the agent through observing, asking, noting, correcting, advising, explaining but not biasing the discussion!

2.2 Structure and organization of the test process

Before we embark on the test itself, we need a thorough and careful design of its structure and organization. The following steps are tentative answers to this task:

Step 1: Do your homework!

Before the test begins, the PERSEUS person(s) involved (hereafter: facilitator and relevant team) must be prepared to answer several questions referring to difficulties that pop up during the process. A facilitator must study thoroughly the spirit and technicalities of the AMP Toolbox as presented in the relevant deliverables

Step 2: Select your agent(s)!

A close look at the SH platforms, enriched with information on SH identification (PERSEUS_Stakeholder_Identification_V18_140214) gives us a good idea of who is suitable to participate in the test. Choosing the relevant agency / person is a matter of the following parameters: position in the decision-making unit, interest, scientific skills, availability, easiness of contact, etc. Selecting the agents implies that we invite them to participate by email or phone.

Step 3: Design the test!

The design of the test needs to take into consideration the number and specific attributes of the persons selected. Depending on the number of persons willing to participate, the test can take the form either of face-to-face or group meetings. A combined use of both approaches is possible. It is also possible to arrange 'hybrid' meetings where a mixture of SHs and scientists participate.

General topics that need to be addressed by the facilitator and his team in each PC *before* the test begins are:

1) Possible issues at risk that could be the object of discussion with the agent in both versions: Coastal and open sea.

2) Pros and cons of alternative forms of meetings with the agent(s)

3) Methodological requirements of the chosen form of interaction with agent(s).

Step 4: Implement the test!

In the (individual or group) meetings we intend to expose the AMP Toolbox to the participants and get a feedback on its usefulness /appropriateness. The AMP Toolbox itself should be in a form suitable to be demonstrated to the potential users, preferably as a web-based platform.

We start by informing the agent(s) about the specific tools available in the AMP Toolbox. Depending on the familiarity of the agent(s) with similar web-based tools, the information phase on the AMP Toolbox functionalities could take up our first meeting (or more!). We then discuss the chosen topic sequentially in a number of meetings according to the approach/methodology chosen. We may devote our first meeting to the first topic of the above list ('understanding the issue') and investigate how AMP helps in dealing with it. The topics to be discussed are of unequal familiarity to the agent(s).

An important characteristic of AMP is policy adaptability. Therefore, the topic on 'Revise results' should be treated with care and discussed again and again. Most decision-makers do not know empirically what 'adaptive policies' look like and how such a state of policy-making can be achieved. It seems logical that in order to adapt, one has to anticipate and adjust to arising issues and lessons learnt: you adapt your targets and/or tools if you feel you are moving in the wrong direction

Step 5: Write down your results

The final output of the test is to improve and adapt the AMP in line with the lessons learned, complete the knowledge database of PERSEUS, and draw conclusions on key successes and limiting factors. User experiences of similar Toolboxes are, however, seldom written down and formalized in order to make them easily accessible for other people. Therefore, well-formed reports on the practical test and evaluation of the AMP Toolbox provides an important way of getting valuable and detailed information from the practical point of view.

The experimentation process of AMP was complemented by an on-line, structured questionnaire, which functioned as an evaluation protocol. The questionnaire was divided in six parts, each one addressing a separate aspect of AMP.

The first part addressed the issue of scope: to whom would AMP be useful? Is its target well defined and clearly explained? Does it contain adequate information? Is it comprehensive? Does it motivate the user to utilize it?

The second part addressed the issue of content: Are all important and policy-relevant issues are covered in a comprehensive manner? Is the information provided is clear, concise and well written? Is the information provided valuable? Is the structure of the tool clear, logical, and understandable to the user?

The third part addresses the issue of user interactions: Is it easy to use the tool's functions? Is the tool categorized and organized in an efficient manner? Is the retrieved information from the searching queries accurate and valuable?

The fourth part addresses the issue of technical aspects: Are all provided links reliable? Is the tool bug free? Is the time response of the tool satisfactory?

The last part addresses the issue of support and the final one prompt the reader to suggest improvements and recommendations.

Table 1 provides a summary of the developed methodology for AMP testing.

Table 1: A summary of the methodological approach.

Time frame	Planning horizon
Policy target	AMP Toolbox design to 'fit' user needs, strategic case studies development, Policy/Project design
Analytical unit	Policy makers, Scientists, PERSEUS Advisory Board
Clients	National, Regional, International
Time for assessment	Rapid, Year
Resources needed	AMP e-Platform, multidisciplinary team, design of a feedback protocol
Knowledge	Specialist
Further info	Kinnula T., Matini J. 1989. How to Test and compare CASE Tools Alamprese et al.,2012. Policy to Performance Toolkit. US Department of Education
Links	http://mashable.com/2011/09/30/website-usability-tools/ http://en.wikipedia.org/wiki/Software_testing

3. AMP experimentations by pilot case

Totally, five different experimentations have been conducted for the evaluation of the AMP Toolbox. These include the AMP experimentations in the Spanish part of Western Mediterranean, the French part of the Western Mediterranean, the Greek part of Eastern Mediterranean, the Adriatic AMP experimentation and the experimentation implemented in the Western part of the Black Sea. The main organizational details and the outcomes are presented in the following section per pilot case.

3.1. AMP experimentations in the Spanish part of the Western Mediterranean Pilot Case

3.1.1. Introduction

The main objective of this section is to present the activities carried out in Spain (Western Mediterranean Pilot Case) for testing the AMP Toolbox with different stakeholders in order to get their feedback and suggestions for further developments.

Two main activities were executed at the level of Pilot Case (Spain – Western Mediterranean): 1) workshop with research staff for practical hands-on testing of the tool; 2) face-to-face interview with marine environmental managers using one specific case study (bluefin tuna). The following sections describe the methodological approach and main results obtained in each one.

3.1.2. Experimentations with marine scientists

- **Selection of participants**

We selected a reduced number (5) of research staff from three different organizations in order to conduct a practical hands-on session with the AMP Toolbox. Participants were selected according to their knowledge about PERSEUS project and/or their previous involvement in the development of science-policy applications (Table 2).

After phone confirmation regarding their availability, an invitation email was sent to all the participants including a brief information note about the AMP Toolbox and the agenda of the workshop (Appendix III).

Table 2: List of the workshop participants.

Name	Job Title	Organization
Beatriz Morales-Nin	Director	CSIC-IMEDEA
Ignaci Català	Researcher	CSIC-IMEDEA
Patricia Reglero	Researcher	IEO
Lluís Gómez-Pujol	Researcher	SOCIB
Biel Frontera	Web-developer	SOCIB

- **Conducting the workshop**

The workshop was held on the 30th October 2014 at the premises of the Balearic Islands Coastal Observing and Forecasting System (Palma de Mallorca, Spain) from 9:45 to 11:15. Each participant was provided with supplementary information (i.e. AMP factsheet, a template for taking their notes, and a paper copy of the evaluation questionnaire) (Appendix VII and II). In addition, each one was equipped with a laptop for the hands-on session. The facilitator of the session was David March (WP6 Pilot case coordinator).

The workshop was divided into three main steps:

1) **Presentation of the AMP Toolbox** (15 minutes), carried out by the facilitator, where a general overview of the AMP Toolbox was provided together with information about general structure.

2) **Hands-on with the AMP Toolbox** (45 minutes), where each participant was asked to explore the different sections of the toolbox (having in main one specific policy issue of their election), and take notes in the provided template for further discussion. Participants were also allowed to comment and interact regarding specific issues that they found.

3) **Evaluation of the tool** (30 minutes), where a common discussion was conducted between participants first, and then followed filling the online questionnaire.

Figure 1: Workshop room with supplementary material provided to participants (left), and one moment of the common discussion at the end of the session (right).

- **Main results from the workshop**

The facilitator of the session compiled the comments and suggestions of all participants by taking notes through the workshop sessions and by revising the results of the online questionnaires. Main comments and suggestions are presented in Table 3.

Table 3: Comments obtained from Workshop.

Component	Comments	Suggestions
content	contents are very descriptive; target users were thought to be more suited to researchers than policy-makers. The big amount of text and literature was found to be more similar to a research style.	use more synthetic information initially; user more graphics as introduction for each section; and then allow accessing additional content if desired by the user
	it is no clear at all how steps and activities can contribute to adaptive policies	provide illustrative examples to better understand each part
	The use of deliverables, milestones and specific nomenclature of the project (e.g. WP number, or pilot case areas) was found a very negative aspect. Deliverables and milestones are documents for internal use of the project, and the target readers of such documents are not the same as the target users of the AMP Toolbox.	For example, for presenting the scenarios, the Table 12 of D6.2 could be used for summarizing the results.
	most of the literature is only accessible through subscriptions in research journals (not available for most of the policy-makers), and this could contribute on frustrating users for not being able to reach the contents of the Toolbox.	reduce references and focus on those sources that are open access or easily accessible. Keep more scientific and specific references for a technical document describing the tool, but not include in the tool itself.
	This initial page should have a header with direct and concise information about the goal of the website.	Add more graphics, mainly on the home page as presentation of the website
scope	stakeholder engagement is considered in different steps, however there is no clear specification about main types of stakeholders that should need to be involved in each step	identify different stakeholders categories and select their degree of involvement in the different steps and activities.
	Using the term toolbox may cause some confusion. Their first idea about a toolbox is some kind of decision support system that allows the user to insert information and then provide a response	they formulated a possible user case for the AMP Toolbox that could be possible given the information that is inside. Eig: 1) one policy-maker selects a policy-issue, one geographic region, and one governance level. 2) the toolbox provides him a summary for each step, a suggests which are the main activities and tools that could be used on each steps given their selected attributes.
	It is not clear what the toolbox provides and what do and do not.	A synthetic and more graphical explanation about the features of the AMP Toolbox should be provided in the home page
technical	stakeholders from non-English speaking countries may found some difficulties using the tool	A multilingual version of the tool would be more suitable for a broad range of stakeholder nationalities. It was acknowledged that with the big amount of content this task would be a major challenge. But if further versions provide more synthetic information, a multilingual support will be a nice feature.
	web template uses the same as Perseus website, and this have some aesthetical issues: size and text font were not considered optimal, the background photo, the limited space for the knowledge base search functions.	Consider using a custom design for the final version of the tool
	The search form should not submit automatically, since a user might want to filter for more than one field.	include a search button in each search form
	There is no FAQ section	Include a FAQ section
	There is no contact form	include a contact form
usability	it is not easy to recognise what are all the activities considered in the toolbox; some of them are numbered in the top menu, but others not	in the description of each activities not number the activity on top menu (only for some) and use 'Activities' instead; create a page called 'activities' and provide an index of activities

Component	Comments	Suggestions
	There is no sitemap of the AMP. Some pages do not appear inside a category	Include a sitemap

3.1.3. AMP Experimentation with policy makers (Bluefin tuna)

- **Introduction**

The objective of the AMP Workshop with policy makers was two-fold. First, present results of the BLUEFIN project and its potential contribution to support the design of pelagic marine protected areas. Second, use such case study to evaluate the web version of the Adaptive Marine Policy (AMP) Toolbox. The workshop provided the opportunity to the participants to get familiar with the structure and contents of the AMP, while generating useful feedback for further developments of the tool.

- **About the Workshop**

The workshop took held on the 12th December 2014 at the premises of SOCIB (Palma de Mallorca, Spain) from 9:00 to 14:00. Each participant was provided with supplementary information (i.e. AMP factsheet), and was equipped with a laptop for the technical session.

The workshop was divided into three main sessions:

Research reports, carried out by the organizing team in order to provide a general overview of the PERSEUS and BLUEFIN projects. A focus was given on the relation between ocean observing systems (PERSEUS WP3), modelling tools of Bluefin tuna (PERSEUS WP4) and the Adaptive Marine Policy toolbox (PERSEUS WP6).

Hands-on with the AMP Toolbox, where each step of the AMP Policy Cycle was assessed in regard to the particular case study. Relevant activities were identified and different resources of the toolbox were explored to assess their potential, adequacy and completeness.

Evaluation of the AMP Toolbox, where a general discussion between the organizing team and participants was conducted, and the online questionnaire was completed.

- **Participants**

The following list presents all the participants that attended the workshop:

<u>Organizing team</u>

David March, as PERSEUS WP6 member and facilitator of the workshop

Diego Alvarez-Berastegui, as BLUEFIN member

Patricia Reglero, as PERSEUS WP4 member and rapporteur

<u>Invited stakeholders</u>

Pilar Marin, Oceana

Josep Amengual, OAPN (Spanish Ministry of Agriculture, Food and the Environment)

Salud Deudero, IEO and CIESM

The workshop began with two presentations about PERSEUS and BLUEFIN projects. Both presentations can be found as supplementary material (Appendix V).

Bluefin Tuna project

The first presentation was from Diego Alvarez-Berastegui, about the BLUEFIN project. He made a special focus on spatial models of spawning habitats (Figure 2) and their potential applications in fisheries management. He provided an example from Australia (Hobday et al. 2010) which illustrates the concept of dynamic pelagic protected areas within the context of adaptive management in order to reduce Tuna bycatch. He mentioned that the key of its success is the multi-stakeholder engagement, including fisheries managers, scientists and the fishing industry as well.

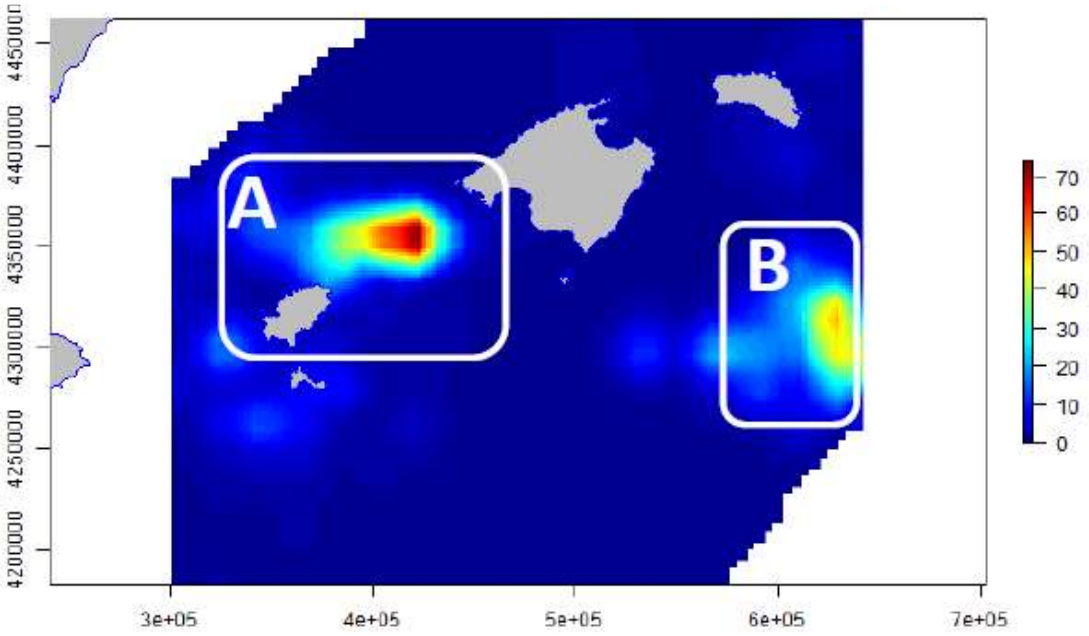

Figure 2: Predicted spawning habitat of Bluefin tuna for the year 2003.

Adaptive Marine Policy Toolbox

The second presentation was from David March, about the PERSEUS project and the AMP Toolbox. He presented the PERSEUS study areas and WPs structure. He established the link between different WPs within the context of the case study: WP3 working on observation systems with potential applications for fisheries (monitoring fishing activity with VMS and AIS, and remote sensing for inputs for the spawning habitat models); WP4 in line with Bluefin models; and WP6 within the framework of adaptive management. Then, he presented the rationale of the AMP Toolbox within the context of the MSFD and the need of establishing Programmes of measures by

2015 (Figure 3). He also provided an overview of the structure and contents of the AMP Toolbox.

Figure 3: Policy cycle of the Marine Strategy Framework Directive.

HANDS-ON WITH THE AMP TOOLBOX

David March presented an overview about each step and introduced different activities, tools and databases that could be linked to each one. It was explained that despite the broad themes targeted by the AMP Toolbox, the workshop will be focus on exploring the tool having in mind the case study of the bluefin tuna.

Step 1. Setting the scene

Three main points were assessed in this step: 1) defining the problem and the policy issue; 2) stakeholder identification; and 3) gathering existing information.

David March and Diego Alvarez-Berastegui suggested **defining the policy** issue as the overexploitation of the Atlantic Bluefin tuna. The spatial spawning habitat models presented before could be used for designing pelagic MPAs in the Balearic Sea, similarly to Hobday et al. (2010). Some discussion was conducted about if the problem of designing a pelagic area should be the focus, but it was clarified that the problem of designing and establishing a MPA is the result of working in step 2 and step 3.

The activity about **involving experts and stakeholders was presented** with a two-fold objective. First, identify stakeholders for future meetings of the BLUEFIN project; and second, to assess the potential of the Institutional inventory for the identification of stakeholders (see box below).

Evaluation: Institutional inventory database

Query constructed:

"PERSEUS pilot case=West Mediterranean Sea" & "MSFD Descriptor=COMMERCIAL FISH"

Number of results:

10

Comments from participants:

- ICCAT is not found in the result list
- The national level is not well represented. MAGRAMA is identified for Spain, but at least having the Secretariat level will be more useful. The current information seems not helpful.
- Information about competences for each organization would be an asset
- Competences are also different if we account for the jurisdictional waters. Having this information in the tool would be very helpful.
- Using PERSEUS pilot case search criteria should be replaced at some point, since it seems it limits the applicability of the tool.

The final identification list generated by all participants included the following organizations:

- International tuna management: ICCAT
- Spanish government: MAGRAMA
- European Commission: DGMARE, DGENVI
- Research and monitoring: IEO, IFREMER
- International conventions/organizations: ACOBAMS, UNEP/MAP, RAC/SPA, IUCN
- Protected areas: MEDPAN, EBSAS (Convention on Biological Diversity)
- NGOs: Oceana, WWF, Bird-Life
- Jurisdictional issues: Universidad de Sevilla

The activity related with **gathering information** was presented, and the Research projects and marine valuation databases introduced. They are PERSEUS products and potential sources of information. The Research project database was assessed in-depth by constructing a sample query (see box below), whereas the Marine valuation database was explored briefly. Participants found a disagreement in nomenclature since the "Marine valuation" is referred as "Economic valuation" in the "Knowledge base" tab. This database was found useful by participants since economic valuations are generally lacking.

Evaluation: Research projects database

Query constructed:

"MSFD Descriptor=commercial fish species"

Number of results:

20

Comments from participants:

- The 'Free text' tool seems that is not working fine.
- National projects are missing, although it is recognized that doing this work for all countries may suppose a high amount of work. It would be interesting to suggest to European Commission to work on this issue and establish interoperable protocols to join efforts and databases.
- Participants suggested other projects that were not found: Mediseh, Medseacan, Corseacan, Hermes.
- Despite its potential, participants commented that for our objective/case study the list of research projects is very poor.

Step 2. Assemble the basic policy

David March presented an overview of this step, and introduced two databases to be evaluated: the inventory of measures and the legal inventory (see boxes below).

A set of **current measures used for managing Bluefin tuna** was identified by Diego Alvarez-Berastegui as mentioned in his previous talk. Measures include TACs to different fishing modalities, minimum sizes and temporal closures. All of them are managed by ICCAT. However, such measures do not take into account environmental dependency, and for this point the spawning habitat models could play a key role.

Evaluation: Measures inventory database

Query constructed:

"Drivers=Fisheries & Pressures=Biological disturbance & Impacts=Selective extraction species"

Number of results:

24

Comments from participants:

- When clicking on one result, the header stands for "MEASURES INVENTORY **FICHE**".
- The filter criteria are based on a system of indicators (DPSIR) which is not clearly explained and related to the content.
- Titles of results are confusing and not clear.
- It seems is an inventory of responses rather an inventory of measures. Some outputs are not measures
- Results are not clear. For example, GFCM appears as a result, and this is not a measure.
- In overall, participants mentioned that this database does not seem useful for the identification of measures for the case study.

Evaluation: Legal inventory database

Query constructed:

"PERSEUS pilot case=West Mediterranean Sea & Link to MSFD GES Descriptor=Commercial fish"

Number of results:

12

Comments from participants:

- There is a duplicate for the same Spanish law. One register with name "Law 41/2010 of

December 2009" is the same law as the register with the name "Marine Protected Area Network".

- Participants comments that there is a great complexity in legal issues, and assembling all relevant national and international legislation is a big challenge. In addition, the frequent modification of laws threatens the maintenance of the database. In addition, the content of the database seems poor for the case study. In overall, they suggested that it could be more useful for the AMP to provide a list of national and international legal repositories.

Step 3. Make policy robust

There was a discussion about the **differences between step 2 and step 3**. One participant mentioned that the text from the toolbox says "here is no univocal distinction between these two tiers (which makes it a bit arbitrary)". He suggested that a clear distinction should need to be done, and suggested the possibility of aggregating both steps into a single one.

Participants were asked about their experiences in **prioritizing and assessing multiple measures** as one key activity in both step 2 & 3. Participants mentioned they had experience in assessing multiple options through the definition of key indicators and criteria, and ranking management decisions and measures accordingly. Although no specific indicators were commented for the case study, participants mentioned that different aspects should need to be considered: legal feasibility, socioeconomic issues, and monitoring costs. In addition, the impact of each measure on different stakeholders should need to be considered as well.

About **considering uncertainties**, one participant mentioned that this issue is hard to take into account since it is difficult to get such type of information in advance. In real situations, it is more likely to account for unknown responses during the step 5. It was also mentioned that for step 3, a contingency risk analysis could be conducted.

Step 4. Implement the policy

One participant highlighted the importance of a **legal framework** for implementing the policy measures. Once a legal framework exists, then the management committee can implement the policy. In addition, different legal frameworks may be used for the current case study. For example, the designation of a marine pelagic area in Spain should be declared by a law, whereas a fisheries management measure is more likely to be declared by an order from the Ministry. In addition, the same legal framework can have different **competent authorities**. For example, the terrestrial national parks have been transferred recently to Autonomous Communities, whereas a marine park is competence of the OAPN.

A map of jurisdictional waters in the Mediterranean Sea was used to discuss about competences in relation to the hypothetical establishment of a pelagic MPA in the Baleric Sea (Figure 4).

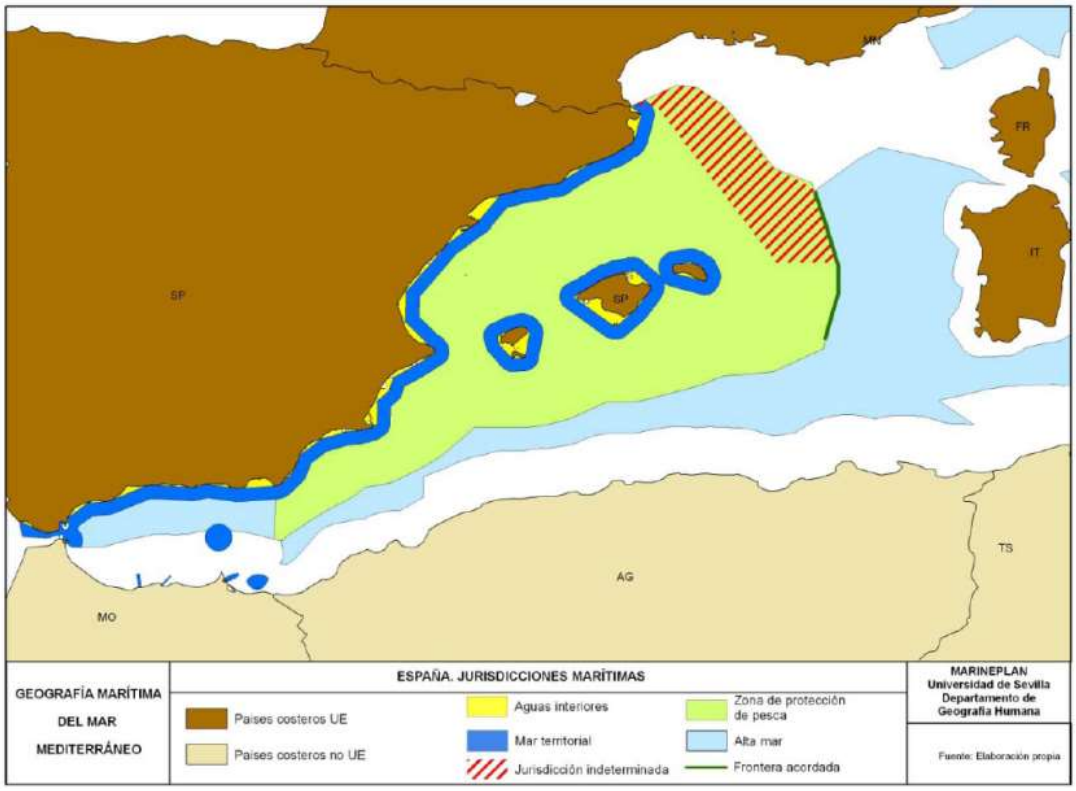

Figure 4: Jurisdictional waters in Spain (source: Suárez de Vivero et al 2009).

Step 5. Evaluate and adjust policies

Participants commented that results from a monitoring plan should need to be assess to evaluate the policy. A set of indicators should need to be defined according to objectives defined in step 1. Such analysis should be done not only to assess specific measures, but also the overall outcome.

Participants discussed about who should evaluate the policies. An independent panel was the best option. For example, one participant mentioned that in his organization (OAPN) there is a Scientific Committee for conducting external assessments.

There is a critical discussion about some of the selected tools for the key activity "Evaluate the ongoing policy". For example, it was commented that MARXAN and Habitat Priority Planner were designed for planning multiple zoning options, and not for evaluating the results of a policy. Therefore, it was suggested that the Tools database should need to be revised.

CONCLUSIONS, RECOMMENDATIONS AND NEXT STEPS

General remarks

General issues that were commented at different stages of the workshop are presented:

<u>Incorporation of non-EU countries</u>

There was a discussion about the inclusion non-EU countries in PERSEUS WP6 case studies that came during different moments of the workshop. This aspect can be very

important when working in pelagic ecosystem. Several aspects motivated such discussions:

- The AMP Toolbox is currently in English only. In order to engage riparian countries from the southern basis, it should need to be translated at least into French.
- The WP6 pilot cases did not incorporate African countries and this point should need to be considered in further projects, although some participants recognized the difficulties that can be found when working with stakeholders from African countries (e.g., lack of resources).
- Some parts of the AMP make explicit references to the MSFD, which only affects EU member states. It would be interesting to incorporate the Ecosystem Approach Strategy (ECAP) since it affects all Mediterranean countries.

Jurisdictional analysis

This issue appeared in the discussion throughout different steps.

The identification of stakeholders raised the issue of complexity of jurisdictional issues at national and international levels. Information about EEZs and other jurisdictional waters (like Fisheries protection zone in Spain) are very important. All that has to do with the management of marine pelagic species is that the species is not only in the EEZ.

About the tool

What is AMP?

There was an initial misunderstanding about what AMP stands for. In Spanish, AMP stands for "Area Marina Protegida" (marine protected area, MPA), which could bring to a misleading concept about the tool. In this sense, participants would have preferred to use the original APF acronym (Adaptive Policy Framework) rather than AMP.

The AMP policy cyle

The structure of policy cycle was commented by participants. Similar frameworks have a long tradition in adaptive management in terrestrial ecosystems and the AMP seems to translate it to marine ecosystems. One of the difficulties found to better understand what is the rationale of the different steps is the clarity of the text. Text was very descriptive and at some points rather unclear for participants.

A similar tool for guiding the design of MPAs (Pomeroy et al. 2004) was identified by one of the participants, and another recent guide for Marine Spatial Planning (Ehler 2014).

Knowledge base

In general, most of the databases were found clear enough to start searching for data, with the exception of the Measures database. This one was found unclear which discouraged participants about thinking about its potential. The adequacy and potential of the rest of the databases was found correct, although the major weakness

was the content of the databases. In general, they were found to have poor content which was not useful at all for the specific case study of this workshop. In this context, one recent example about a MPA toolkit (http://www.mpaaction.org/) was provided by one of the participants.

Maintenance of the tool

Participants commented their concern in relation to the maintenance of those databases in the long-term and after the PERSEUS project will finish. As recommendation, a long-term strategy carried out at USA in order to support the sustainment of such kind of projects (http://www.lternet.edu/) was mentioned.

Online questionnaire

Participants were asked to fill the online questionnaire from the website. The responses are analysed together with the results from the rest of the Pilot Cases and reported in section 5 of this report.

3.2. AMP experimentations in the French part of the Western Mediterranean Pilot Case

3.2.1. Introduction

In this section, we will focus on the tests performed within the French part of Western Mediterranean pilot case area, presenting the results of the implementation and testing procedures within this pilot case.

Intermediate and high level policymakers -stakeholders from PERSEUS stakeholder platform- were selected for performing the tests. The procedure applied during the testing with policymakers is expected to enrich the experimentations through well documented and robust opinions from policymakers who participated also in the AMP planning procedure. This procedure consisted of the following three steps: (i) presentation of the AMP Toolbox; (ii) testing potential applications of the toolbox; and, (iii) feedback collection. Procedure followed during the tests, the participants in the experimentations and qualitative comments are described in the following sections. The quantitative data from these interviews is included in the filled online questionnaires. This info was integrated with data from all other case studies and depicted in section 5 of this report (Survey results).

3.2.2. Workshop with research staff

- **Selection of participants**

Nine stakeholders from different organizations participated into the procedure for the evaluation of the AMP Toolbox. The participants were selected according to their experience with the MSFD and/or their previous involvement in the development of science-policy applications (Table 4).

Table 4: List of the workshop participants.

Name	Job Title	Organization
Carla Murciano	Consultant	Freelance
Antoine Lafitte	Programme officer	PLANBLEU
Pierre Boissery	Expert	AERMC
Jean-Pierre Giraud	Programme officer	PLANBLEU
Yves Henocque	Senior adviser	IFREMER
Frank Fredefon	Programme Officer, Head	Inter-Regional Directorate at the Sea (DIRM Med)
Catherine Piante	Programme officer	WWF France
Denis Ody	Programme officer	WWF France
Christophe Le Visage	Consultant	Freelance

- **Conducting the experimentations- face to face interviews**

Interviews were implemented by Didier Sauzade and Julien Le Tellier:

- On the 30th October 2014 at the premises of the AERMC (Marseille, France) from 8:45 to 12:15
- On the 16th December 2014 at the premises of Plan Bleu (Marseille, France), from 9:00 to 11:00, and from 14:00 to 16:30.

Interviews were divided into three main steps:

1) **Presentation of the AMP Toolbox**

2) **Testing of the AMP Toolbox**

3) **Evaluation of the AMP Toolbox**

- **Main qualitative results from the experimentations and lessons learned**

Generally, the AMP Toolbox was assessed positively and it is expected to contribute effectively to the preparation and implementation of an integrated marine/maritime policy. Specifically, the AMP Toolbox will provide valuable guidelines to the involved managers and policymakers regarding how to implement an adaptive policy to their field of expertise.

Moreover, the utilization of AMP Toolbox will contribute to the confrontation of existing knowledge gap problem, which is obvious nowadays. Indicatively, the definition of the policy targets is performed without conducting a real assessment regarding the potential impact of these targets on the GES. One remark regarding PERSEUS policy cycle is the fact that it does not allow to identify gaps in order to achieve the GES – "*what is missing in your area, in the management of your area to achieve GES*".

"*We need new knowledge and actions of monitoring to adapt the initial policy*". "*The problem is that the scientific approach is the basis of the MSFD, but a framework directive is a binding instrument: it is not a research project! In principle Science should support Policy, and no the opposite* (…) *Needs of new knowledge have to be prioritized according to the most urgent (and taking into account budgets/resources available)*".

The AMP Toolbox will be probably most useful for the case of local managers and other stakeholders instead of the case of high level policymakers.

"*The AMP Toolbox is more useful for policymaking at intermediate level and for stakeholders in charge of 'everyday management' (namely local services of ministries, and above all specialized agencies dealing with sector policies and implementing measures and actions) than for high level policymakers. (…) NGOs could also be interested since they participate into adaptive and integrative management: civil societies can use (interpretation/translation of) scientific knowledge. (…) Adaptive management is close to "learning by doing" principle, involving all stakeholders – including civil societies and economic sectors*".

The role of each group of users should be more highlighted in each step (not only mentioned) and the information targeting each group more precisely stated. This will distinguish which tools and information can be used by a specific type of user.

The provided information is clear and valuable in most cases. However, since a lot of information is given, it might be useful to specify the target group of each kind of information. Furthermore, special efforts must be given to synthesize information and to provide the most adequate one to each step of the toolbox.

Even if the structure of the AMP Toolbox is well defined, it is essential to clarify different objectives and processes in each separate step. It is crucial the Step 3 to be more clearly distinguished from Step 2. In addition, the tree-structure has as a result for the user to lose his track easily. In this case, the followed path should be presented so as to have a complete overview of the toolbox and the features.

The AMP Toolbox seems to be reliable regarding its technical performance, but some malfunctions should be repaired focusing on links that do not work and the lists with blank fields.

The databases are generally complete, but they can be improved especially during the filtering procedure. Regarding their contents, it is important to focus on the integration of indicators for the monitoring of the processes and tools for the assessment of the implementation, as well as tools for the assessment of costs of the measures and the estimation of the socioeconomic impact of the actions.

Finally, the presented examples are limited and could be more focused or adapted to each of the step rather than being general. For example, a more explicit link with other existing implementing strategy was suggested such as in the case of the ICZM Protocol (see PEGASO FP7 project). Furthermore, a brief justification for the selection of these examples must be presented.

Last but not least, it would be worth to promote the collective work on governance trajectory identification throughout time and in response to changes. In complement to 'Who should be engaged', the toolbox should develop 'Who should moderate and how' putting the emphasis on the necessary institutional arrangement through the evolution of the coordinating unit and its composition so that the policymaker understands that here the process is as much important as the outcome.

Interesting opinions by other policymakers include the following qualitative results:

- Adaptive management is useful for a given area/territory, taking into account the specificities of the territories (both natural and governance aspects).
- The issue is to deal in a balanced manner between conservation issues and development challenges (human activities, economic sectors).
- Adaptive management is close to “learning by doing” principle, involving all stakeholders – including civil societies and economic sectors. (But it is not the case for the time being regarding the MSFD implementation).
- Very often the objectives are well described, but not the mean of implementation and financing.

- Be careful regarding shopping lists in the AMP Toolbox: What are the limits in terms of number of tools, examples, case studies: at the end, that could be too full… So be realistic. Add only some examples.

- Adaptive management implies mid-term (and continuous) evaluation/assessment. Policy cycle of the AMP Toolbox is interesting, but all things/steps are not at the same level. In terms of dynamic, information is continuously developed (GIS for instance) as well as stakeholder participation and governance.

- Feedback about AMP Toolbox:

    - Very good to have defined 3 phases for (robust) preparation of the policy. A question has been raised about the duration of the Policy Cycle. Timing issue: it is difficult to define the good/right timing. 5-6 years seem a good timescale for a plan/action/measure (if more, then that is vision).
    - Very good in terms of references and existing documents available online.
    - Useful design. Very good in terms of technical aspects. Self-explanatory.

- Room for improvement of the AMP Toolbox:

    - Information aspects (regarding baseline situation)
    - Participation aspects: At what step? How? (Need for sociology and anthropology). Need for participation of all stakeholders to define/find compromise. Policymakers need supporter among stakeholders. The issue is how to change stakeholders' behavior from opponent to supporter. Need to have a governance framework at the level of the issue/problem tackled by the policy.
    - Need to better show iterative aspects.

- Glossary: good idea! One very simple, and another more detailed for each step.

- Additional Sources of inspiration were also suggested: Olsen and other literature regarding "orders of outcomes" and "changes of behavior".

    - https://wiki.csiro.au/confluence/download/attachments/368541761/Olsen+2003+Frameworks+and+indicators+for+assess+progress+in+ICZM.pdf

    - http://fr.slideshare.net/riseagrant/olsen-frameworks

Finally, regarding adaptive policy/management, some stakeholder statements seem particularly of importance, as follows:

'Actually local managers and policymakers make adaptive policies without using this expression of "adaptive policy": they decide, they implement actions/decisions, they assess the results of such actions/decisions, they adjust/adapt to recent developments and observations (taking into account new scientific evidence/knowledge). They have 'monitoring indicators' (indicators of objectives' achievement). The only missing part is that they define policy targets without

developing a real assessment regarding the potential impact of these targets on the GES…'

'We already make adaptive policies without naming these policies as adaptive. We use often the DPSIR framework. Developed in the context of MSFD implementation, Action Plan for Marine Ecosystem (Plan d'Action pour le Milieu Marin - PAMM) for the French Mediterranean façade is clearly adaptive, asking for adjusting measures according to assessments of results'.

'Policymakers and managers define realistic/achievable/doable/feasible objectives/actions (according to sources of funding and technical aspects). That is different in comparison to scientific approach: scientists would like to know everything and everywhere, without considering costs… In the reality of the field, you can (you have to) decide in a context of uncertainties – without having the relevant knowledge. And that could be a strategic choice… The lack of knowledge has not to be a reason for not deciding! We don't know all on all and everywhere, but we have to act in this context'!

'High priorities are given to decision without possible regret. I decide in a context of lack of knowledge. I decide without having all knowledge. Then I am able to adjust and complete by taking new evidence coming later'.

'Need for tools allowing for assessing costs of measures and socioeconomic impact of actions'.

Best actions/measures according to stakeholders are these which:

'Are the less expensive. Are making scientists work. Mobilize all stakeholders (synergetic effects), particularly socio-eco sectors (e.g. fishermen). Improve the state of the environment. Fit the legal obligations (framework directives). Allows communication (marketing and mass media aspects). Have good results!'

3.3. AMP experimentations in the Aegean- East Mediterranean Pilot Case

3.3.1. Introduction

This section presents the activities carried out in Greece (East Mediterranean Pilot Case) for testing the AMP Toolbox with different stakeholders in order to get their feedback and suggestions. Further developments of AMP Toolbox will be based on feedback received through these experimentations.

Two main activities were executed at the level of Pilot Case: 1) An experimentation-workshop with marine scientists dedicated to analyze the use of the tool, explore its usefulness and potential malfunctions; 2) In-depth AMP testing (in-depth interviews) with policy–makers marine environmental managers, using two specific case studies (offshore wind farm spatial planning and marine litter problems) for practical hands-on testing. The following sections describe the methodological approach and main results obtained in each one.

3.3.2. Experimentation with marine scientists

- **Selection of participants**

In order to conduct a practical hands-on session with the AMP Toolbox, marine scientists (mainly HCMR research staff) were invited. Participants were selected according to their familiarity with PERSEUS project and/or their previous involvement in the development of science-policy applications (Table 5).

After personal contact for confirmation regarding their availability, an invitation was sent via email to all the participants including a brief information note about the AMP Toolbox and the agenda of the workshop.

Table 5: List of the workshop participants.

	PARTICIPANT	JOB TITLE
1	**Dr. Christou Epaminondas**	Director of research, Biologist oceanographer
2	**Dr. Kaberi Helen**	Senior researcher, Chemist oceanographer
3	**Dr. Kontoyiannis Harilaos**	Director of research, Physicist oceanographer
4	**Dr. Michalopoulos Panagiotis**	Senior researcher, Geologist oceanographer
5	**Mr. Ntokos Ioannis**	Scientific officer, Programmer - analyst
6	**Dr. Panagiotidis Panayotis**	Director of research, Biologist oceanographer
7	**Dr. Pantazi Maria**	Scientific officer, Statistician oceanographer
8	**Mr. Papadopoulos Euripidis**	Administrate officer, (Master of Science in Services Management)
9	**Dr. Pavlidou Alexandra**	Senior researcher, Chemist oceanographer
10	**Dr. Patiris Dionisis**	Post-doc Fellow, Nuclear physicist

	PARTICIPANT	JOB TITLE
11	**Dr. Tsangaris Catherine**	Senior researcher, Biologist oceanographer
12	**Dr. Velaoras Dimitris**	Scientific officer, Physicist oceanographer
13	**Dr. Zeri Christina**	Senior researcher, Chemist oceanographer
14	**Dr. Zanou Barbara**	Scientific officer, Environmental economist
15	**Dr. Papathanassiou Evangelos**	PERSEUS project Coordinator, oceanographer
16	**Prof. Skourtos Michalis**	Facilitator to the workshop
17	**Prof. Kontogianni Areti**	Facilitating group
18	**Dr. Tourkolias Christos**	Facilitating group
19	**Prof. Damigos Dimitris**	Facilitating group

- **Conducting the experimentation with scientists**

The workshop took place on the 23rd October 2014 at the premises of the Hellenic Center for Marine Research (Anavyssos, Athens) from 9:45 to 14:30. As this was also the first testing of AMP Toolbox soon after its completion, it functioned as a pilot evaluation. Each one of the 15 participants was provided with supplementary information (i.e. AMP factsheet, a template for taking their notes, and a paper copy of the AMP evaluation questionnaire) (Figure 5). The facilitator of the session was Prof. M. Skourtos. Conveners to the facilitator were Prof. A. Kontogianni, Prof. D. Damigos, and Dr. C. Tourkolias (note taking, personal discussion with participants in the initiation phase and during the evaluation of the tool).

The workshop was divided into four main steps:

1) **Presentation of the AMP Toolbox** (25 minutes), carried out by the facilitator, where a general overview of the AMP Toolbox was provided together with information about general structure.

2) **Hands-on with the AMP Toolbox** (45 minutes), where each participant was asked to explore the different sections of the Toolbox (having in mind one specific policy issue of their choice), and take notes for further discussion. Participants were also allowed to comment and interact regarding specific issues.

3) **Oral evaluation of the AMP -discussion** (2 hours), where a common discussion was conducted among participants and various issues concerning AMP were raised.

4) **Written evaluation of the AMP** (20 minutes), during an informal discussion/ coffee break. The facilitator together with the 3 conveners explained the web-based evaluation protocol, potential development of case studies and further suggestions for the AMP Toolbox.

Figure 5. Workshop room with participants.

- **Main results from the workshop**

The facilitating group compiled the comments and suggestions of all participants by taking notes through the workshop sessions and by revising the results of the online questionnaires. Main comments and *qualitative* suggestions are presented below. Further *quantitative analysis* of the AMP evaluation (after integration with the other Pilot Cases) was performed by the coordination team of Task 6.4 for the present Deliverable 6.13 and can be found on the last section of this Deliverable.

The main comments raised from the first AMP test, organized on Oct. 23, 2014, are the following:

1. The length of the text is really long in some fields and constitutes a deterrent factor for the potential user. A shorter text was generally preferred providing a brief description of the subject, while a button "More" could navigate the user to additional information.

2. There was a general comment regarding the layout of the AMP tool web pages. It was suggested, wherever possible and practical, to replace plain text with diagrams or flow charts displaying the necessary steps or with a graphical presentation of the main information with bullets, in order to make the tool more attractive.

3. The definition of “adaptive” policy should be further clarified. For instance, the term “dynamic policy” was mentioned as a means to make the definition more clear. From a scientific point of view the term ‘dynamic’ is more relevant depicting the dynamic form of the policy making.

4. It is necessary to add more “best practice” examples and published papers in “Further reading” sections. This would enhance the scientific background of the toolbox and would improve its operationalism. Furthermore, it would be convenient to provide pdf files wherever possible.

5. In several sections, e.g. “Tools”, there are non-functional links within the toolbox. If there is a reason for that, it should be explained perhaps with a short explanatory text.

6. In certain steps there are numerous proposed tools belonging to different categories (for example brainstorming, MARXAN, SWOT analysis, AMBI indicator are completely different to each other). Thus, the user easily becomes confused navigating through the tools. It was suggested to classify, rank or prioritize the proposed tools giving the user the opportunity to select the most suitable ones for his specific application. The evaluation can be based on the experience and the expert judgment of PERSEUS’ partners.

7. A brief description should be provided in addition to the link, especially in the “Tools” sections. For instance:

MARXAN: (freely available conservation planning software, which provides decision support to a range of conservation planning problems)/ Ecopath with Ecosim (a free ecosystem modeling software suite), etc.

8. Avoid using titles of specific projects and deliverables in link titles. These titles are conceivable only from projects’ partners. Thus, the titles of existing links should be changed. For example: In “Regional models” section the title of the link “Scenarios to be modeled Extract for deliverable D.4.2 ”should be renamed to “Modeling Scenarios”. In “Regional Assessments” section, instead of “Analysis of the main risks of non-achievement of the GES, by the WP1 (open sea) and WP2 (coastal areas)”, the tile of the link could change to “Analysis of the main risks of non-achievement of the GES in the Mediterranean and Black Seas”

9. Similarly, there is no need to have two different links prior to opening the pdf file (e.g. In “Regional Assessments” section when clicking on the “Analysis of the main risks of non-achievement of the GES, by the WP1 (open sea) and WP2 (coastal areas)” link a new window opens with a new link “Milestone M17, Identification of the socio-economic issues to be treated within PERSEUS” that opens the relative file.

10. The toolbox seems to be more “educational” than “operational”. It is vital to focus mainly on the implementation of policies and on corresponding methodologies and tools.

11. The use of links relating to specific research projects is a little bit risky. It is known that project web pages are not functional forever. The functionality of the provided links should be checked on a frequent basis.

12. No link exists for certain cases (e.g. the case of Marine Scotland toolbox.) Include such links to convene the policy maker.

13. It would be more convenient if the right-sided column (i.e. "About the AMP toolbox, Policy cycle, Step 1 etc.) automatically scrolled down, following the user.

14. In order to avoid any misunderstandings regarding the aim and the target group of AMP Toolbox, perhaps it is necessary to add in the first page, i.e. "About the AMP Toolbox", a distinctive section labeled "To whom is it addressed" and probably a section "Do's and don'ts" to clarify the use of the tool.

Figure 6: Questions during the AMP evaluation.

3.3.3. Experimentations with policy makers

Two different policy makers participated into the procedure with the in-depth interviews for the case of Greece.

The description of these interviews is performed in the following sections.

- **Policy maker A**
  - **Selection of participant for the first Greek AMP in-depth interview**

A senior consultant from the General Secretariat of Energy and Fossil Raw Materials, which administratively belongs to the Ministry of Environment, Energy, and Climate Change, was selected to participate in the first in-depth interview for the case of Greece. The General Secretariat of Energy and Fossil Raw Materials is responsible for

the implementation of the energy policies in Greece including the further penetration of offshore wind parks. Even if it was recognized the fact that no direct relation and experience exist with the implementation of MSFD, the installation of offshore wind parks and the triggered impacts on the marine environment are considered as representative case studies for the implementation of the MSFD and the utilization of the AMP Toolbox. A direct link to Offshore Wind Farm Parks marine spatial planning in Greece was identified as a potential application of AMP Toolbox.

The arrangement of the interviews was performed after a phone discussion informing the policy maker about the project and the AMP Toolbox. The first meeting was mostly dedicated to brainstorming, through which the aim of this evaluation was set. Finally, an email was sent one week before each meeting in order to remind and confirm the interview.

- **Conducting the in-depth interviews**

The interviews with the policy maker A were conducted on the 14th and 28th November 2014 in the premises of the General Secretariat of Energy and Fossil Raw Materials in Athens from 13:30 to 17:30. Supplementary material was given to the policy maker including the AMP factsheet and a copy of the evaluation questionnaire. The presentation of the AMP Toolbox and AMP application was performed through the policy makers' personal computer.

The conduction of the in-depth interview included the three following steps:

I. **Presentation of the AMP Toolbox** (50 minutes)

The presentation of the toolbox was carried out by the facilitator, providing a general overview of the toolbox and presenting briefly a hypothetical case study focusing on the implementation of all the steps of the policy cycle as proposed by the AMP toolbox. The selected hypothetical case study focused on the confrontation of the problem of the noise, which is generated by the operation of the offshore wind parks and on the alleviation of the significant triggered impacts on the marine species.

II. **Discussion about the AMP Toolbox** (65 minutes)

In the second section, a fruitful discussion was taken place analyzing the main advantages and disadvantages of the AMP Toolbox as identified for the policy maker's point of view during the presentation of the hypothetical case study.

III. **Evaluation of the tool** (25 minutes)

Finally, the policy maker completed the online questionnaire, while some additional questions and comments were discussed before the closure of the interview.

- **Main qualitative results from the in-depth interview with policy maker A**

The general derived outcome from the evaluation procedure was the conclusion that the AMP Toolbox can be considered as a very useful and necessary tool enhancing the capabilities of the policy makers in the field of energy planning in the marine environment.

According to his assertions, an essential strong point of the AMP Toolbox is the provision of detailed information, while the provided information can be assessed as valuable especially for someone, who does not have any significant previous experience with the implementation of the MSFD and the related issues. This is the case with energy policy makers implementing marine spatial planning as in the case of Offshore Wind Farms.

As Policy maker A mentioned, it is crucial the provided information to be organized in a more efficient structure in order to be utilized by a policy maker immediately. He claimed that for his case it will be beneficial firstly to be informed about the examined problem and the requirements of the MSFD and then to proceed to the planning and the implementation of the most efficient policies selecting from the AMP Toolbox the necessary methodologies and tools.

Furthermore, he admitted that he would prefer the holistic confrontation of the examined problem from the AMP Toolbox, but he recognized the difficulties of this approach. Nevertheless, he supported the statement that it is necessary to present the necessary steps and activities in a more simplified and clarified way in order to facilitate the implementation of an adaptive policy.

To this direction, he acknowledged the fact that the potential integration of case studies and examples will increase the effectiveness of the toolbox and will help the potential policy makers to become more aware and productive.

The resource section was proved very interesting to him and admitted that this provided information is valuable for the development and the implementation of the most efficient methodology.

Nevertheless, he highlighted the necessity to improve the visual presentation of the provided information and to increase the user-friendliness of the AMP toolbox generally.

Finally, he claimed that the support section must be improved significantly giving the opportunity to the potential policy maker to resolve potential malfunctions and questions about the toolbox immediately avoiding the waste of time and resources.

- **Policy maker B**
  - **Selection of participants for the second Greek AMP in-depth interview**

The second in-depth interview with policy makers in Greece towards evaluating the Adaptive Marine Policy (AMP) Toolbox was conducted with a senior policy maker from the Special Secretariat for Water (SSW), which administratively belongs to the Ministry of Environment, Energy, and Climate Change. The SSW is responsible for the development and implementation of all programs related to the protection and management of the water resources of Greece and the coordination of all competent authorities dealing with the aquatic environment. The SSW is composed of four Directorates and is headed by a Special Secretary, appointed by the Ministry of Environment, Energy and Climate Change. The Secretariat is responsible, among others, for the implementation of the MSFD and Water Framework Directive and is included in the PERSEUS Stakeholder Platform.

The first interview was arranged after informing the policy maker about the purposes of the meeting (i.e. presentation and evaluation of the AMP Toolbox) and was confirmed via emails two days before the interview.

- **Conducting the in-depth interviews**

The in-depth interview was conducted on two different days (November 14th and December 12th, 2014) in the premises of the SSW in Athens. The first meeting lasted about two hours (between 12.30 and 14.45) and except from the interviewee (i.e. the senior policy maker from the SWW) it was also attended by an external consultant of the MSFD Secretariat and another member of the SWW. This first meeting included the following sections:

I. **Presentation of PERSEUS project** (15 minutes)

The presentation was carried out by the facilitator, providing a general overview of the project (aim, scope, progress, etc.) focusing on the connection with the MSFD.

II. **Presentation of the AMP Toolbox** (60 minutes)

The presentation was carried out by the facilitator, providing a general overview of the toolbox. The presentation of the AMP Toolbox was performed through the AMP Toolbox webpage using a personal computer and a projector. The presentation was focused mainly on the concept of the 'Adaptive Policy Making' and the five steps of the policy cycle proposed by the AMP Toolbox. For each and every step the main sections were presented (e.g. 'What is this step about?', 'Why is this step necessary?', 'How should this step be carried out?', etc.). Particular attention was given to the additional information provided (e.g. tools and methods included in 'Key activities', 'Further reading', etc.). Finally, a more detailed presentation was provided for the AMP Toolbox Resources.

III. **Discussion about the AMP Toolbox** (60 minutes)

In this section, a fruitful discussion took place analyzing the main characteristics of the AMP Toolbox from a policy maker's point of view, as well as the main advantages and disadvantages that were identified by the attendees. In addition, supplementary material was given including the AMP factsheet and a copy of the evaluation questionnaire. The rest of the discussion was constructed around issues of how to perform the evaluation of the AMP Toolbox. The facilitator proposed two alternative ways in order to gain further insights and to evaluate the usefulness of the tool: the design of a 'general' roadmap towards implementing the MSFD or the design of 'tailor-made' policies using specific MSFD Descriptors as case studies, namely the Descriptors D5 (Eutrophication) or D10 (Marine Litter). The attendee argued that the first alternative would be more convenient. In addition, it was noted that the evaluation of the tool should be carried out on a comparative basis, i.e. 'with' and 'without' the use of AMP Toolbox. After that, a second meeting was decided, giving sufficient time to allow policy maker search, use and get familiar with the tool.

The second meeting was arranged about a month later and focused solely on the evaluation of the tool. It lasted about one hour and a half (between 13.00 and 14.30). Within that time, the policy maker completed the online questionnaire, while some additional questions and comments were discussed before the closure of the interview.

- **Main qualitative results from the in-depth interview with policy maker B**

The general outcome derived from the evaluation procedure was that the AMP Toolbox can be considered as a very useful and necessary tool addressing the main questions on the particular demanding aspect of marine policy-making in the context of the MSFD. The policy maker mentioned other tools used in marine policy issues and concluded that the AMP Toolbox is considered to be the most integrated one.

As regards the 5-step adaptive policy-making framework, it was reported that these steps are already known to experienced decision-makers; however, it is quite useful the fact that the steps are presented in a concise manner. According to the policy maker's comments, a strong point of the tool is that it attempts to include all necessary info around the issue, which is a quite demanding task. The provision of information is detailed and valuable especially for those not having significant experience with the implementation of the MSFD and the related issues. However, it was mentioned that it would be valuable to include suggestions/reports on dealing with existing knowledge gaps, which represents one of the major difficulties faced by marine policy- and decision-makers. In addition, it was argued that the tool may seem complex (especially to elderly policy- and decision makers) requiring some time to get familiar with. Thus, it was suggested to improve the visual presentation and to increase the user-friendliness of the AMP Toolbox. Towards the same direction, it was noted that the information provided should be organized in a more efficient structure (e.g. it would be more convenient to shorten the display of full text).

It was claimed that it would be beneficial for policy-makers to include more information and guidelines on how to develop scenarios (Step 1 – Key Activity 4), although it was recognized that specialized knowledge may be needed. Furthermore, it was acknowledged that the inclusion of case studies and examples (both successful and failure), especially from European countries would certainly increase the usefulness and the effectiveness of the toolbox and would help the users to understand the problems and redefine their strategies.

Particular mention was made of the usefulness of the 'Resources' section. It was told that this section provides interesting and particularly valuable information, even to experienced policy-makers, in the context of the MSFD, e.g. the ability to select measures from the 'Policy Measures' database or to estimate monetary values for cost-benefit analyses of measures from the 'Marine Valuation' database.

Finally, regarding technical aspects and user interactions the comments were generally positive.

3.4. AMP experimentations in the Western Black Sea Pilot Case

3.4.1. Introduction

In this section, we focus on the tests performed within the Western Black Sea pilot case, presenting the results of the implementation and testing procedures within the Western Black Sea pilot case.

Two groups of stakeholders were selected for performing the tests. However, the procedure applied during the testing with the two groups was the same and consisted of the following three steps: (i) presentation of the AMP Toolbox; (ii) presentation of an example of application of the toolbox; and, (iii) feedback collection. The

application of this structured and well-defined procedure, made possible the comparison of the feedback provided by the stakeholders.

The procedure followed during the tests, as well as the participants in the experimentations are described in the following sections.

3.4.2. Experimentations

- **Planning the experimentations**

The development of the experimentations in the Western Black Sea pilot case was a common effort of BSNN and BC3. The materials used during the implementation of the testing were produced by Maialen Garmendia (BC3) in consultation with Aleksandar Shivarov and Emma Gileva (BSNN).

A "Briefing for testing the AMP Toolbox at Pilot Case level" was prepared (see Appendix I) to plan and disseminate the procedure for the testing phase. This procedure consisted of three steps:

- ✓ Brief presentation on the structure, objectives and functionality of the AMP Toolbox (Appendix V). This included two sub-steps. Firstly, a brief power point presentation was shown to the participants in order to explain the fundamentals and the structure of the AMP Toolbox. Second, an online tour was performed to show the way the AMP Toolbox works on the PERSEUS website.

- ✓ Presentation of an example or a storyline of an issue at risk of not achieving or maintaining Good Environmental Status in order to demonstrate how the different steps, key activities and resources within the AMP Toolbox could be applied.

  The preparation of the second step (i.e. examples or storylines) was particularly laborious, since it required to: (a) compile information on the issue in question; (b) apply the different steps, key activities and resources to the issue in question; and, (c) present all the information in a friendly and easy to understand manner.

  For the Western Black Sea pilot case two examples were developed, since the scientists and policymakers that were interviewed had different backgrounds and fields of interest. The examples covered the following topics: (1) the overexploitation of turbot stocks in the Western Black Sea (Appendix V); and, (2) the case of eutrophication in the Western Black Sea (Appendix V).

- ✓ Collection of stakeholders' opinions and suggestions on the AMP Toolbox through a questionnaire developed by AEGEAN and structured interviews.

- **Selection of participants**

  Since the experimentations were organised by two spatially distant organisations, the testing took place in Bulgaria and Spain. Two groups of participants were targeted: scientists with prior experience in the Southern European Seas, including the Black Sea, based in Spain; and Bulgarian

researches and policy makers, directly involved in the implementation of the MSFD in the Western Black Sea area. The two groups were selected based on their experience and knowledge of the MSFD implementation process, including seven stakeholders from five different institutions in order to perform the tests and thus obtain their feedback from the AMP Toolbox. The groups were organised as follows:

- ✓ Group 1: This group consisted of four scientists with experience in the Southern European Seas and/or experience in supporting decision-makers in the decision-making process regarding coastal and marine ecosystems. The objective here was to make a first trial of the AMP Toolbox as well as of the testing procedure itself.
- ✓ Group 2: This group consisted of two scientists working on the Western Black Sea and with deep knowledge and understanding of the area, as well as with a strong background of supporting policymakers in the decision-making process regarding Black Sea´s coastal and marine ecosystems. **Two policymakers**, representing the MSFD competent authority in Bulgaria were also interviewed. All of the participants in this experimentation are members of the Western Black Sea stakeholders' platform.

The overall objective was to ensure different perspectives and backgrounds to obtain an integral feedback of the different components of the AMP Toolbox. Once the participants were selected, an email of invitation was sent to the potential participants (Table 6) together with the "Briefing for testing the AMP Toolbox at Pilot Case level" to explain the abovementioned three-steps procedure.

Table 6: List of participants in the experimentations.

Participant	Job title	Organization	Date
Group 1			
Irati Epelde	Junior researcher	AZTI-Tecnalia (Spain)	5th November
Nagore Zaldua	Pre-doctoral researcher	AZTI-Tecnalia (Spain)	5th November
Elena Ojea	Research fellow	BC3 (Spain)	6th November
Federico Cardona	Postdoctoral researcher	BC3 (Spain)	6th November
Group 2			
Vesselina Mihneva	Research fellow	IFR (Bulgaria)	21st November
Daniela Toneva	Associate professor	TU-Varna (Bulgaria)	22nd November
Stela Barova	Senior expert	BSBD (Bulgaria)	16th December
Silvena Gospodinova	Senior expert	BSBD (Bulgaria)	16th December

- **Implementation of the experimentations**

A total of five workshops / interviews, involving five researchers and two policy makers, took place at different institutions between the 5th of November and the 16th of December (Table 6).

Within Group 1, two workshops were carried out at AZTI-Tecnalia and at the Basque Centre for Climate Change (BC3), including two participants respectively. The workshops were facilitated by Maialen Garmendia (BC3).

Within Group 2, two interviews were held at the Institute of Fishery Resources (IFR) and at BSNN premises with a researcher from the Technical University - Varna (TU-Varna). A workshop with experts, responsible for marine waters, was organised at the Black Sea Basin Directorate. These experimentations were organised and conducted by Emma Gileva and Aleksandar Shivarov (BSNN).

The workshops and interviews were held for approximately one hour and a half. Each participant was asked to fill in the questionnaire either online or on paper. Apart from presenting the material described above, the respondents were provided with a leaflet on the AMP Toolbox (see Appendix VIII). According to the described plan the workshops were carried out in three steps:

Brief presentation of the AMP Toolbox (20 min): The leader of the workshop gave a brief presentation on the AMP Toolbox. First, the AMP Toolbox was put into context with special emphasis on what is the AMP Toolbox, for whom and why it has been developed and how it is applied. Second, the presenter led an online tour through the AMP Toolbox in order to present and clarify the structure and functioning of the toolbox.

Presentation of an example or a storyline (30 min): The leader of the workshop presented an issue at risk of failing to achieve or maintain the Good Environmental Status in the Western Black Sea. In the workshops organised with Group 1 (at AZTI-Tecnalia and BC3) and the interviews with Group 2 (IFR and TU-Varna) the case of turbot overexploitation was employed. Through the turbot case as an example, the application of different steps, key activities and resources was presented. Finally, for the interview at BSBD the case of eutrophication was employed.

Collection of opinions and suggestions of stakeholders (30 min): First an open discussion was performed with all the participants in order to make general comments and suggestions. These suggestions were noted by the facilitator. Moreover, the participants also had the opportunity to make this kind of suggestions along the whole process. Finally, the participants were asked to fill the questionnaire developed by AEGEAN.

- **Lessons learned, proposal for AMP Toolbox improvements**

The overall reaction of the participants in the experimentations to the AMP Toolbox has been positive. They approved of the attempt to introduce adaptive policy making approaches in the decision-making process on the marine environment. The wealth of resources included in the toolbox has been also appreciated. A major weakness

appears to be the structuring of the information into multiple levels that makes the application of the step-by-step policy cycle complicated and opaque for the user.

Looking at the different aspects of the toolbox, the Content and the Technical aspects were the components with the highest rating, indicating the high value of the contents and information provided within the toolbox, as well as the effective performance of the interactive features of the toolbox. Though, some respondents pointed out that although the contents were valuable, the structure was not always clear, logical, and understandable to the user.

The component dedicated to User interactions showed lower scores as the respondents did not find it easy to access the sources provided in the tool and it has not been categorised and organised in an efficient manner. The Scope of the toolbox showed particularly low scores as a consequence of low comprehensiveness, attraction and motivation. In addition, although the respondents generally agreed on the fact that the toolbox is useful to policymakers involved in MSFD implementation, they found the toolbox ineffective for this target group, as a consequence of the way the features are presented. In fact, only one respondent agreed that the target of the tool is well defined and clearly explained to the user.

Finally, the component with the lowest score was the Support, since currently there is no supporting material (e.g. guidelines, user manual or examples of application) available.

Many participants emphasised the need to popularise the toolbox and introduce training sessions or modules within it that can help self-learning.

Important comments and suggestions provided by the respondents are summarized in Table 7.

Table 7: Comments and suggestions provided by the participants in the experimentations.

Group	Component	Comments	Suggestions
1	appearance	Make the menu on the right more intuitive.	For example, showing the key activities within each step through a drop-down list.
1	appearance	Resources have a lot of information that it is not necessary for the policymakers such as the number of the deliverable or the information about the work-package that has produced the information, assessments or results in question.	Clean the titles and the unnecessary information particularly on the regional models and assessments.
1	appearance	In general it has a very scientific appearance.	Do not include so many references and literature. Make the appearance simpler and more attractive.
1	content	The activities should be clearer. It should be more intuitive to go from a step to the respective key actions in order to accomplish the step in question.	In the main menu in the right, make drop-down list with the respective key activities.
1	content	It is not necessary to know about the different types of resources whether they have been developed within Perseus or not.	Include all the resources within each key activity without distinction among types of resources.
1	content	When to arrive to the webpage it is difficult to identify the key information such as the objective, structure and potential users of the toolbox.	In the main page include briefly the information on "What", "Why", "How" and "Whom".
1	content	Examples are not examples of the application of the toolbox, it is misleading.	Actual examples should be within resources as further readings for example readings. And examples where the toolbox is applied should be included in the examples section.
2	content	Legal inventory for the Black Sea is a useful tool not encountered before.	The toolbox and its resources should be popularised among decision-makers.
2	content	Institutional inventory is redundant; and the inventory of measures repeats numerous similar exercises in EU marine related projects.	An added value for these databases would be to have links to sources of data that might assist decision makers in forming policies.
2	content	Some standard references necessary for taking decisions (e.g. on fisheries) are missing.	Need to include more links to reference literature on commercial fisheries.
2	content	The risk analysis (consequence x likelihood matrix) does not take into account possible thresholds in the development of non-linear process.	In Step 1, in addition to the risk matrix, an impact diagram could be useful for policymakers.

Group	Component	Comments	Suggestions
2	content	The multiple levels within the resources section confuse users and make it difficult to find the necessary information.	Improve the structure of the toolbox
1	other	The toolbox has a very high potential, though it is difficult to find it.	It should be more promoted and given higher prominence in the PERSEUS webpage, maybe in a separate webpage.
1	scope	Make clear that there is no need to follow the whole cycle or the 5 steps.	Make an initial statement where you indicate that a step should be selected.
1	scope	Make it catchier and simpler	In the main page include an statement like "Design your adaptive policies is 3 phases: select your step, key activities and resources!"
1	scope	It is not clear nor intuitive the structure of the levels of the toolbox	In the first page explain the 3 levels of information and show a clear navigation path starting from the steps, through the key activities and up to the resources and examples.
1	scope	There is too much text within the main panel of the left.	Within each step, key activity or resource leave only the heading of the section and show only the whole text when you click on the heading. For example, for a given key action, in the left panel, show only the headings that say "Introduction", "Key questions", "Key actions" and "Resources"; and show the text when you make a click in the respective heading or like a new tab or link.
1	scope	It is difficult to visualize the results or outputs of the toolbox.	Some examples should be included in order to see what type of output could be obtained from the toolbox.
2	scope	The adoption of adaptive management is a very positive approach for introducing good practices to the authorities responsible for the marine environment.	The toolbox should be presented to a wider group of stakeholders.
2	scope	The methodology has not been sufficiently adapted to the requirements of marine policy.	The application of toolbox should reflect the interconnectedness of issues (e.g. state of fisheries (turbot) and bottom integrity).
2	scope	It is easy to lose track of the activities that have to be completed for the design of a policy.	A checklist approach is suggested for streamlining decision-making for officials working in the public administration.
1	technical	The knowledge base is one of the most valuable things and it is not easy to found.	Resources and particularly databases should be more accessible.
1	technical	There is no way to make a question or comment unless you fill the questionnaire.	A direct contact to make specific questions and comments should be included.
1	usability	It is easy to get lost and know which steps you have followed to	Include a line with the steps you have followed to reach to the actual

Group	Component	Comments	Suggestions
		reach the actual page.	page on the top of the page.
2	usability	A general impression is that the navigation is not user-friendly and there are breaks in the logical consequence of steps, particularly when the user has to jump between a policy step and resources related to it.	The navigation of the site should be improved and made more transparent.
2	support	Apart from the questionnaire, there is no direct link to the administrator such as an e-mail of contact or a feedback field.	There should be a link or a way of contact apart from the questionnaire to make any query or different suggestions.

3.5. AMP experimentations in the Northern Adriatic Pilot Case

3.5.1. Introduction

Testing exercise is aimed at verifying the capacity of the AMP Toolbox to support the development of robust and coherent adaptive policies designed for overcoming situations at risk of non-achievement the GES during the 2020-2030 horizon, through a participative approach involving regional stakeholders and relevant experts.

In this context, within the North Adriatic sea Pilot Case this exercise is being implemented through two main activities: 1) face to face interviews with relevant experts in the field of marine sciences; 2) focus groups with local stakeholders from the three countries of the North Adriatic sea case study area (Italy, Slovenia and Croatia). These focus group will be organized in the form of role-playing game (RPG) including an adequate number of stakeholders involved in implementing the MSFD and developing adaptive policies within marine areas, focusing on topic related to their background in order to get their active and motivated involvement.

Until now, the activities for testing the toolbox by means of focus group with local stakeholders are in the planning stage, scheduled for the beginning of 2015. However, interviews with experts have been concluded providing valuable feedbacks and suggestions for improving and simplify the understanding and use of the AMP Toolbox by potential end-users. The main objective of this report is to present the methodological approach and main results obtained by this first activity carried out in Italy for testing the AMP Toolbox, underlining emerged comments and recommendations.

3.5.2. Workshop with research staff

- **Selection of participants**

As far as 'face to face interview' is concerned we selected a reduced number (2) of experts from the Ca' Foscari University of Venice in order to present them the AMP Toolbox functionalities. During the presentation a realistic situation (Saronikos Bay) [1] has been used in order to illustrate the functionalities and potential uses of the toolbox. More details about the case study are presented in Appendix VI.

Participants were selected according to their knowledge about the PERSEUS project and their previous involvement in the implementation of the MSFD objectives in the North Adriatic sea Pilot Case (Table 6).

[1] The case study had been developed by members of the team CMCC on the basis of data and information provided by colleagues from HCMR.

Table 8: List of the -face to face interview- participants.

Name	Job Title	Organization	Experience
Roberto Pastres	Associate professor	University Ca' Foscari of Venice	MEDINA project,
Stefano Soriani	Associate professor	University Ca' Foscari of Venice	PEGASO project

- **Conducting the workshop**

The interview took place on the 26th November 2014 at the premises of the University Ca' Foscari of Venice (Venice, Italy) from 15:45 to 17:15. Each participant was equipped with a laptop in order to provide direct access to the toolbox available tools in the AMP Toolbox for each step of the AMP. Moreover, a paper copy of the evaluation questionnaire was provided to them at the end of the interview.

The interview was divided into three main steps:

1) Presentation of the AMP and related AMP Toolbox (30 minutes)

This first step was carried out by the facilitator, where a general overview of the AMP Toolbox was provided together with information about general structure of the AMP in order to better explain contents and scope of the toolbox.

2) Presentation of tools and methods supporting adaptive policy making in marine areas (30 minutes).

Following the iterative steps of the AMP some tools and methods, previously selected from the AMP Toolbox as relevant for the considered case study (Saronikos Bay), have been presented underling how they can support decision makers in draw up marine environmental policies. Participants were also allowed to comment and interact regarding specific issues that they found during the presentation.

3) **Evaluation of the AMP Toolbox** (30 minutes).

In this last step a common discussion was conducted between participants and facilitators in order to collect their feedback and suggestions about the AMP Toolbox.

- **Main results from the workshop**

The facilitator of the session compiled the comments and suggestions of all participants by taking notes through the interview. Main comments and suggestions were summarized in five thematic areas (i.e. scope, content, technical, usability and general remarks) and are presented in Table 9. Further analysis and integration with other Pilot Case will be performed by the coordination team of Task 6.4 for Deliverable 6.13.

Table 9: Comments obtained from Workshop.

Component	Comments	Suggestions
scope	Scope of toolbox is clear and tools and methods collected are well linked with the steps of the AMP which follows the step-by-step structure of the project cycle reinforced with the concept of adaptive planning and management.	
	Using the term toolbox may cause some confusion. First idea about a toolbox is some kind of decision support system that allows potential end-user to use specific datasets from the toolbox, focused on a specific case study, for getting a response/measure.	
content	The focus on potential end-users (policy makers, scientists, technician). Some tools require high expertise, while others can be used by any end-user acquainted with policy making. The high level of expertise requested by some tools could represent a critical issue.	
	The AMP Toolbox is not aimed at providing environmental dataset to support the analysis of a specific issue/case study. However, tools can support SHs and decision makers in adaptive policy making, provided that dataset are already available.	Provide link to relevant dataset about natural and human-made pressures in marine areas (e.g. time series, spatial data, numerical model, data from survey and monitoring programme) able to support a screening analysis of interactions and synergies between the different components of the marine ecosystem.
	Toolbox includes heterogeneous tools (e.g. DSS, GIS tools, frameworks and methodological approaches) and for a potential end user can be hard to select the best tool for a specific AMP step.	
technical	Some terminologies used within the AMP Toolbox can be interpreted in very different ways according to the scientific background of the end-user. For instance, inventory of measures could be interpreted as a collection of data from survey or monitoring (measurement) programme.	Terminologies used within the AMP Toolbox should be detailed in a glossary aimed at explaining meaning and avoiding misinterpretation.
usability	For a typical end-user it might be difficult to select a tool rather than another within a specific step of the AMP.	
general remarks	Several toolboxes have already been implemented within other European projects (e.g. PEGASO); unfortunately, at the end of the project very few of them are maintained / available for further end-users.	Plan long-term sustainability and availability (web based) of AMP Toolbox.
	Reinforce the concept of 'adaptive policy making' (loop of the AMP –policy cycle) with the use 'dynamic models' able to implement updated observations and thus to improve the 'predictive capacity' of models and, finally, reducing uncertainty related with future projections.	

4. The High Policy Level AMP experimentation with the Black Sea Commission

4.1. Introduction

The main objective of this section is to present the activities carried out during the International Black Sea Day meeting (Istanbul 3rd November 2014) for testing the AMP Toolbox with high level decision-makers in order to get their feedback and suggestions for further developments. The International Black Sea Day meeting took place in Istanbul on the 3rd November 2014 to commemorate the 20th Anniversary since ratification of the Convention on the Protection of the Black Sea Against Pollution (Bucharest Convention) in 1994 and its Protocols. Bucharest Convention has been signed and ratified by all six legislative assemblies of the Black Sea countries (i.e. Bulgaria, Georgia, Romania, Russian Federation, Turkey and Ukraine). It includes the basic framework of agreement and three specific Protocols:

(1) The control of land-based sources of pollution;

(2) Dumping of waste; and

(3) Joint action in the case of accidents (such as oil spills).

For the purposes of AMP testing two main activities were planned: 1) A presentation of PERSEUS research activities and 2) a hands-on demonstration and deliberation with the Black Sea Commissioners and guests.

4.2. Organization of the experimentation

The Permanent Secretariat of the Bucharest Convention organized the International Black Sea Day meeting at the premises of Point Hotel Taxim. The fifty-five participants included the six Black Sea Commissioners, the BSC PS Executive Director, the General Secretariat, national representatives, observers and guests (see Appendix IV). PERSEUS project was represented by a team of eight scientists who actively helped in the discussion that followed and assisted the delegations to express their opinion on the feedback questionnaire that has been especially developed for this reason.

The Coordinator, Dr. Vangelis Papathanassiou, presented the scope of the PERSEUS Project during the early afternoon to the 13 high-level officials from the Black Sea countries and about 25 guests and observers. EMBLAS, MISIS and IRIS-SES project were also presented. After the project presentations, PERSEUS had a 2,5-hour workshop with the delegations, guest and observers on the Adaptive Marine Policy Toolbox. Prof. Michalis Skourtos made the on-line presentation of the AMP-Toolbox together with Mrs. Emily Koulouvaris. Prof Skourtos was also the facilitator of the lively and interactive discussion with the Commissioners and guests.

The meeting was a first real trial of the experimentations that PERSEUS has planned in the high level Policy makers.

The workshop was divided into four main steps:

1) A Power Point Presentation (10 minutes) to **document the AMP Toolbox necessity** to assist policy makers and its potential use (Appendix V). Interesting subjects for discussion were also introduced concerning how science can support policy making and at what level this support could take place. This was carried out by the facilitator.

2) **Presentation of the AMP Toolbox** (30 minutes), carried out by the facilitator, where a general overview of the AMP Toolbox was provided. The 5 steps of policy making were explained, the notion of adaptive policy was recognized, the AMP Toolbox general structure was explained, specific tools were visited and its use was shown. Finally information about the resource base and its use was given together with explanations on how specific problems could be addressed by its use.

3) **Hands-on with the AMP Toolbox / experimentation** (60 minutes), where each participant was asked to explore the different sections of the toolbox (having in mind one specific policy issue of their choice), and take notes in the provided template for further discussion. Participants were encouraged to comment and interact regarding specific issues concerning policy making/AMP relevance etc. A fruitful discussion took place raising several comments and suggestions from the part of participants.

4) **Evaluation of the tool** (30 minutes). One or two representatives from each Delegation were interviewed by PERSEUS WP6 scientists. The evaluation of the AMP Toolbox was implemented by filling the questionnaire either online, or on the available hard copy. Quantitative results of these interviews can be found on the 5th Section of this report.

Concerning the experimentation phase which lasted for 60 minutes: Our methodological strategy was to position the participants in a situation where they could envisage a specific marine issue **with and without the AMP**. Participants were encouraged to propose a marine issue for discussion that they consider to be of outmost importance for promoting a healthy Black Sea environment. We anticipated that this would be either fisheries (i.e. anchovy) or invasive species (i.e. Mnemiopsis leidyi). This issue was then used as a 'benchmark' for our comparative analysis. The discussion that followed was targeted to explore what would have been different had the state officials in their disposal the AMP. Or, alternatively, what would be different for future policy support and design now that AMP is available.

The session was structured as a round table (Figure 7): The facilitator welcomed the participants and briefly introduced AMP. The introduction followed the sequence of the five policy steps pinpointing key aspects. Then participants were prompted to suggest a marine issue at risk for the Black Sea environment that they consider of special importance. Participants were then invited to take a 'tour' through AMP having in mind the marine issue(s) we agreed upon. The facilitator urged them to think the problem in terms of the AMP: would the availability of such a tool had helped them in the past to address the issue? Will it help in the future? In what sense would AMP be useful (by providing information, structuring the

problem, showing solutions, providing access to tools and databases, alerting about data gaps, public deliberation, expert involvement, etc.)?

PERSEUS scientists, acting as supporters to the facilitator, took notes having in mind the basic questions of the evaluation protocol. As the end of the discussion each participant was asked to fill the evaluation protocol. At the end of the session, PERSEUS scientists discussed the procedure and crosschecked their notes.

Figure 7. Workshop room with participants.

4.3. Main outcomes of the workshop

The PERSEUS scientists attending the workshop compiled the comments and suggestions of all participants by taking notes throughout the session and by assisting the completion of the online questionnaires (Figure 8). We present in this section the main topics discussed and give a first assessment of their relative weight for the AMP toolbox. Further quantitative analysis and integration with other Pilot Case data is presented in section 5.

A first, general remark pointed to the fact that the AMP toolbox is not meant to be "something that opens the door for ready-made solutions; it's rather something that helps you digest the problems…. it is not a single tool, one should analyze/explore what specific tools are available already." A much sought after information referred to examples or cases of best practices.

‘AMP seems a very good tool for policy makers to be informed about best practices concerning Adaptive Policies ‘

‘AMP looks like it could work better in established procedures. Some policy making cases are very clear, you only need to go on with AMP Toolbox ‘

‘Does AMP includes a method to assess policy making? Is there enough data? How do you find the relevant coefficients? After all there might be bad politicians, not bad policies.’

‘In order to follow the different futures described by the potential of AMP Toolbox there should also be legal and institutional conditions. If you change the rules and institutional structures there might be a contradiction ‘

‘This is just a Toolbox. It depends on the policy maker/ planner how to use it. It resembles the way you use a Tool: screw or unscrew something. This Toolbox is meant to facilitate the whole process of policy making ‘

‘We’ll inform immediately the Regional Directorate for this Toolbox. We have enough Regulations in our country, now we only need to act! ‘

‘The Resources part of this Toolbox seems to be the best case ‘

‘Policy makers need to understand: what kind of data is needed? Maybe there is a need of a list of things which policy makers need to take into consideration for each problem (e.g. in the case of chemical pollution). ‘

‘On the scope section: AMP Toolbox seems extremely useful for policy makers who want practical information and data bases, but before decision making (e.g. for fisheries) in a multinational decision context, you need to check the legal documents used by different countries. So a decision maker needs more info on legal matters, more clarifications and best examples. ‘

‘You would improve the AMP Toolbox by putting some contact points, e.g. experts or policy makers, who are in a position to give more info on a specific problem ‘

Referring to the *scope* of AMP Toolbox participants suggested that the tool could be highly useful for a broad audience and particularly for policymakers. However, they mentioned that its usefulness for other audiences and general stakeholders is something they need more time to address and evaluate. They indicated that the tool should be oriented not primarily to national level because most of environmental problems are trans-national. For example, they mentioned the issue of fishing quotas: although they are set in Black Sea, there are some countries that are not complying with them. Real addresses of the toolbox should be experts of an intermediate level, which may need to have a look into solutions adopted in other countries. Accordingly, the importance of examples was underlined. On the other hand, three participants commented that AMP couldn’t be described as toolbox – rather a database, a library or a dictionary. In addition, although the respondents generally agreed on the fact that the toolbox is useful to policy-makers involved in MSFD implementation, they found the toolbox ineffective for this target group, as a consequence of the way the features are presented. Low comprehensiveness, low motivation were also mentioned together with not clear structure.

Referring to the *content* of the AMP, a participant asked for incorporating further information in the knowledge base that he thought was missing. He also suggested that the current structure is not obvious to the user hiding its potential. More examples are needed explaining better how someone could use the tool.

Referring to the ability of AMP to accommodate *user interactions* in a friendly and understandable way most participants expressed a critical view emphasizing that it could had been categorized and organized in a more efficient manner. This might have been the result of a time intensive and, unavoidably, rapid journey through the layers of information available in AMP, which did not allow the participants get a full grips of its structure. Nevertheless, it was noted that user friendliness might differ from person to person because of the different background of the user.

Referring to the *Support* provided by the AMP to the user, again the participants stressed the lack of contact information or support form at the current version of the tool. It could be useful to address more clearly the purpose of the AMP and include some general guidelines to explain what the user is going to found in the toolbox in order to understand better its contents. They asked for a more

functional way to provide for search within the tool and suggestions, e.g. a button for support.

In addition to the specific remarks on the AMP Toolbox, participants suggested ways to improve its functionality and user friendliness. More than one suggestion were concerned with adding support material (guidance, roadmap of the site, suggestions form) whereby the provision of practical, fully policy relevant examples was strongly and repeatedly emphasized. Other concrete actions suggested were:

- Create a video tutorial showing how to use the tool with one example.
- Breakdown a current policy into the different steps in order to illustrate the steps.
- If addressing policy makers (highest level) much shorter texts (executive summary) would be needed

Although the content was rated as very useful, it was suggested to link the AMP Toolbox to Google in order to supplement its potential of resource search and recommendations. Nevertheless, the proposal by three participants to create a section in the AMP where the policymaker ask about an environmental issue/problem and the toolbox provides an answer, reveals the necessity to better explain at the forefront the intended role and function of the AMP. Last but not least, most of the suggestions culminated to the need of providing support material and assistance (or as one participant put it: small technical projects on national level) to facilitate acquaintance and familiarity with AMP.

Figure 8. Discussion about the AMP Toolbox.

5. Survey results

The experimentation process of AMP gave three kinds of information:

a. a **qualitative assessment** in the form of comments and general discussion (described in the previous sections of this report)

b. a **quantitative assessment** supported by an on-line, structured questionnaire. This functioned as a common protocol on which the AMP Toolbox evaluation was based.

c. **recommendations and suggestions** (further qualitative data) through an open questions session (included also in the evaluation protocol to further encourage participants in providing their comments and suggestions regarding the different components of the AMP Toolbox). The full version of the online questionnaire is included in Appendix II of this report.

This on-line questionnaire was linked under a PERSEUS website section called FEEDBACK: http://www.perseus-net.eu/en/feedback/index.html

It contains 28 closed format questions trying to evaluate different components of the AMP Toolbox on a Likert five level scale:

AMP **Scope** (11 questions)

AMP **Content** (4 questions)

AMP **User interaction** (8 questions)

AMP **Technical aspects** (4 questions)

AMP **Technical support** (1 question)

These Likert scale based questions helped to assess different respondents' views towards the AMP Toolbox, The respondents' evaluation was based on a scale of five levels (from strong disagreement to strong agreement) regarding the different aspects of AMP.

Most of the questionnaires were filled immediately after completion of the in-depth interviews and the workshops. The PERSEUS WP6 team assisted the filling of questionnaire by the participants. Totally, 45 stakeholders completed the questionnaire for the assessment of the AMP Toolbox. Out of the 45 participants, 14 are policy makers and 31 are scientists.

The quantitative results from the analysis of the questionnaires are presented in this section. The analysis following below is done separately for each section of the questionnaire.

Scope

The first section of the questionnaire examined the fulfillment of the AMP Toolbox scope. The majority of the respondents (68%) agreed with the usefulness of the AMP Toolbox implying that the tool facilitates the effective implementation of the MSFD (Figure 9). Only a minority expressed a disagreement toward this assertion (9%) while 23% of them were unwilling either to agree or to disagree.

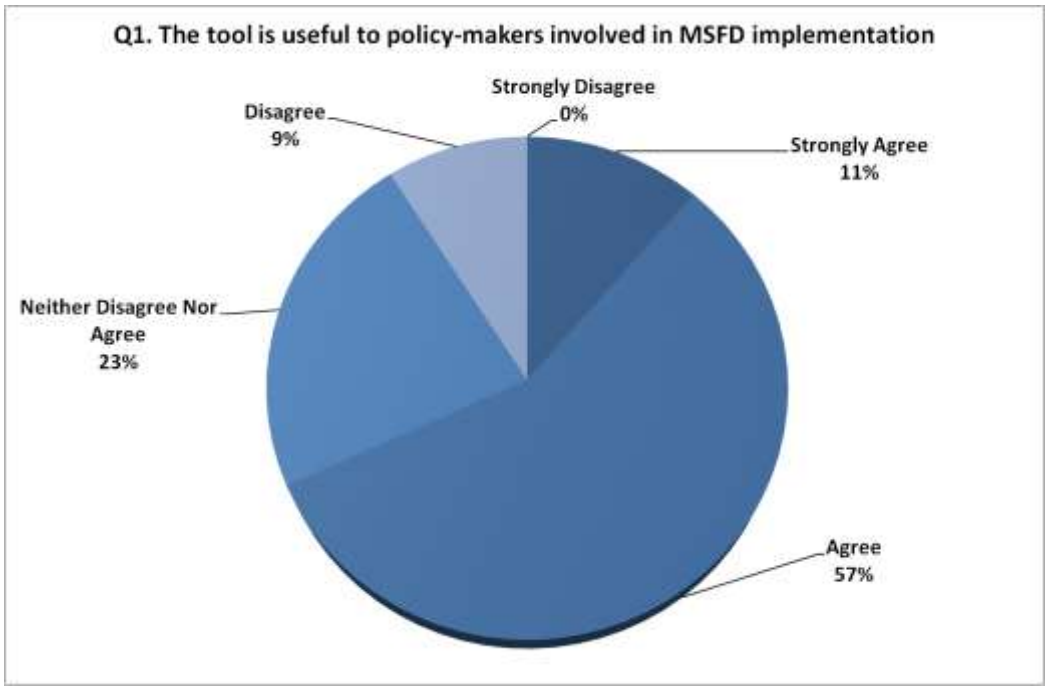

Figure 9: Answers to the assertion that the tool is useful to policy-makers involved in MSFD implementation.

More than half of the respondents (54%) stated that the AMP Toolbox target can be considered as well defined and clearly explained (Figure 10). Nevertheless, 23% of the sample disagreed, while the rest of the participants (23%) neither agreed nor disagreed.

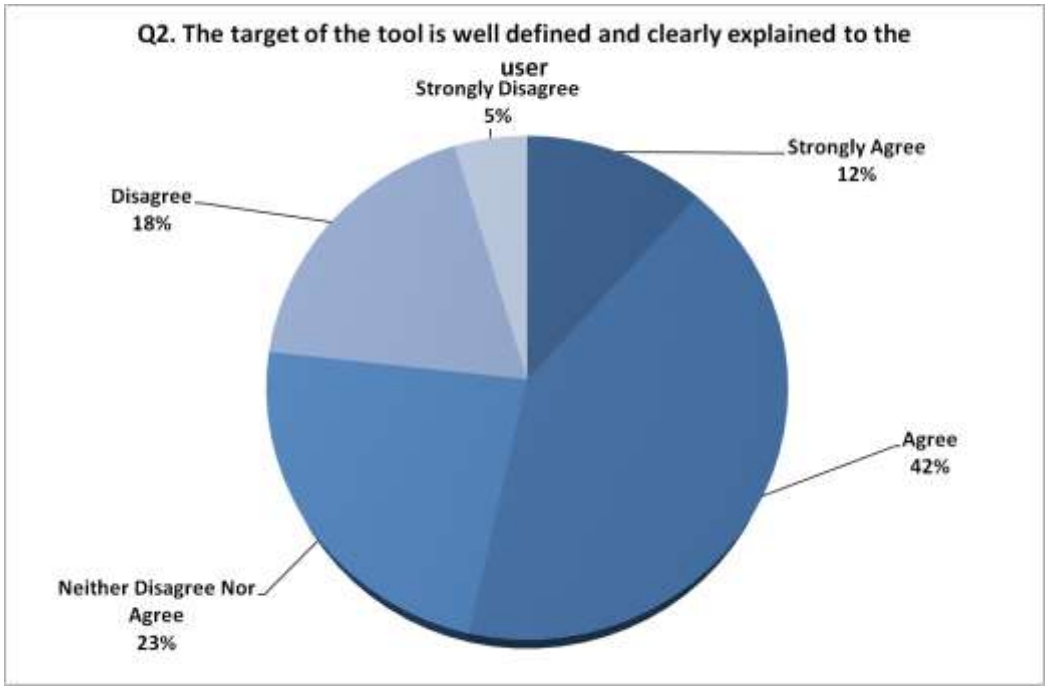

Figure 10: Answers to the assertion that the target of the tool is well defined and clearly explained to the user.

More than half (59%) of the respondents supported the conclusion that AMP Toolbox contains adequate information referring to its inputs (Figure 11).

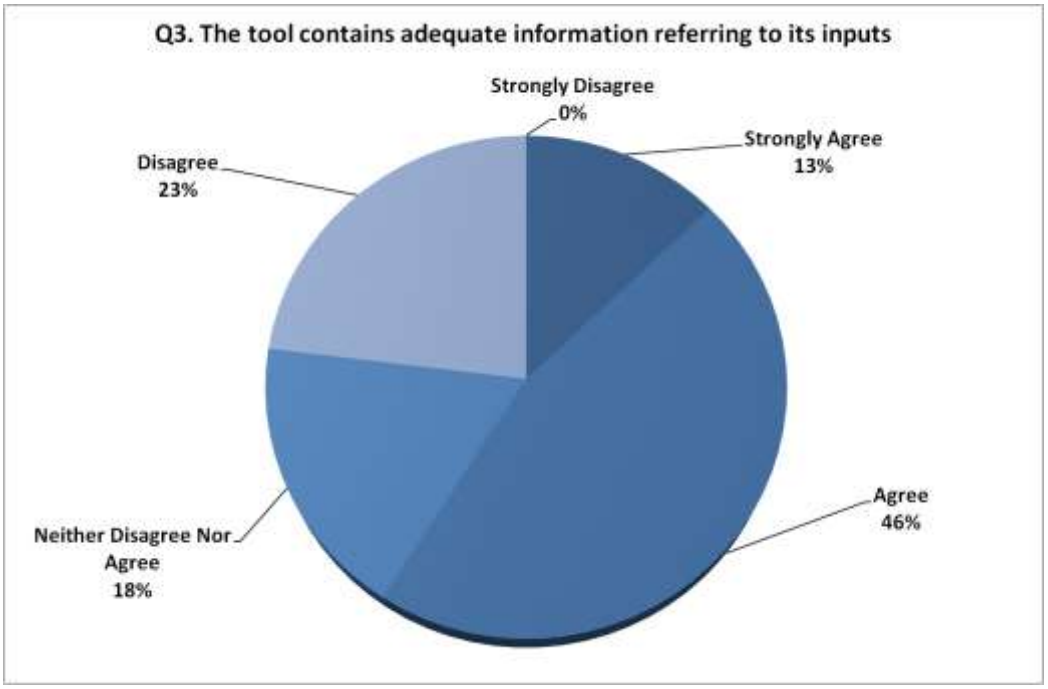

Figure 11: Answers to the assertion that the tool contains adequate information referring to its inputs.

The effectiveness of the AMP Toolbox was assessed for different types of stakeholders including scientists, policy makers, policy makers with a strong scientific background and general stakeholders including users with different abilities and experiences. According to the results as presented in Figures 12-15 the AMP Toolbox appeared to be more effective for the case of policy makers with a strong scientific background (60% of the respondents agreed with this assertion). Another 33% of the sample believed that the AMP Toolbox is efficient for policy makers; 35% of the sample considers the AMP Toolbox appropriate for general stakeholders including users with different abilities and experiences; lastly, 42% of the sample thinks that AMP is a sufficient toolbox for scientists.

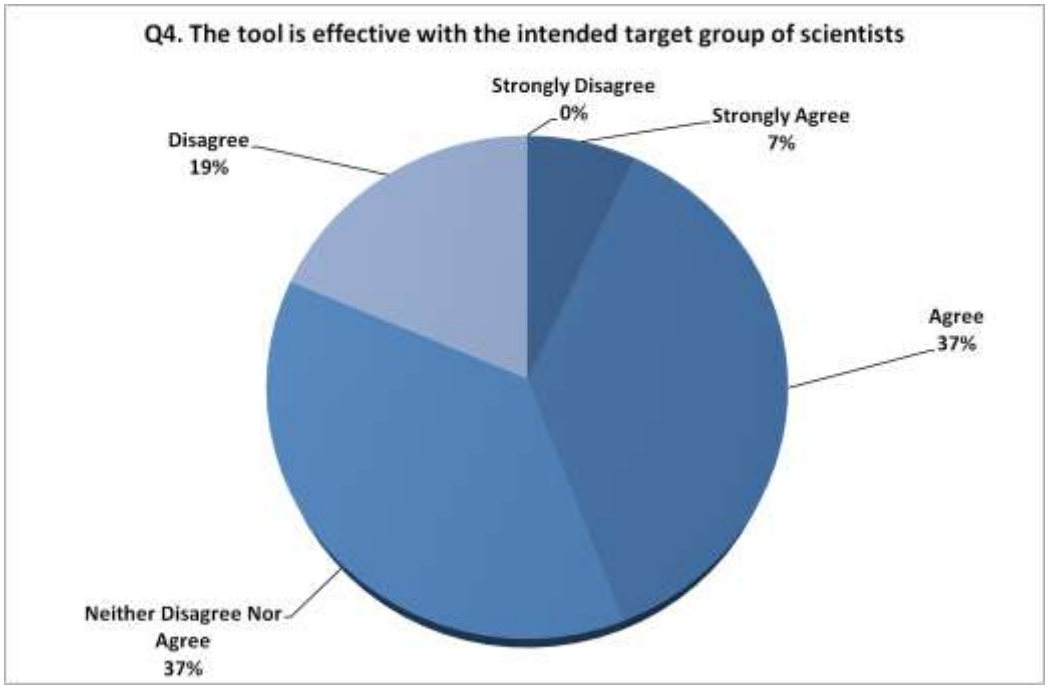

Figure 12: Answers to the assertion that the tool is effective with the intended target group of scientists.

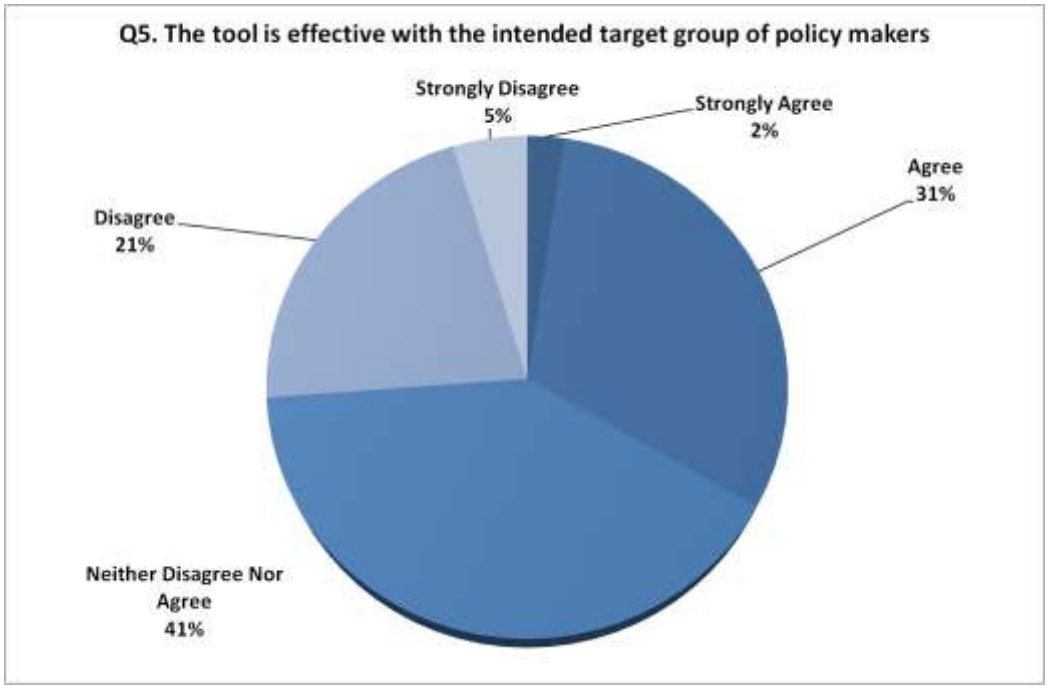

Figure 13: Answers to the assertion that the tool is effective with the intended target group of policy makers.

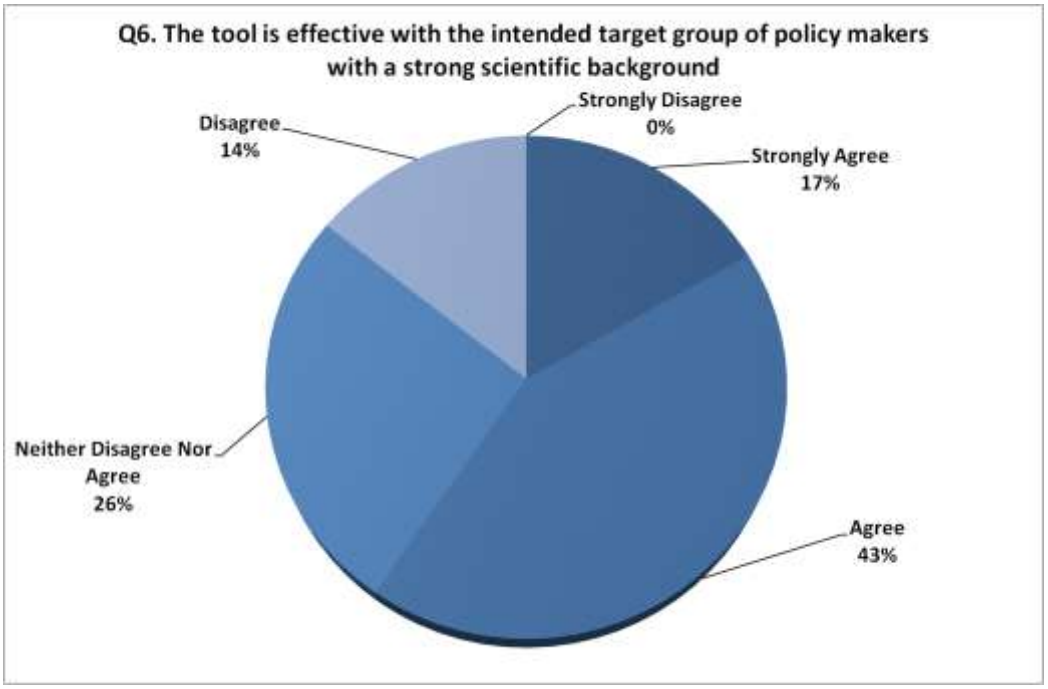

Figure 14: Answers to the assertion that the tool is effective with the intended target group of policy makers with a strong scientific background.

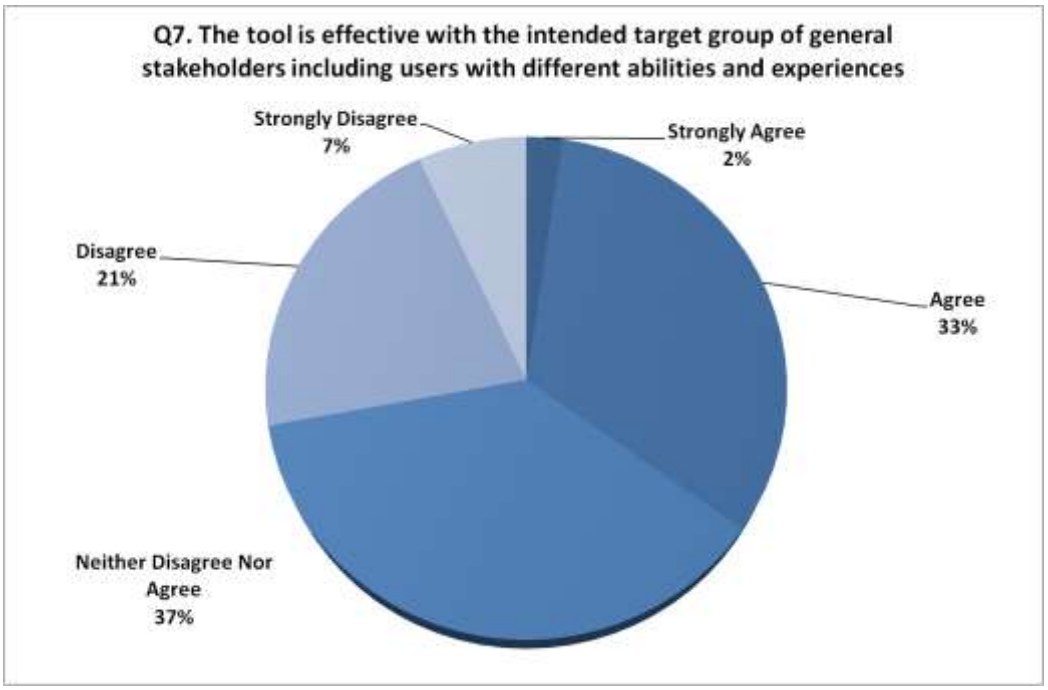

Figure 15: Answers to the assertion that the tool is effective with the intended target group of general stakeholders including users with different abilities and experiences.

Despite the fact that approximately half of the respondents appeared to agree that the AMP Toolbox could be characterized as comprehensive, 29% of them disagreed with the comprehensiveness of the AMP Toolbox, while 22% of them neither disagreed nor agreed (Figure 16).

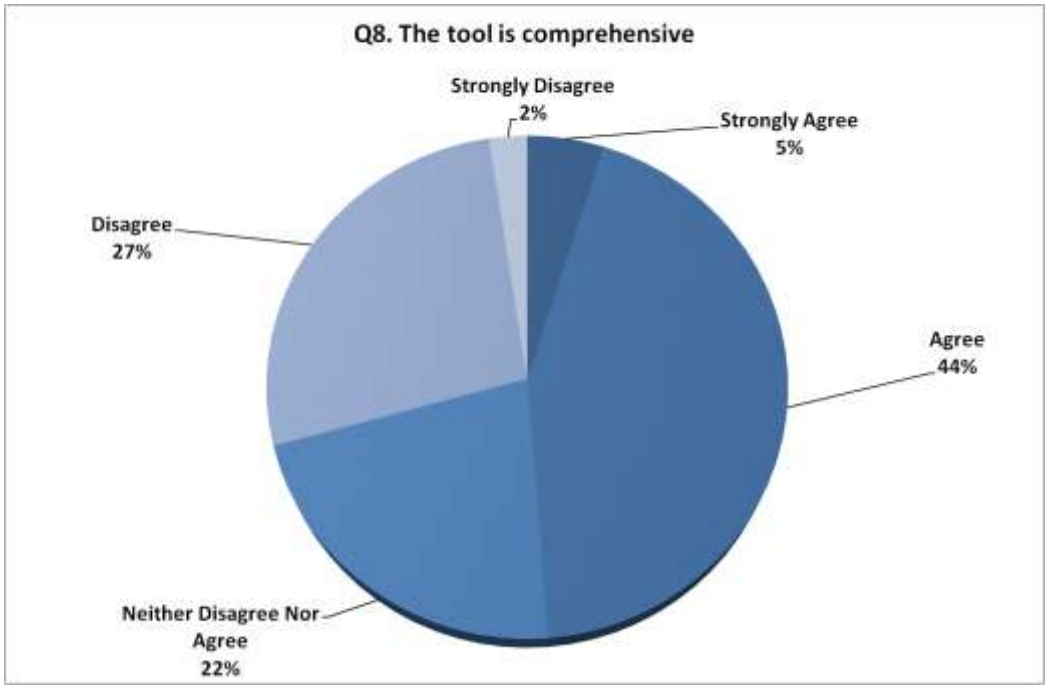

Figure 16: Answers to the assertion that the tool is comprehensive.

The same conclusion was confirmed during the evaluation of the attractiveness and the ability of the AMP Toolbox to motivate the user in order to utilize it (Figure 17). Specifically, only 41% of the respondents agreed while 40% of them disagreed, which is the highest percentage of disagreement within the performed evaluation procedure.

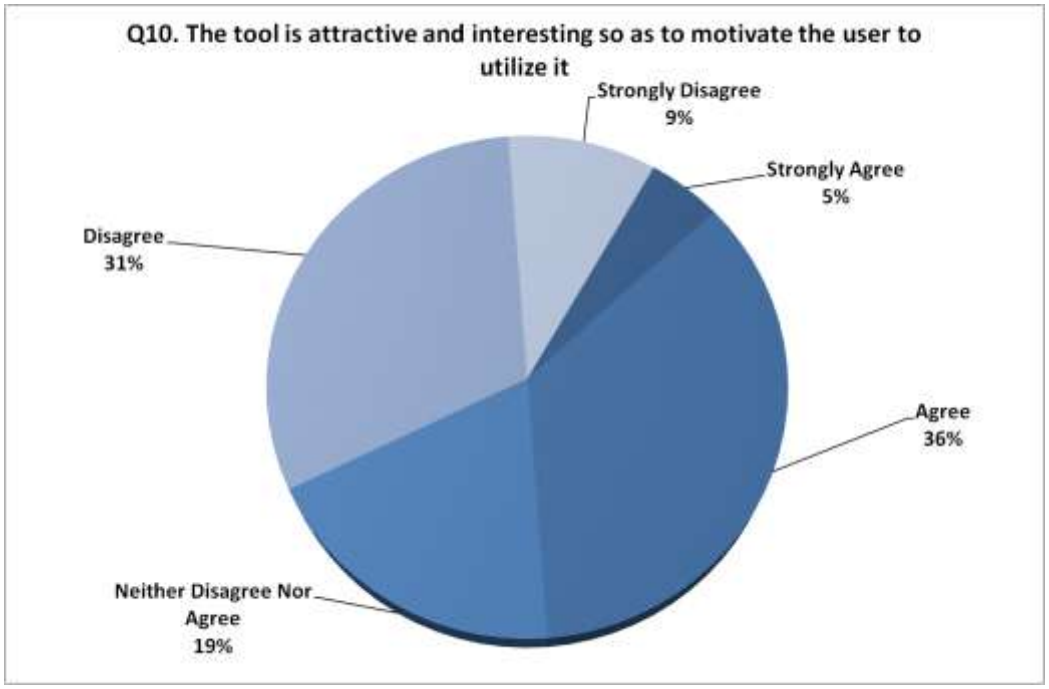

Figure 17: Answers to the assertion that the tool is attractive and interesting so as to motivate the user to utilize it.

Finally, 38% and 46% of the respondents neither agreed nor disagreed with the assertion that the AMP Toolbox performs its intended functions satisfactorily

(Figure 18) claiming that there are no other similar tools available in this area (Figure 19). Nevertheless, 39% and 46% of the sample supported the above assertions.

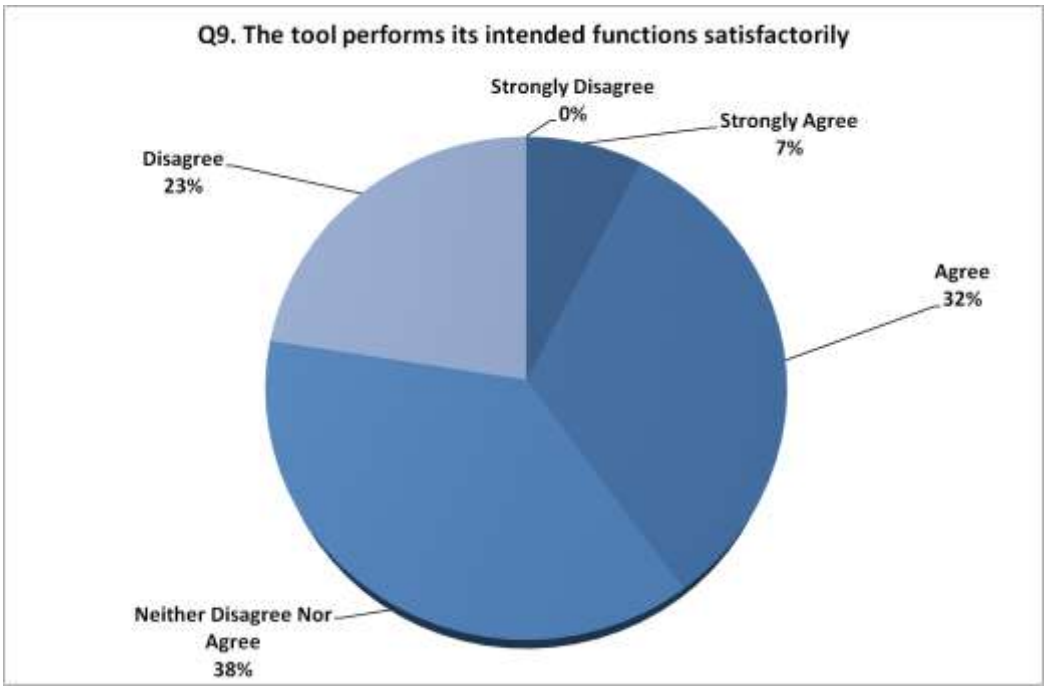

Figure 18: Answers to the assertion that the tool performs its intended functions satisfactorily.

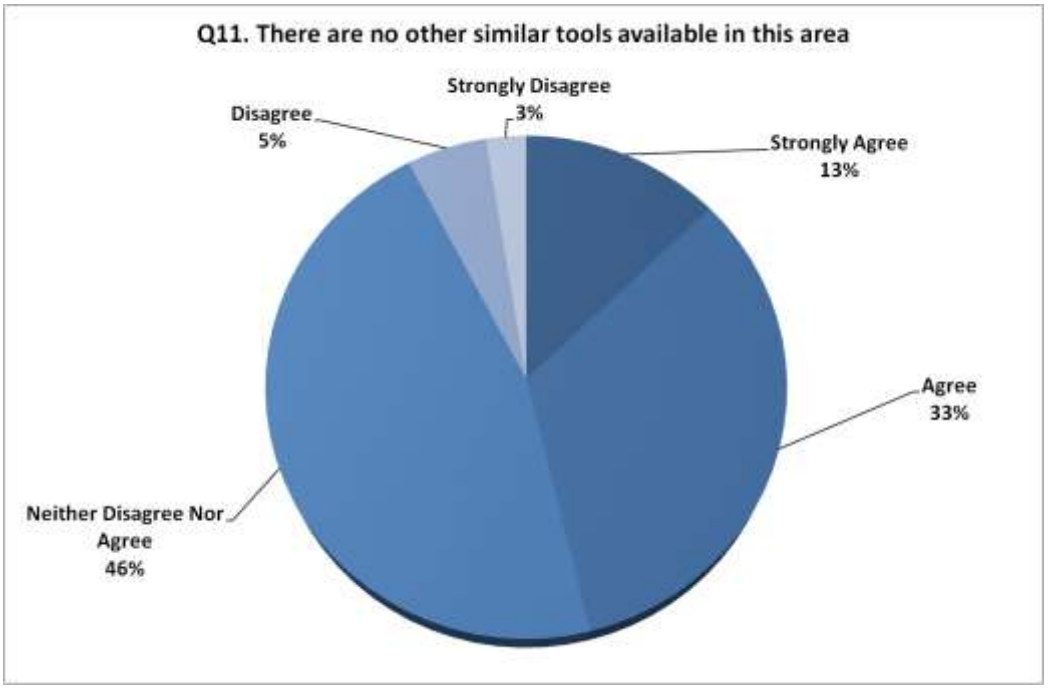

Figure 19: Answers to the assertion that there are no other similar tools available in this area.

Content

In the second section of the questionnaire the content of the AMP Toolbox was evaluated. The majority of the respondents (60%) agreed with the assertion that all important and policy-relevant issues are covered in a comprehensive manner (Figure 20). Nevertheless, 28% of them neither agreed nor disagreed, and only 12% disagreed.

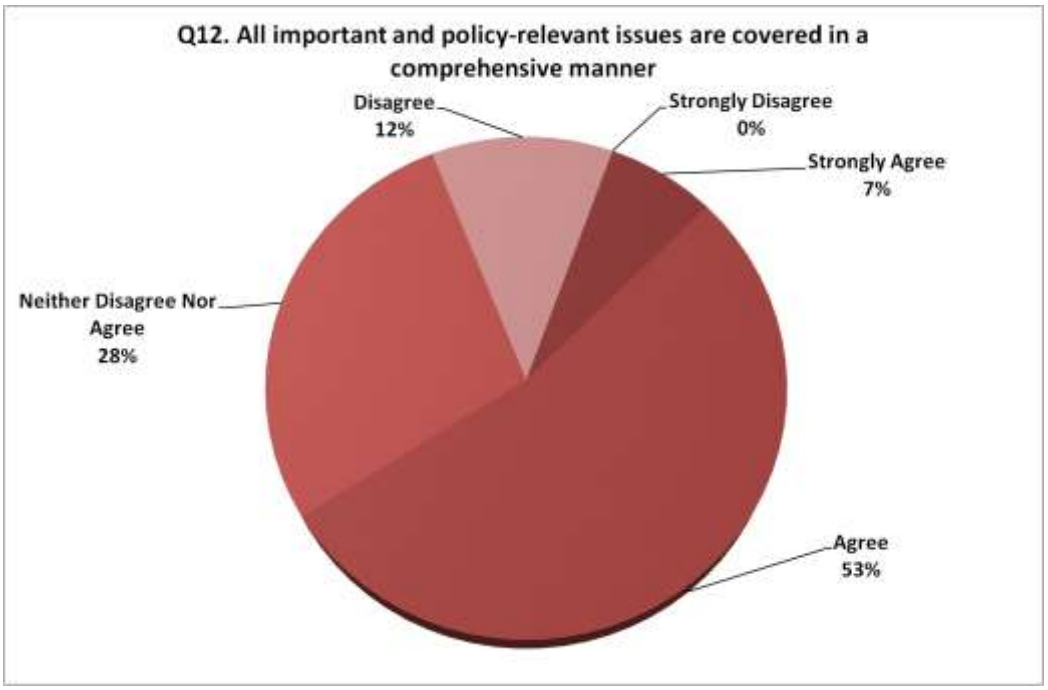

Figure 20: Answers to the assertion that all important and policy-relevant issues are covered in a comprehensive manner.

Towards this direction, 91% of the sample assessed the provided information as **valuable** fulfilling the main target of the AMP Toolbox (Figure 21). It should be mentioned that no one of the participants expressed disagreement toward this AMP component.

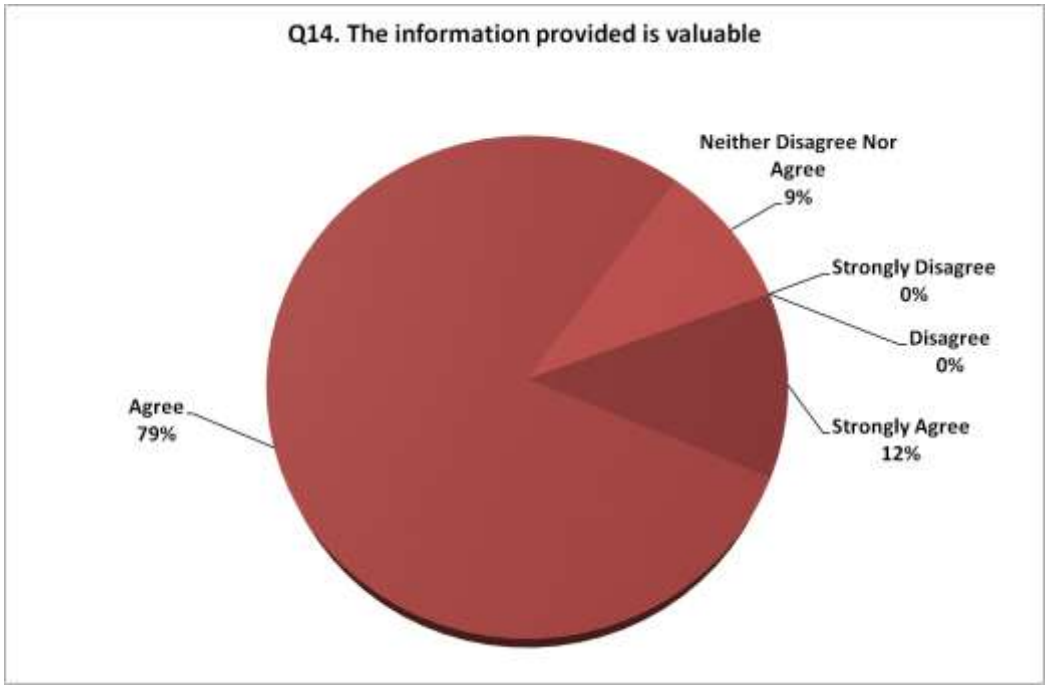

Figure 21: Answers to the assertion that the information provided is valuable.

Moreover, 28% of the respondents expressed the opinion that the provided information is not so clear, concise and well written and 25% reported that the structure of the AMP Toolbox is not clear, logical, and understandable to the user (Figures 22 and 23). These conclusions must be assessed in combination with the previously mentioned result that the AMP Toolbox seems to be not so comprehensive to the potential user. Nevertheless, 39% of the participants agreed with the first assertion and 47% with the second.

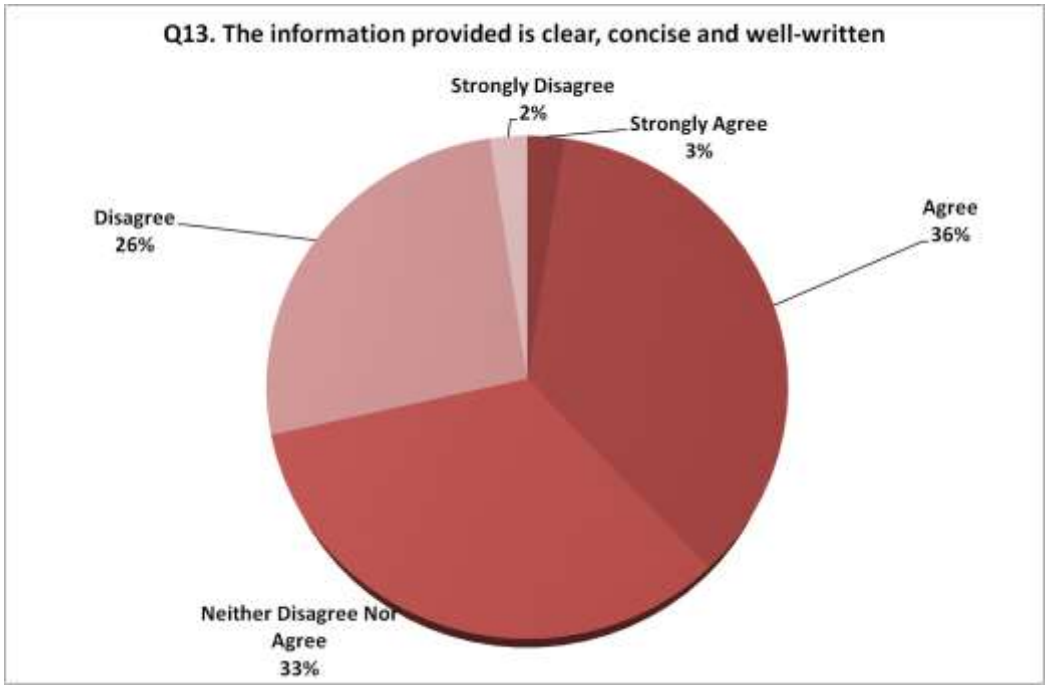

Figure 22: Answers to the assertion that the information provided is clear, concise and well-written.

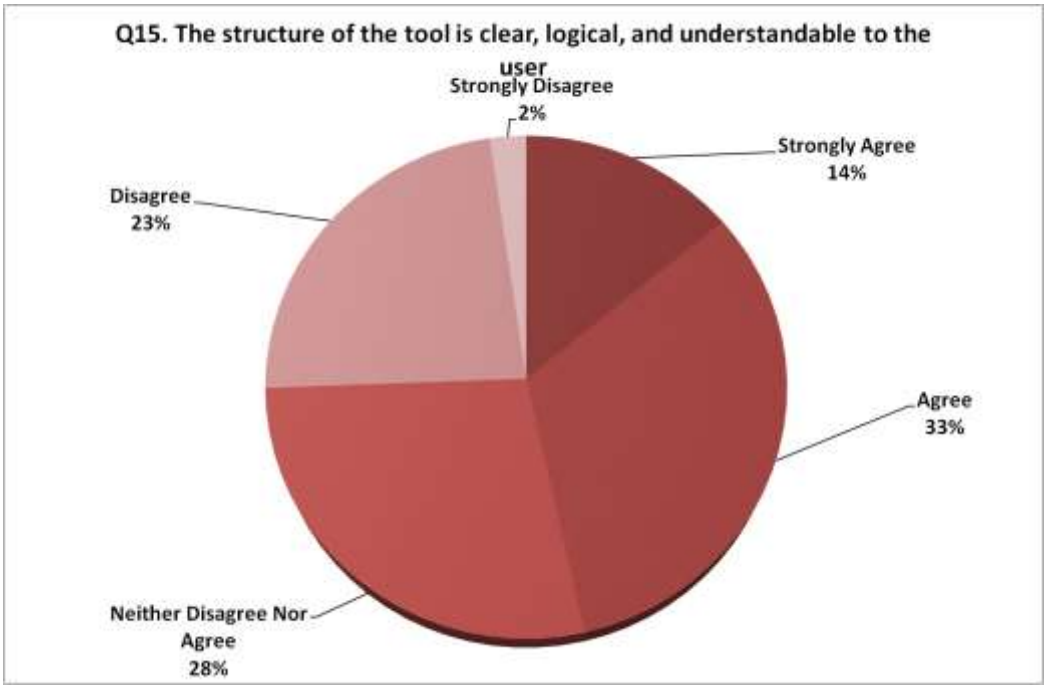

Figure 23: Answers to the assertion that the structure of the tool is clear, logical, and understandable to the user.

User interactions

Functionality of user interaction with the AMP Toolbox was then assessed. According to the results, almost half of the respondents (48%) agreed that the use of the AMP Toolbox functions can be characterized as easy (Figure 24). In contrast, 19% of the sample disagreed, while 33% neither disagreed nor agreed.

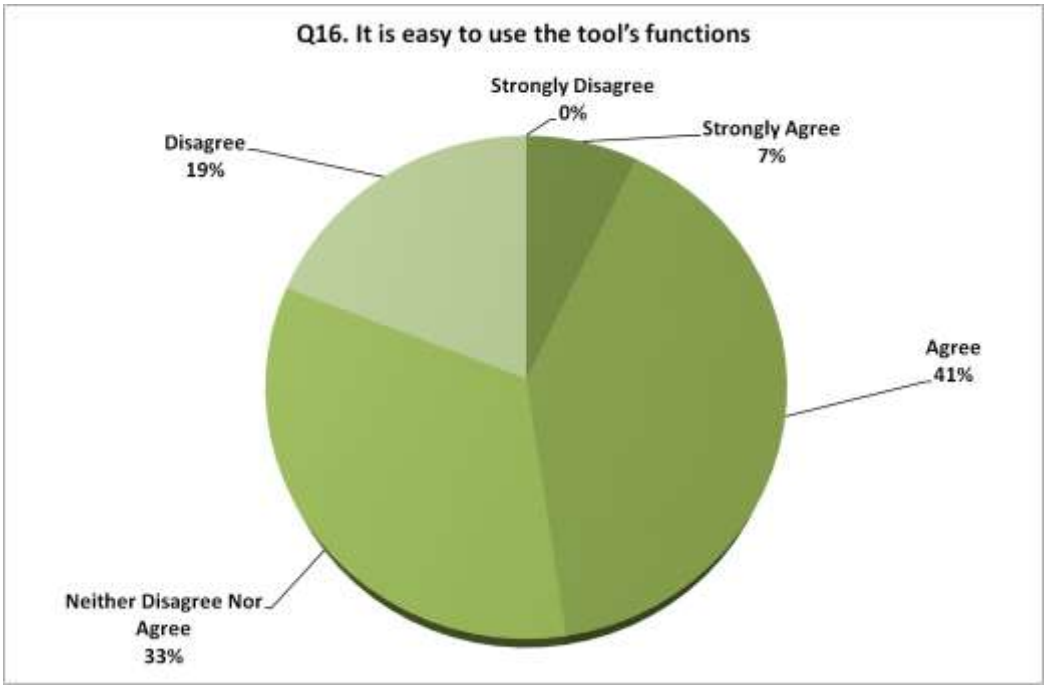

Figure 24: Answers to the assertion that it is easy to use the tool's functions.

A relatively high percentage of the respondents (27%) stated that the AMP Toolbox has not been categorized and organized in an efficient manner (Figure 25). Nevertheless, 41% of the sample highlighted the efficient structure of the AMP Toolbox, while 32% of the sample did not express either agreement or disagreement with this aspect.

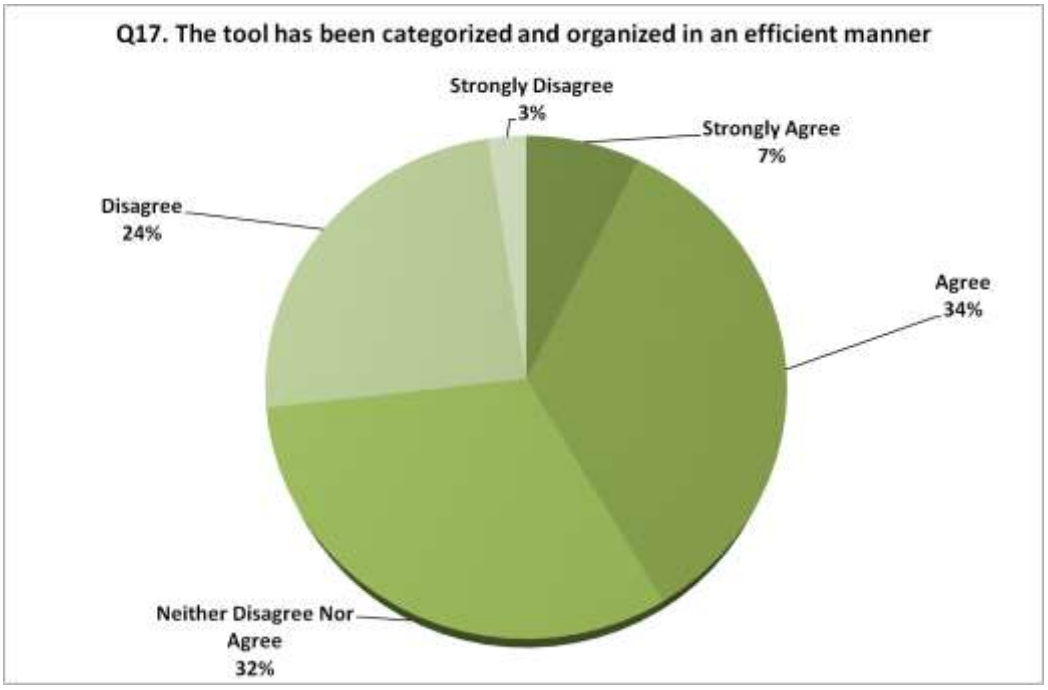

Figure 25: Answers to the assertion that the tool has been categorized and organized in an efficient manner.

Furthermore, as presented in Figures 26 and 27 the majority of the respondents stated that the user can easily access the sources provided in the AMP Toolbox (60% of the sample). An interesting aspect of user interactions highlighted is the choice of either going directly to the desired topic or use a structured approach to relevant topics (69% of the sample).

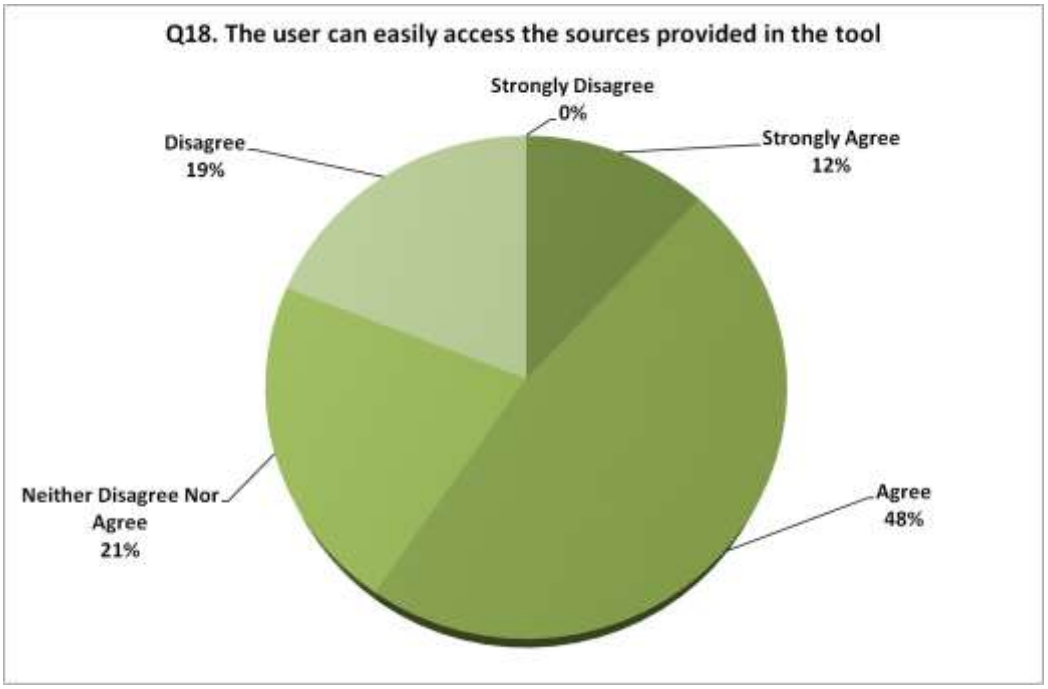

Figure 26: Answers to the assertion that the user can easily access the sources provided in the tool.

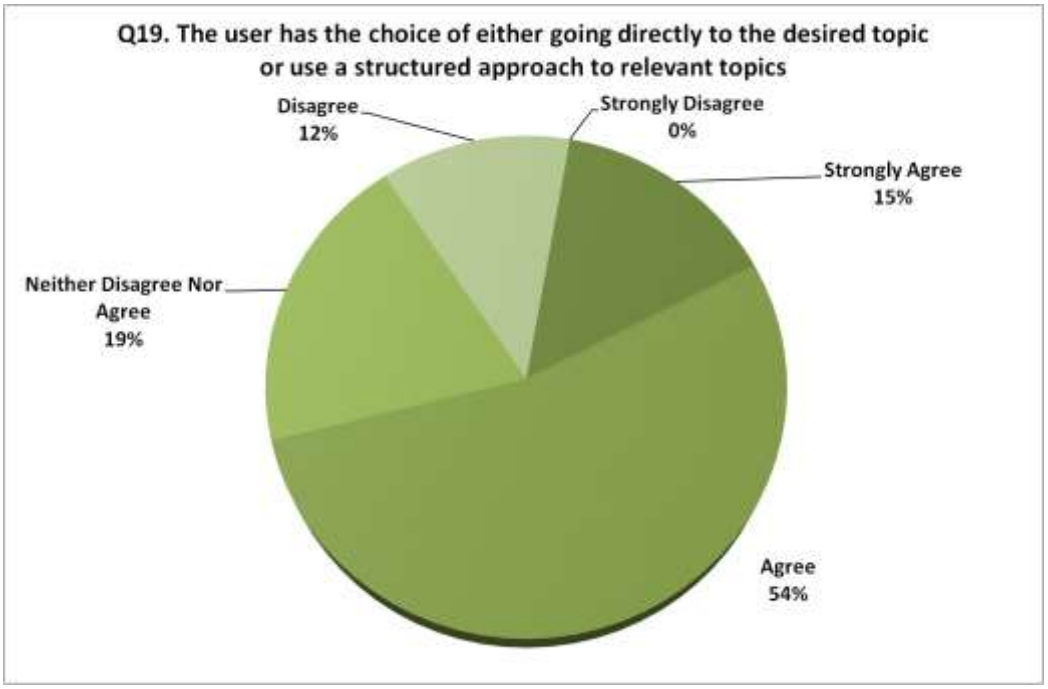

Figure 27: Answers to the assertion that the user has the choice of either going directly to the desired topic or uses a structured approach to relevant topics.

Almost half of the respondents stated that the navigational features of the AMP Toolbox are well constructed (Figure 28), while 17% disagreed and 31% neither disagreed nor agreed.

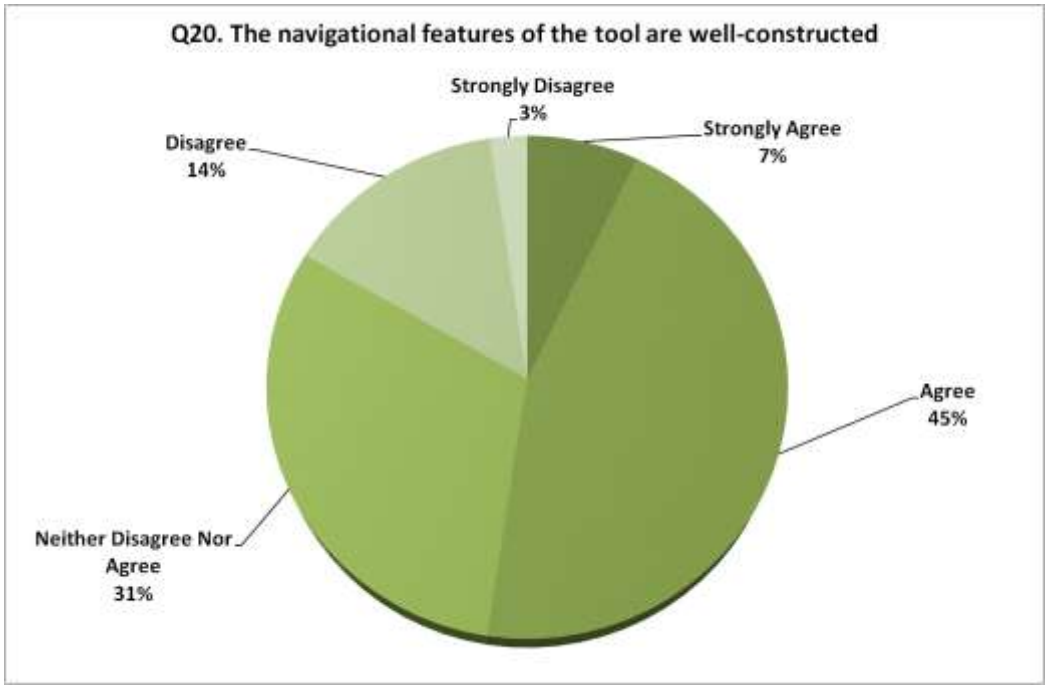

Figure 28: Answers to the assertion that the navigational features of the tool are well-constructed.

The majority of the sample (52% of the respondents) seemed to be confused regarding the ability of the AMP Toolbox to acknowledge the introduction of input data and to employ effectively the provided feedback (Figure 29). The relevant participants' percentages agreeing /disagreeing, equal 28% and 20% of the sample correspondingly.

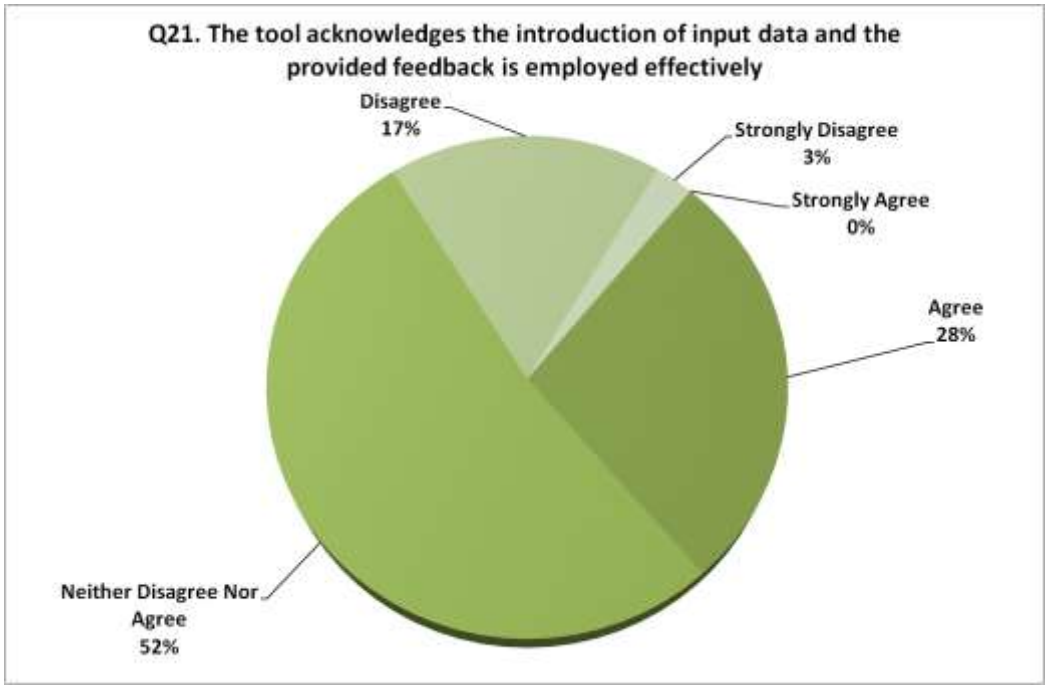

Figure 29: Answers to the assertion that the tool acknowledges the introduction of input data and the provided feedback is employed effectively.

Finally, 54% of the respondents agreed with the assertions that the retrieved information from the implemented searching queries is accurate and valuable (Figure 30).

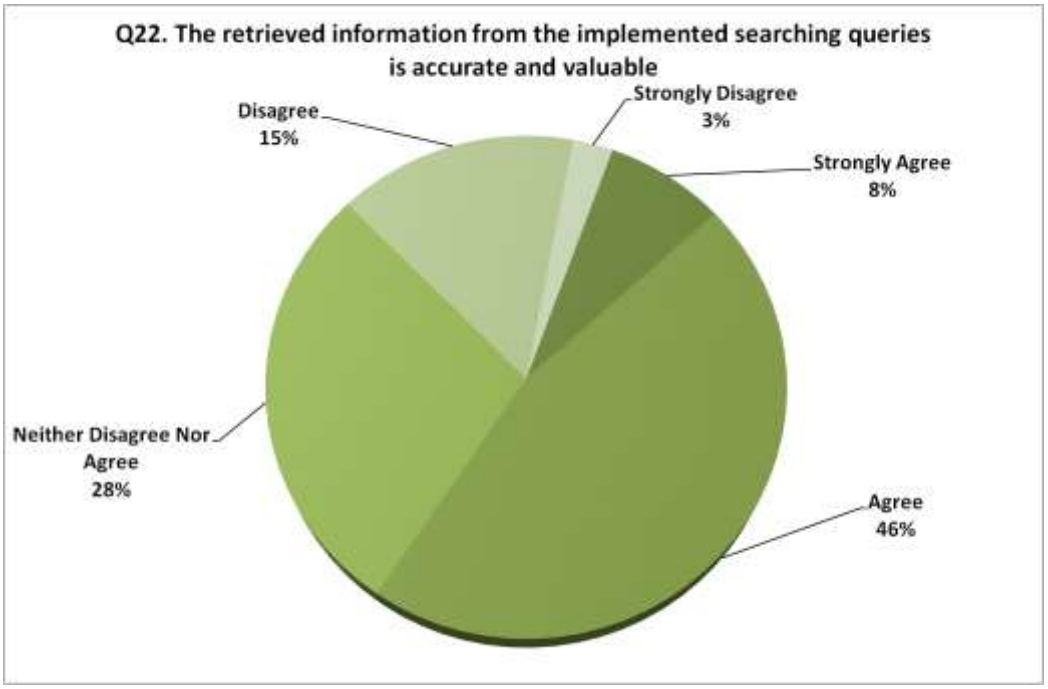

Figure 30: Answers to the assertion that the retrieved information from the implemented searching queries is accurate and valuable.

Technical aspects

In the current section of the questionnaire, various technical aspects of the AMP Toolbox were assessed. Specifically, 54% of the respondents claimed that the included workable interactive features such as forms and menus could be characterized as satisfactory, while only 16% did not agree with this option (Figure 31). Moreover, 30% of the sample neither agreed nor disagreed.

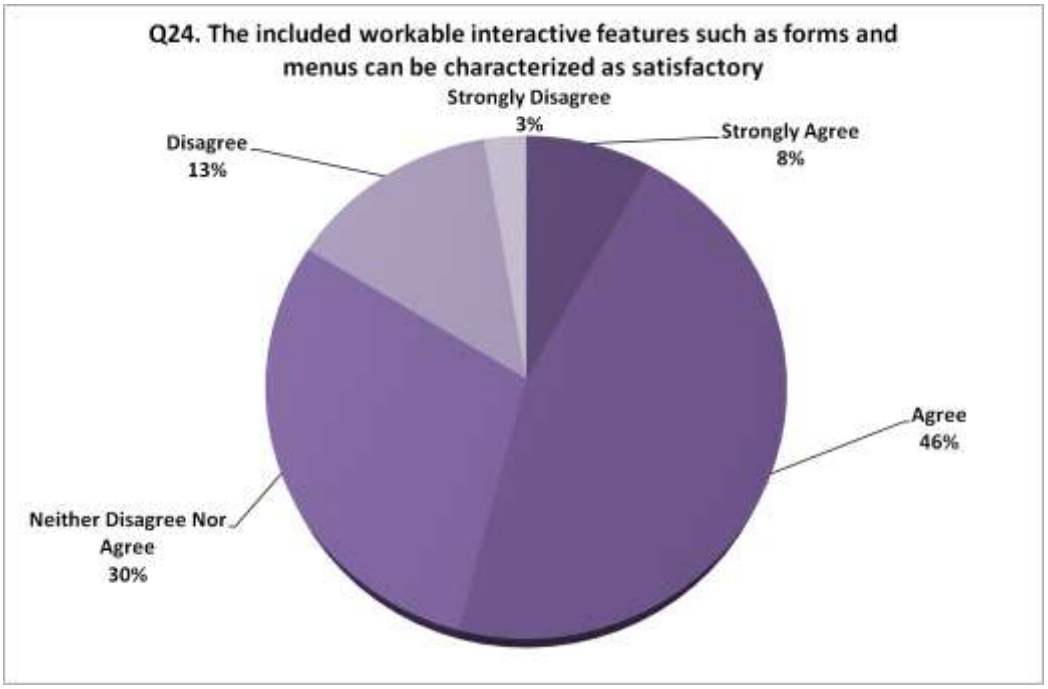

Figure 31: Answers to the assertion that the included workable interactive features such as forms and menus can be characterized as satisfactory.

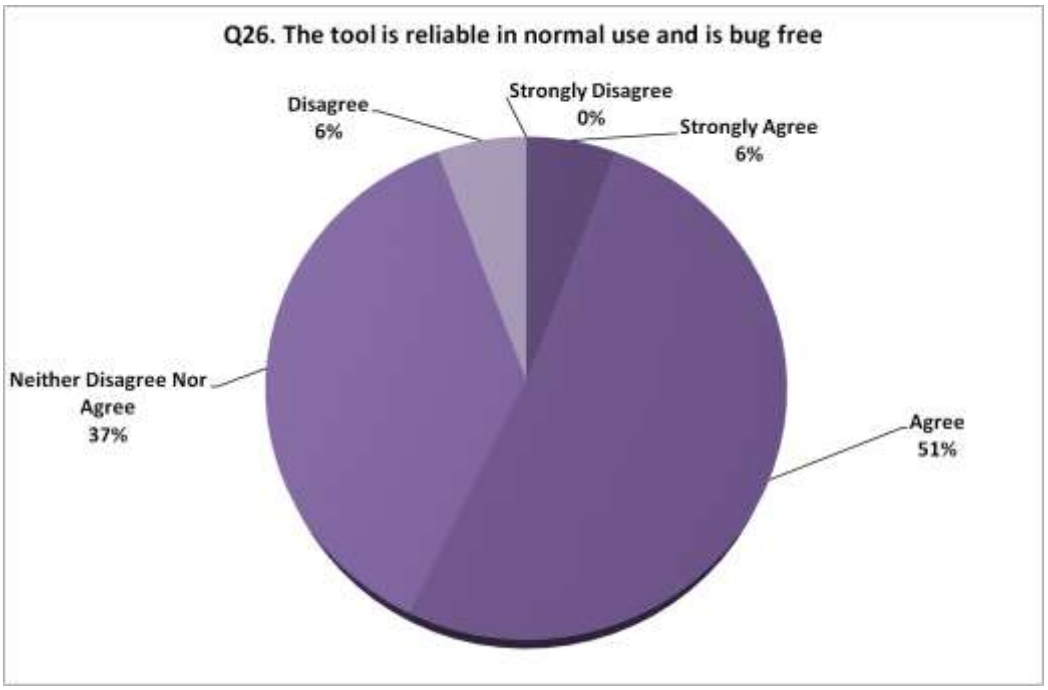

Figure 32: Answers to the assertion that the tool is reliable in normal use and is bug free.

Regarding the technical performance of the AMP Toolbox, 57% of the respondents supported the statement that it seems to be reliable in normal use and is bug free (Figure 32). 6% disagreed, while the rest of them (37% of the sample) neither agreed nor disagreed.

The respondents' majority (75%) confirmed that all the provided links are reliable (Figure 33), while 86% of the respondents stated that the time response of the

AMP Toolbox could be evaluated as satisfactory (Figure 34) confirming the smooth and robust functionality of the AMP Toolbox.

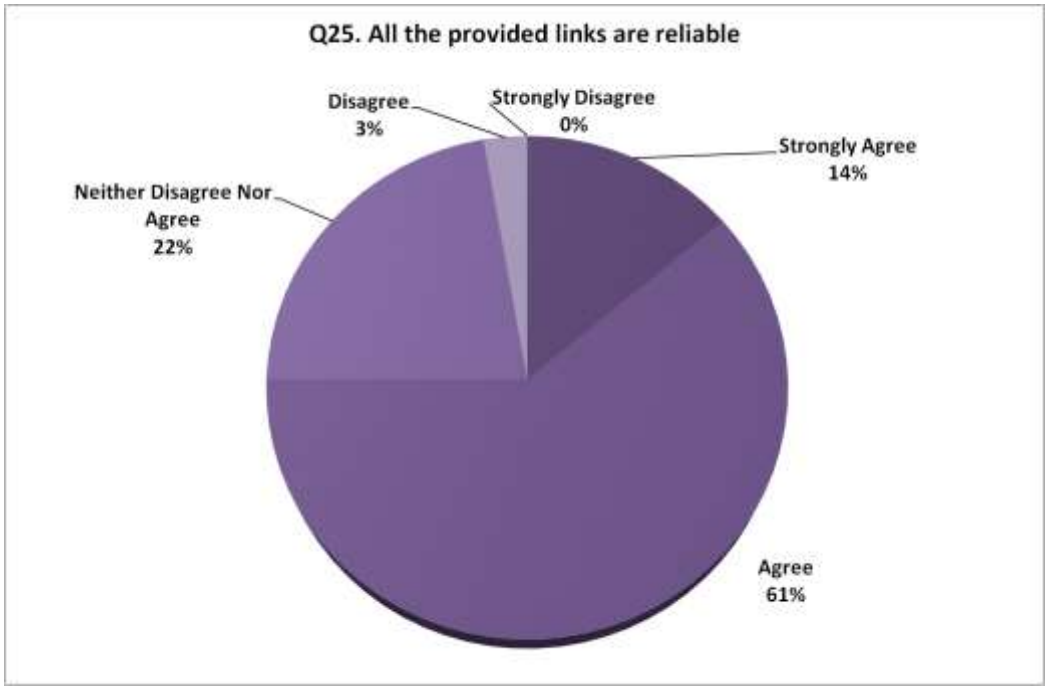

Figure 33: Answers to the assertion that all the provided links are reliable.

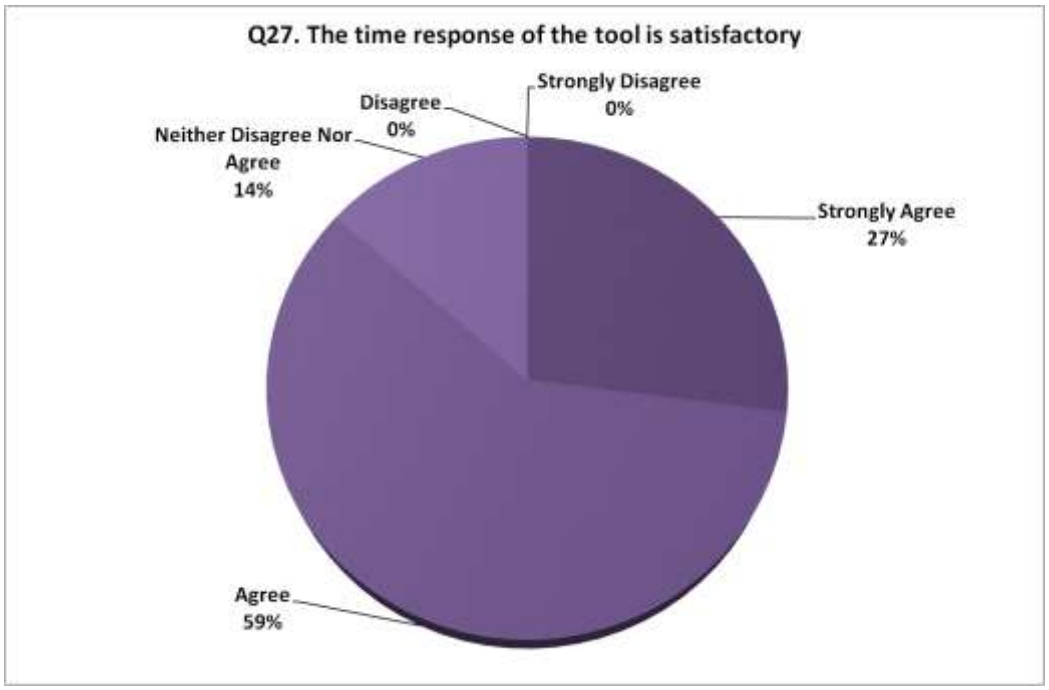

Figure 34: Answers to the assertion that the time response of the tool is satisfactory.

Support

In the final section of the questionnaire, the provided support services of the AMP Toolbox were evaluated. Almost half of the respondents neither disagreed nor agreed with the easiness and effectiveness of the AMP Toolbox to inform the developers about potential technical malfunctions (Figure 35) highlighting the significant opportunities for improvement. The percentages of the respondents, who either agreed or disagreed, were almost equal (28% and 25% of the sample correspondingly).

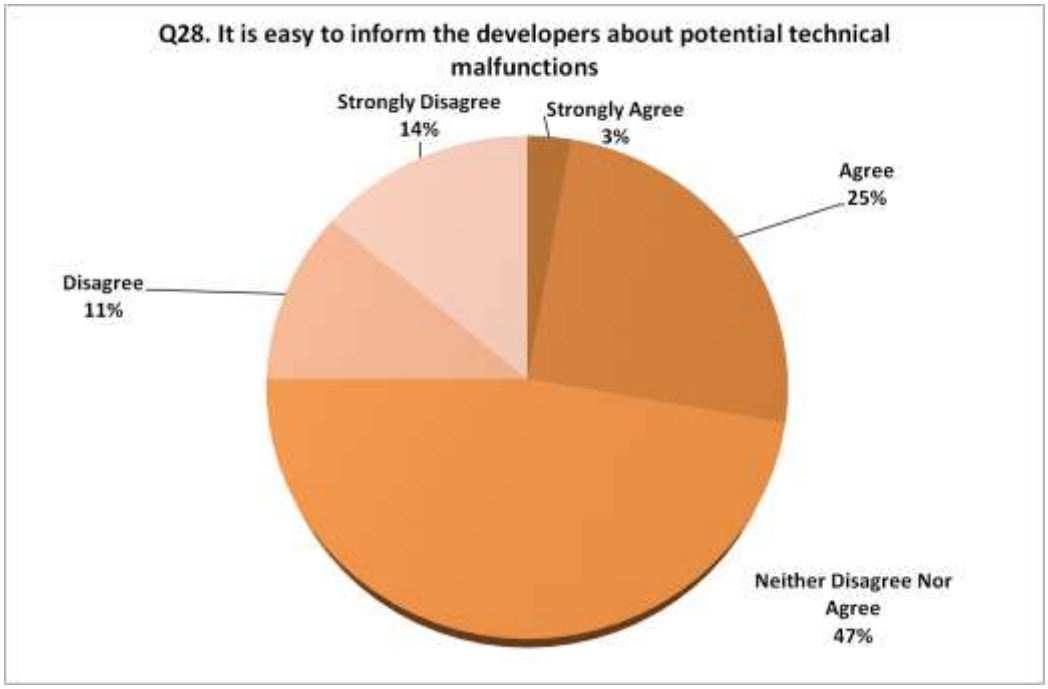

Figure 35: Answers to the assertion that it is easy to inform the developers about potential technical malfunctions.

Comparison among policy makers and scientists' views on the AMP Toolbox. What are the differences in perceptions of these two basic candidate users of AMP Toolbox?

A further research question of interest is the identification of a potential consensus or differentiation between the two different types of stakeholders, namely policy makers and scientists. To this purpose, a comparison of the mean estimates for all the examined aspects of the evaluation, estimates the level of similarity in perceptions towards the AMP Toolbox, among the two groups.

The non-parametric test Wilcoxon-Mann-Whitney was applied in order to identify which answers exhibit the most significant differences between the underlying distributions of the policy makers' scores and the ones of scientists. The results of the Wilcoxon-Mann-Whitney test are presented in Table 10. According to the obtained results, 11 out of 28 questions appear to have statistically significant differences among the responses of policy makers and scientists. The scores of the policy makers were higher than the corresponding scores of the scientists with the exemption of the Q14.

Table 10: Results of Wilcoxon-Mann-Whitney test for policy makers and scientists.

Questions	z	Prob>|z|	Rank sum
Q7. The tool is effective with the intended target group of general stakeholders including users with different abilities and experiences	2.547	0.0109	Policy makers: 305 Scientists: 556
Q8. The tool is comprehensive	2.313	0.0207	Policy makers:259 Scientists: 561
Q9. The tool performs its intended functions satisfactorily	2.541	0.0110	Policy makers:325.5 Scientists: 577.5
Q10. The tool is attractive and interesting so as to motivate the user to utilize it	2.658	0.0079	Policy makers:258 Scientists: 522
Q11. There are no other similar tools available in this area	2.008	0.0446	Policy makers:234.5 Scientists: 711.5
Q13. The information provided is clear, concise and well-written	2.275	0.0229	Policy makers:335.5 Scientists: 567.5
Q14. The information provided is valuable	-3.176	0.0015	Policy makers:357 Scientists: 589
Q15. The structure of the tool is clear, logical, and understandable to the user	2.613	0.0090	Policy makers:289 Scientists: 614
Q17. The tool has been categorized and organized in an efficient manner	2.570	0.0102	Policy makers:286 Scientists: 617
Q20. The navigational features of the tool are well-constructed	1.728	0.0840	Policy makers:273 Scientists: 547
Q24. The included workable interactive features such as forms and menus can be characterized as satisfactory	2.446	0.0144	Policy makers:127 Scientists: 539

6. Discussion

According to the presented results of the in-depth interviews and workshops, the AMP Toolbox appears to contribute to the effective design and implementation of marine policies. AMP is considered as well defined and clearly explained regarding its target; a minority of the respondents argued that there is room for improvement and a potential to develop the tool more efficiently. Policy makers with a strong scientific background are expected to be able to use the AMP Toolbox more efficiently, in comparison with other policy makers or scientists.

Approximately half of the respondents specified that the AMP Toolbox can be characterized as comprehensive. A minority though expressed a sense of disagreement with this assertion. Nearly half of the respondents does not believe that the AMP Toolbox can motivate potential users. A necessity to improve the attractiveness of the tool was expressed, in order to maximize its benefits for marine governance. Less than half of the participants believe that the AMP Toolbox performs its intended functions satisfactorily. To their knowledge there are no similar tools available in this policy domain, confirming the uniqueness of AMP.

Regarding its *contents* the majority of the respondents considered that all the important and policy-relevant issues are covered in a comprehensive manner. The provided information was assessed as valuable. On the other hand, less than half of the respondents consider the provided information and the structure of the AMP Toolbox unclear. They suggest amendment of its structure towards a clearer, more comprehensive and user friendly way. Familiarity with the AMP use and capacity building might improve stakeholders' attitudes towards these aspects.

Use of the AMP Toolbox's functions are characterized easy by (almost) half of the respondents; sources provided in the AMP Toolbox are easily accessible according to the majority of stakeholders. The choice of either going directly to the desired topic or use a structured approach to relevant topics was emphasized.

Generally, the navigational features of the AMP Toolbox were assessed rather positively. A more efficient organization/categorization of the provided material is suggested by a relatively significant percentage of the respondents.

Potential of the AMP Toolbox to acknowledge the introduction of input data caused ambiguity and confusion. In its present form the Toolbox does not support such a function.

The retrieved information from the implemented searching queries was commented as accurate and valuable.

The *technical performance* of the AMP Toolbox was positively evaluated. Specifically, more than half of the respondents specified that the included interactive features are functional; the AMP Toolbox seems to be reliable in normal use, it is bug free, all the provided links are reliable and the time response of the AMP toolbox is satisfactory.

Finally, the provided *support services* of the AMP Toolbox should be improved as almost half of the respondents were indecisive concerning easiness/effectiveness to inform the developers about potential technical malfunctions.

Summarizing, the overall evaluation of the AMP Toolbox can be characterized as positive, while some features of the tool should be improved in order to increase efficiency and functionality of the tool.

7. Recommendations for AMP Toolbox improvement- Lessons learned

Both the evaluation of the qualitative and quantitative aspects of the implemented interviews and workshops converge to a number of suggestions, which provide valuable input to the improvement of the AMP Toolbox. This section gathers and presents in a concise manner the main comments, both general and specific, drawn from the meetings and discussions.

A. General comments

The majority of the respondents mentioned that the AMP Toolbox is not very attractive, flexible and convenient for a 'demanding' user. The tool provides very detailed information, resulting in its characterization as an informational/ educational platform rather, than an operational or policy-making tool. According to the respondents, a content focused mainly on necessary policies and corresponding methodologies/tools would be more helpful for policy-makers. A step-by-step guide to AMP methodologies and tools would be valuable for the potential users. In any case, the structure of the toolbox should be planned according to the need of the target groups of users taking into consideration their background knowledge and the fields of their interest. To this direction, the front page of the AMP Toolbox should have a header with direct and concise information about the goal of the tool.

Additionally to that remark, it was also pinpointed that the structure of the toolbox is confusing and superfluous, and that it is not necessary to present directly all the relevant information to the main pages of the toolbox. It would be probably more beneficial to the user to have the option to search for more detailed information if needed, rather than presenting extended texts and resources at once. This could be achieved through the use of a 'More information' link, providing to the user the opportunity either reading the whole text or moving to a different page. To this end, a clear and concise structure of the actions, tools and resources should be common to all the implemented steps. A brief introduction should be added and additional information should appear only if required. Wider use of graphics is expected to increase functionality of the toolbox.

B. Comments about the structure

The content should be presented in a hierarchical and concise manner. A more schematic view of the content would be beneficial instead of the provision of too much plain text. Thus, special attention must be given in order to synthesize the information and to provide the most critical to each step of the toolbox. The synthesis of this information must be performed in relation with the specification of the target group for each kind of information. A kind of prioritization can be used, possibly through different (size/color/bold/italics) font use because it is very important for the user to know what is the most important to start from. As mentioned, even if all the necessary information is at hand, the user needs to be directed for the effective

utilization of the toolbox. Finally, the presentation of the provided information could be more efficient by replacing the existing – lengthy - texts with summary contents using bullets.

Another interesting remark was the separation of the purely applicable part of the toolbox from the provided background information. This can be beneficial for the users as they can search firstly the background information and then proceed to the design of a policy, the selection of a measure, etc. In this way, users who are experienced (e.g. scientists) can proceed directly to the point, while, all the other users e.g. non-experienced policy makers, could strengthen their knowledge by reading the background information and then proceed with their task.

C. Comments about the contents

A common remark is the limited number of concrete examples, including both success and failure stories. It was mentioned that existing examples provide little information that does not cover all the implementation steps. Indisputably, the toolbox will become more friendly and comprehensive in case that more representative and concrete examples are added, enhancing in this way its functionality. The examples should focus on each and every step rather than being generally described. Indicatively, one representative example implementing all the proposed by the AMP Toolbox steps, (for the case of European or other areas) was highly suggested. To this direction, a pilot example can be added so as to motivate policy makers in implementing the proposed methodological steps. Moreover, it was suggested that these examples should be developed and explained within the context of the MSFD. Specifically, the creation of a video tutorial was suggested; this tutorial video can introduce general instructions on how to use the toolbox.

Additional material must be added to other sections, as well. For instance, it was noted that the 'Legislation' section requires further information and should be organized in a more convenient way. It was additionally mentioned that not enough information about the indicators for the implementation of the MSFD is given; for example, no literature for the commercial fisheries is provided. Last but not least, it was mentioned that most of the literature is not available for downloading as there are mainly scientific articles accessible through subscriptions in scientific journals.

Regarding the 'Resources' section, it was noted that it must be easily accessible and more organized. For example, one single page with all the resources in a database user friendly mode is expected to facilitate its use. The basic information about the provided resources should include specific data including the full title, a brief description and the necessary implementation steps. In the current section, the formulation of guidelines will improve the effectiveness of the tool specifying which steps or resources are more useful for potential types of users. Finally, the possibility of downloading a tutorial should be examined for the effective exploitation of the provided resources.

Finally, regarding the policy cycle, the problem of a break in the logical consequence of Steps, switching between Steps 1-5 in the policy cycle and the resources was

highlighted. Fr instance, it was pointed out that Step 3 of the policy cycle should be more clearly distinguished from Step 2.

D. User interactions and technical aspects

Some of the interviewees believe that the website should be multilingual.

Navigation is not easy through the tool. Thus, a procedure must be established in order to allow the user knowing where she/he is by highlighting the path already followed. For instance, the navigation panel can be improved by keeping a track of where the user is at each moment and what key steps are needed so as to fulfill the performed adaptive policy exercise. Moreover, there is no sitemap of the AMP Toolbox, which could help the user understand the structure of the AMP Toolbox and facilitate its use.

Furthermore, the search mechanism for specific information or tool must be improved. For example a 'Search' window with specific fields or free keywords would allow easier and faster navigation. The existing search tools in the 'Resources' section should be simplified, because it is difficult for the user to understand and utilize all of them. According to the responses, the filtering process can be improved significantly. Moreover, the search forms do not have a search button and as a result the search is executing automatically. This creates difficulties in the case that a user might want to filter more than one fields simultaneously. Within the same section, i.e. 'Resources' additional problems were mentioned, e.g. some queries returned blank fields. A minor proposal includes the removal of the general sidebar in the 'Resources' section as there is no enough space in order to present the search results.

Finally, a main problem that was identified was the fact that there is no basic contact form including either specific field, or link or e-mail provided for user support or comments (e.g. some of the links seemed not to be working). According to the responses, the user has not alternative way to provide a feedback apart from the questionnaire; a FAQ section is expected to facilitate the confrontation of the emerging problems during the utilization of the AMP Toolbox. To the same direction, the addition of a 'support' link would facilitate this procedure and it is also essential to allow people to interact through the development and operation of a forum sending useful information in order to enrich the existing resources of the AMP Toolbox.

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Appendix I: Roadmap sent to WP6 partners January 2014

Task 6.4: Implementation and lessons learned

A Roadmap to the Implementation and improvements of the AMP Toolbox Tests at Pilot case level

M. Skourtos, A. Kontogianni, D. Damigos and C. Tourkolias

1. Introduction

According to PERSEUS DoW, Task 6.4 aims at testing and improving the Adaptive Policy Framework toolbox (hereafter: AMP TB) designed and developed within Task 6.3. The main objective of Task 6.4 accordingly is to test the AMP:

- At the Pilot Cases (hereafter: PCs) (NWMed, Adriatic, Aegean Sea, W. Black Sea)
- And at the basin scale
- For coastal and
- Open sea applications

Test applications will mainly focus on elaboration of adaptive policies aiming to overcome situations at risk of non-achievement of the GES during the 2020-2030 horizon and will be developed using a participative approach involving stakeholders and as far as possible scientists specialized in these kind of risks. From the lessons learned in the PCs, the framework will be finalized so as to ensure its suitability for policy planning at various scales in support of reaching marine GES in the context of the Sustainable Development of the EU riparian countries.

The rationale of testing the AMP - as stated in the DoW and discussed more than once in the GA and SSC meetings - is to empirically verify the use and suitability of the AMP TB for the elaboration of future programs of measures in the framework of the WP6 Pilot Cases. Moreover, the AMP TB have to verify its integrated nature by being able to link to scientific modelling and other scientific resources produced by PERSEUS, justifying its character of a policy oriented project. The test of AMP should also shed light on how well the transition from one policy step to another facilitates (or necessitates!) a 'chain reaction' between socio-economics and scientific models and tools.

Research on Task 6.4 extends from Jan 2014 (T25) to Nov 2015 (T47). Responsible partner is AEGEAN and participants are: Plan Bleu, DELTARES, CMCC, ECOLOGIC, PML, BC3, BSNN, TSU, UU, CSIC, UoP.

Research within task 6.4 will lead to the production of four Deliverables:

D6.13: Reports on the experimentations in the Pilot Cases Due T34 [AEGEAN]

D6.14: Report on the experimentations at SES basin scale Due T42 [BC3]

D6.15: AMP, final report on expectations issued by the SES stakeholder platforms Due T42 [PB]

D6.16: Synthesis report Due T47 [AEGEAN]

The present note aims at developing and proposing a coherent and manageable scheme for organizing the test and the subsequent improvements of the AMP at the level of Pilot Cases. It might be proven useful for organizing the test also on the level of the basin scale but this is something to be decided only after a certain experience has been gained and primarily by the partner leading the corresponding deliverable (BC3). In this note we give a short description of AMP (the 'object" of the test) (section 2), deliberate on the meaning of the 'test' (section 3), present our thoughts on the structuring of the test process and its organization (section 4), give a first, tentative structure of Deliverable D6.13 (section 5) and conclude with a timetable and next steps (section 6).

2. What are we testing?

The AMP TB has been designed and developed within Task 6.3. Results and progress has been laid down in Deliverables D6.7, D6.9, D6.10 and D6.11. Research on aspects of AMP is still on-going but its main features are already there: AMP TB is a set of tools intended to assist policy-makers involved in implementing MSFD in matters of:

- Structuring policy responses
- Delineating institutions and actors involved
- Accessing available data and information
- Becoming aware of alternative policy instruments and their relative merits
- Designing policy scenarios to visualize alternative outcomes
- Evaluating alternative outcomes
- And - because it is adaptive – elaborating policies intrinsically robust to change.

The "tools" in the AMP are meant to facilitate the communication of scientific knowledge and the use of scientific information in deliberation processes and consist of:

- Project management tools that assist policy makers to regularly check consistency and performance of policies.
- Tools and strategies for monitoring of those key-indicators that can help trigger important policy adjustments to keep the policy functioning well.
- Tools and strategies for evaluations of the performance of potential policy adjustments.

PERSEUS has already produced a number of (internal) tools such as:

- Seven databases produced within WP6 and forming the "knowledge base"

- Information and knowledge on the main risks of non-achievement of the GES provided by WP1 (open sea) and WP2 (coastal areas)
- Pressures in socioeconomic terms on the marine and coastal ecosystems by the WP1 (open sea) and WP2 (coastal areas)
- Model results from the WP4

The organization of tools follows the logic of the 5-step adaptive policy cycle elaborated in detail in D6. 7.

NOTA BENE 1: A central element in AMP is its adaptive nature. Our test therefore, in order to be worthy of its name, should lay special emphasis on those elements of AMP which support adaptive decision-making!

NOTA BENE 2: The AMP TB is yet to be finalized. What we are testing in the PCs is a preliminary, "beta" version of the final product. The purpose of the test is to help finalize the AMP in a usable, user friendly way.

3. The meaning of the 'test'

By "test" we practically mean exposing the AMP in a simulated, hypothetical but realistic situation, where an agent is called to address a problem in marine governance using the AMP as a support device. The test will be a preliminary assessment of AMP TB in order to: demonstrate its utility; try out procedures; evaluate its implementation and the results; and make any needed changes or adjustments. To this end there are some critical steps, as follows:

- Develop a "hypothetical but realistic situation"
- Familiarize the participants with the functionalities of the AMP TB
- Collect feed backs on the functionality of the AMP TB.
- Report the results and highlight deficiencies
- Propose and implement improvements

We explain further:

By "agent" we mean a member of a regional PERSEUS SH platform having a specific interest in policy making for aspects of marine management in the PC. 'Agents' are therefore members of the regional SH platforms active in the AMP TB testing and improvement. Depending on the organization of the test (see section 4 below) we may need one or more agents in face-to-face or, alternatively, group meetings. We assume that the chosen agent(s) is (are) representative (in terms of skills, targets, awareness and constraints) of those state employees in the PC charged with the responsibility of implementing the MSFD or stakeholders having interest to develop policy options in the field of marine environment. In cases where not sufficient policy-makers are committed for the test, we should think a way out: we could, for example, implement a partial test of AMP focusing on some policy steps with one, busy and difficult to get on the phone, policymaker. We can then try to complete our missing data by contacting other stakeholders, with or without a formal policy-making property (e.g. NGOs) but a real interest in marine governance.

Three factors are important in selecting agents for the purposes of the test:

- The vicinity of agent to a real, decision-making authority

- The extent of agent's prior experience in developing or implementing new tools, practices, etc.
- The willingness and availability of agents to participate in the test

The selection of suitable agents who are interested in testing the types of practices that are planned for the AMP TB test will help to ensure the successful implementation of the test. By "problem" we refer to an "issue at risk" as defined and described in the PERSEUS research for the PCs and presented in the PERSEUS Factsheets. In case that our agent's priority and interest lies within another issue of marine governance and he prefers to use this as the base of the AMP test, then we agree and continue. Do not forget: it does not pay to insist on using the 'issues at risk' identified by PERSEUS when our agent wishes otherwise; if we do, we probably jeopardize his commitment! By using the term 'problem' we do not want to imply that our test, in order to be successful, must deliver the solution to the problem! Of course, testing the AMP all the way through the five policy steps unavoidably means that we will talk about solutions (the program of measures). No matter how we welcome an outcome where our test ends with a clear solution to the issue investigated, we nevertheless also welcome an outcome where gaps and drawbacks of AMP have been highlighted.

By "hypothetical but realistic situation" we mean a problem setting that anticipates a future or addresses a current issue and its solutions. The problem setting can be visualized as a "what if" scenario that describes the problem and its possible solutions (the 'program of measures') in all five steps of the policy cycle. The setting is realistic if it is anchored in a solid knowledge of the local conditions and habits in matters of state intervention and marine management practices.

By "simulated" we refer to setting in motion the five cycles of AMP by the agent in a deliberative mode to structure the issues and choose response policies. We build them into appropriate MSFD-scenarios and visualize their outcome. We score the performance of policies by suitable indicators: How effective? How efficient? How quick? The simulation (which is practically the test) can take place either in a face-to-face, interview-like setting or in a group fashion. In all cases, stakeholder deliberation is important! Deliberation means that we interact with the agent through observing, asking, noting, correcting, advising, explaining but not biasing the discussion!

4. Structure and organization of the test process

Before we embark on the test itself, we need a thorough and careful design of its structure and organization. The following steps are tentative answers to this task:

Step 1: Do your homework!

Before the test begins, the PERSEUS person(s) involved (hereafter: facilitator and relevant team) must be prepared to answer several questions referring to difficulties that pop up during the process. A facilitator must study thoroughly the spirit and technicalities of the AMP TB as presented in the relevant deliverables: What is an AMP TB? What are the (internal and external) tools? How does the web-based platform of AMP look like? Who can use the tools and how? What skills are required?

What does AMP deliver? Does it include ready-made solutions? Does it include tools specific for this PC (i.e. models and databases)? Can we run scenarios? What use can be made of the several databases? What is 'adaptive' in the AMP? Why is this characteristic important?

More important, she/he must be aware of the overall marine governance in the PC, the issues in the local policy agenda, the pattern of regional pressures as elaborated in the work of WP1 and 2, their characterization in socio-economic terms, the institutional setting, the degree to which regional policy-making traditionally requires scientific inputs, the availability and interest of SHs in the regional SH platform, the appropriate timing to contact SHs, etc etc. We should not forget that the 'raison d'etre' of the AMP TB is to help MS implement their 'program of measures' by 2015.

Step 2: Select your agent(s)!

Task 6.2 in WP6 has advanced considerably our knowledge about Med and BS SHs. Especially D6.12 in its current form (see D6.12_v0_updated.doc) offers a wealth of information on how SHs perceive the SES policy arena and their aspirations about decision support tools like AMP. A close look at the SH platforms, enriched with information on SH identification (PERSEUS_Stakeholder_Identification_V18_140214) will give you a good idea of who is suitable to participate in the test. Choosing the relevant agency / person is a matter of the following parameters: position in the decision-making unit, interest, scientific skills, availability, easiness of contact, etc. At the end, the choice of the agent will probably boil down to the question: who is willing to follow the "test" for a period of time and commit himself to do it? By 'commit' we mean that she/he agrees from the beginning to meet us once or twice per month during the period April to October.

Selecting the agents implies that we invite them to participate by email or phone. This presupposes that we have a concise, self-explanatory paragraph ready, explaining to them (orally or written) what we want from them and what is their benefit of participating. If needed, we send them a written invitation with explanation of the logic and structure of the test. This has been done already once when we contacted SHs for the first time. We need to do it again explaining the specific nature of the test process and its importance for PERSEUS and the SH community. A lot of relevant material (e.g. factsheets) has already been produced within WP6; they can be used to draft the invitation letter and the info material (see Annexes to D6.12).

Step 3: Design the test!

The design of the test needs to take into consideration the number and specific attributes of the persons selected. Depending on the number of persons willing to participate, the test can take the form either of face-to-face or group meetings. A combined use of both approaches is possible. It is also possible to arrange 'hybrid' meetings where a mixture of SHs and scientists participate. The design can be done in collaboration with the agent - if we are lucky enough to have chosen a dedicated and interested agent. But it is expected that most of the work here will fall on the shoulder

of the regional PERSEUS team in charge of the PC and on the scientists specialized on this issues.

General topics that need to be addressed by the facilitator and his team in each PC before the test begins are:

1) Think about possible issues at risk that could be the object of discussion with the agent in both versions: Coastal and open sea. It goes without saying that it is important to rely on the support of PERSEUS experts on the selected risks as they are presented in the Risk Factsheet issued during the Maltese EMD in May 2013. They must also be illustrative of the AMP strengths for the specific PC (i.e. availability of tools on combined pressures, regional models, databases, etc). We optimally would consider issues at risk characterized by:

- A socio-economic profile of pressures known from WP1 and 2
- A time horizon 2020-2030
- An explicit policy target modelled as a gap between BAU and MSFD-scenarios
- Ecological or socio-economic thresholds limiting the agent's potential for intervention.
- A spatial scale in conformity with the jurisdictional responsibilities of the agent(s).
- A set of program of measures to reach GES including monitoring, public awareness, need to pursue researches etc.
- 'Nodes' for policy adaptation and redefinition

2) Think about the pros and cons of alternative forms of meetings with the agent(s): how manageable and productive do the alternative meeting forms look like? Do we need to economize on time and effort by organizing group meetings? In what forms of meetings are we experienced? Deliberate with the agent(s) on this topic to see what is comfortable for them.

3) Think about methodological requirements of the chosen form of interaction with agent(s). There is to date an enormous number of techniques available to conduct SH deliberation and analytical approaches to extract insights. Is it a pure qualitative exercise where taking notes and logical analysis is all that is required? It is a study case involving agents, scientists and the facilitator? Is it a "focus group" meeting requiring special skills from the facilitator? Is it a "structured interview" type of meeting requiring the development of a specific questionnaire and the training of interviewer(s)? Is it a Fuzzy Cognitive Mapping exercise? What else?

4) Resolve practicalities: Have you produced / put together some illustrative material (e.g. the PERSEUS factsheet on AMP)? Are dates and venues of the meetings fixed in advance? Have you decided on who keeps notes of the test? Have you prepared for specific needs of specific methodologies (focus groups, fuzzy cognitive mapping, structured interviews etc)? Other?

Step 4: Implement the test!

In our (individual or group) meetings we intend to expose the AMP TB to the participants and get a feedback on its usefulness /appropriateness. The AMP TB itself should be in a form suitable to be demonstrated to the potential users, preferably as a web-based platform. We introduce the AMP TB to the agent(s) by saying that in 2015 the MS should implement an appropriate 'program of measures'. This raises questions such as: How to do it, how to choose among the available alternatives, how to evaluate policies? Do they perceive this need? Are they ready to handle it? Do they need support? What kind of support? Is the AMP TB a good support tool?

Starting from these investigative questions we inform the agent(s) of the specific tools available in the AMP TB: what the tools are about, provide a short description, ask about their experience with these or similar tools, etc. Depending on the familiarity of the agent(s) with similar web-based tools, the information phase on the AMP TB functionalities could take up our first meeting (or more!).

Irrespective of the chosen form of meetings, we optimally should discuss all aspects of the chosen issue at risk following the policy cycle:

- Understanding the issues
- Collecting information
- Comparing options
- Drafting scenarios
- Visualize results
- Revise results

The above topics are discussed sequentially in a number of meetings according to the approach/methodology chosen. We may devote our first meeting to the first topic of the above list ('understanding the issue') and investigate how AMP helps in dealing with it. We keep notes and write down any insights we gain during the meeting. If we are lucky, the topic is exhausted in one meeting and we prepare ourselves to investigate a further topic in the next meeting with the agent(s).

The topics to be discussed are of unequal familiarity to the agent(s). 'Comparing options' and 'drafting scenarios' are expected to be a bit difficult to discuss - not the least because the availability and timeliness of the modelling cannot be guaranteed. The agent may ask for help in visualizing explicit, adaptive policy targets modelled as a gap between BAU and GES-scenarios but this is not at present easy. But do not loose faith: other topics will prove to be more easy and amenable to the agent(s) perception of policy making.

An important characteristic of AMP is policy adaptability. Therefore, the topic on 'Revise results' should be treated with care and discussed again and again. Most decision-makers do not know empirically what 'adaptive policies' look like and how such a state of policy-making can be achieved. It seems logical that in order to adapt, one has to anticipate: you adapt your targets and/or tools if you feel you are moving in the wrong direction. In our case, this can be guaranteed only with a suitable

monitoring and observation system set up as an essential component of the policy (besides a strong sense of intuition and forward looking). It is impossible to test this point of AMP in real time; therefore we must simulate the need of the agent(s) to adapt. For example, in some point in the test we agree with the agent(s) to assume that our policies to address the chosen issue at risk miss the target. How does the agent(s) react? How can AMP help in this case?

It is very important to emphasize that what we are testing is the AMP TB, not the MSFD or the quality and effectiveness of the local marine policies. In order to highlight this and streamline the test, we have produced an evaluation questionnaire to be used during the interviews/meetings. The questionnaire could be sent out to a number of agent(s) to fill in, although this is not its primary intention. It should be used as a tool, firstly, to organize the discussion and, secondly, to facilitate and homogenize reporting of the main insights gained.

Step 5: Write down your results

Keep in mind that the follow-up of the test is to improve and adapt the AMP in line with the lessons learned from the tests, complete the knowledge database of PERSEUS, and draw conclusions on key successes and limiting factors. User experiences of similar Toolboxes are, however, seldom written down and formalized in order to make them easily accessible for other people. Therefore, well-formed reports on the practical test and evaluation of the AMP TB provides an important way of getting valuable and detailed information from the practical point of view.

The success criteria of AMP inter alia are: Easiness, flexibility, coverage, and conformity with existing practices. The filled-in questionnaires, your notes during the test, and the written texts that will be consequentially produced, are of vital importance in this respect. Furthermore, the results of the test in the four PC will feed Deliverable D6.13. So take care to organize note taking (or even voice recording!) very seriously.

Appendix II: AMP web based Evaluation protocol

AMP TESTING

Evaluation Protocol

Name: _____

Address/tel/email: _____

Job Title: _____

Responsibilities: _____

Years in present position: _____

Date of testing: _____

Location of testing:_____

Form of testing:_____

Policy issue(s) discussed:_____

INSTRUCTIONS

Please circle the response to the items. Rate aspects of the AMP on a 1 to 5 scale:

1 = Strongly disagree; the user expresses the lowest, most negative impression

2 = Disagree

3 = Neither agree nor disagree; the user expresses a medium stance

4 = Agree

5 = Strongly agree; the user expresses highest, most positive impression

A. Scope of the AMP

Q1. The tool is useful to policy-makers involved in MSFD implementation	1	2	3	4	5
Q2. The target of the tool is well defined and clearly explained to the user	1	2	3	4	5
Q3. The tool contains adequate information referring to its inputs	1	2	3	4	5
Q4. The tool is effective with the intended target group of scientists	1	2	3	4	5
Q5. The tool is effective with the intended target group of policy makers	1	2	3	4	5

Q6. The tool is effective with the intended target group of policy makers with a strong scientific background	1	2	3	4	5
Q7. The tool is effective with the intended target group of general stakeholders including users with different abilities and experiences	1	2	3	4	5
Q8. The tool is comprehensive	1	2	3	4	5
Q9. The tool performs its intended functions satisfactorily	1	2	3	4	5
Q10. The tool is attractive and interesting so as to motivate the user to utilize it	1	2	3	4	5
Q11. There are no other similar tools available in this area	1	2	3	4	5

B. Content

Q12. All important and policy-relevant issues are covered in a comprehensive manner	1	2	3	4	5
Q13. The information provided is clear, concise and well-written	1	2	3	4	5
Q14. The information provided is valuable	1	2	3	4	5
Q15. The structure of the tool is clear, logical, and understandable to the user	1	2	3	4	5

C. User interactions

Q16. It is easy to use the tool's functions	1	2	3	4	5
Q17. The tool has been categorized and organized in an efficient manner	1	2	3	4	5
Q18. The user can easily access the sources provided in the tool	1	2	3	4	5
Q19. The user has the choice of either going directly to the desired topic or use a structured approach to relevant topics	1	2	3	4	5
Q20. The navigational features of the tool are well-constructed	1	2	3	4	5
Q21. The tool acknowledges the introduction of input data and the provided feedback is employed effectively	1	2	3	4	5
Q22. The retrieved information from the implemented searching queries is accurate and valuable	1	2	3	4	5

Q23. The program provides a copy or summary of its basic information to the user for future reference	1	2	3	4	5

D. Technical aspects

Q24. The included workable interactive features such as forms and menus can be characterized as satisfactory	1	2	3	4	5
Q25. All the provided links are reliable	1	2	3	4	5
Q26. The tool is reliable in normal use and is bug free	1	2	3	4	5
Q27. The time response of the tool is satisfactory	1	2	3	4	5

E. Support

Q28. It is easy to inform the developers about potential technical malfunctions	1	2	3	4	5

F. SUGGESTIONS FOR IMPROVEMENT

Scope: Does the AMP addresses the right questions / issues / groups of users? What is missing? What parts should be strengthened? What is superfluous? / Is the AMP better suited to target specific issues and not others? (Which ones?)

ANSWER:……
……
……
……

Content: Does the AMP contain all necessary information? What is missing? What parts should be strengthened? What is superfluous? How can its coverage be improved?

ANSWER:……
……
……
……

User interactions: Is the AMP user friendly? Is it flexible? How can its easiness be improved?

ANSWER:……
……

……
……

Technical aspects: Is the AMP technically up to the required standards? Does it conform to existing practices? How can it be improved?

ANSWER:……
……
……
……

Support: Is the support to the user satisfying? What is missing? What parts should be strengthened? What is superfluous? How can it be improved?

ANSWER:……
……
……
……

General remarks:
……
……
……..

Appendix III: Invitations to the AMP Experimentations

Western Mediterranean Pilot Case

WORKSHOP

Policy Tools for Marine Governance
Adaptive Marine Policy Toolbox

Our knowledge on marine ecosystems is to date far from complete. Marine scientific communities find it difficult to assist a knowledge-based policy and are reluctant to provide advice to policy makers due to too many uncertainties looming. Marine governance is a complex topic.

The present Workshop is organized by PERSEUS in order to launch the new Adaptive Marine Policy toolbox in its web-based version. The AMP Toolbox aims at assisting decision-makers, planners, policy analysts, NGOs and interested individuals in formulating, dissecting and synthesizing policy measures for addressing marine issues and topics. The workshop will provide to the participants the opportunity to work hands-on with the AMP and familiarize themselves with its structure and potential uses.

Venue: SOCIB meeting room, Palma de Mallorca, Spain
Date: Thursday, 30th October 2014
Contact: David March (david@imedea.uib-csic.es)

AGENDA

9:30 Presentation of the AMP Toolbox

9:45 Hands-on with the AMP Toolbox

10:15 Evaluation questionnaire

10:30 Closure

Aegean East Mediterranean Pilot Case

WORKSHOP

Policy Tools for Marine Governance
Adaptive Marine Policy Toolbox

Our knowledge on marine ecosystems is to date far from complete. Marine scientific communities find it difficult to assist a knowledge-based policy and are reluctant to provide advice to policy makers due to too many uncertainties looming. Marine governance is a complex topic.

The present Workshop is organized by PERSEUS in order to launch the new Adaptive Marine Policy toolbox in its web-based version. The AMP Toolbox aims at assisting decision-makers, planners, policy analysts, NGOs and interested individuals in formulating, dissecting and synthesizing policy measures for addressing marine issues and topics. The workshop will provide to the participants the opportunity to work hands-on with the AMP and familiarize themselves with its structure and potential uses.

Venue: HCMR Building, Anavyssos, Greece

Date: Thursday, 23rd October 2014

Contact: Dr. Barbara Zanou (bzanou@hcmr.gr) or Prof. Areti Kontogianni (akontogianni@uowm.gr)

AGENDA

9:30 Meeting with HCMR scientists / dispatch of material/initializing the process
11.00 Presentation of the AMP Toolbox
11:25 Hands-on with the AMP Toolbox
12:10 Oral Evaluation of the AMP Toolbox
14: 10 Coffee break - Written evaluation of the AMP
14: 30 Closure

Western Black Sea Pilot Case

Adaptive Marine Policy
AMP Toolbox

EXPERIMENTATIONS ON THE ADAPTIVE MARINE POLICY TOOLBOX

WESTERN BLACK SEA PILOT CASE STUDY

Introduction:

One of the most important objectives of PESREUS is to bridge the gaps between scientists and policy-makers and provide policymakers a framework to design and implement policies and management schemes to achieve or maintain Good Environmental Status in the Southern European Seas (SES).

For this purpose the Adaptive Marine Policy Framework Toolbox (AMP Toolbox). The AMP Toolbox is a one-stop repository of principles, instructions and resources to develop adaptive marine policies in the Mediterranean and Black Seas.

Objective of the workshop:

The objective of the workshop is two-fold: (i) to test the usefulness of the AMP Toolbox in the Western Black Sea Pilot Case Study through a participative approach and using an issue at risk of not achieving Good Environmental Status; and, (ii) to improve the AMP Toolbox with the lessons learn during the testing phase.

Agenda:

1- Brief presentation on the structure, objectives and functionality of the AMP Toolbox to participants (10 minutes).
2- Brief tour through the AMP Toolbox website to see the way it works (10 minutes).
3- Presentation on the application of the AMP Toolbox to the case of the Turbot´s overexploitation/Eutrophication in the Western Black Sea (20 minutes).
4- Collection of opinion and suggestions of the participants on the AMP Toolbox. Through:
    a. Open discussion (15 min)
    b. Questionnaire (15 min)

Spanish-West Mediterranean Pilot Case

AMP WORKSHOP WITH POLICY MAKERS (Bluefin tuna case study) - Spanish West Mediterranean pilot case

The AMP Workshop on bluefin tuna is held on the 12th December 2014 at the premises of SOCIB (Palma de Mallorca, Spain) from 9:00 to 14:00. This workshop is the result of a joint effort between the PERSEUS and BLUEFIN projects. It constitutes part of the PERSEUS Task 6.4 on the testing of the AMP Toolbox with Spanish stakeholders from the Western Mediterranean Pilot.

The objective of the AMP Workshop is two-fold. First, present results of the BLUEFIN project and its potential contribution to support the design of pelagic marine protected areas. Second, use such case study to evaluate the web version of the Adaptive Marine Policy (AMP) Toolbox.

Agenda

9:00 – 9:10	Opening and welcome
9:10 – 9:30	BLUEFIN project
9:30 – 9:50	Adaptive Marine Policy Toolbox
9:50 – 10:10	Coffee break
10:10 – 10:40	Step 1. Setting the scene
10:40 – 11:10	Step 2. Assemble the basic policy
11:10 – 11:40	Step 3. Make policy robust
11:40 – 12:00	Coffee break
12:00 – 12:30	Step 4. Implement the policy
12:30 – 13:00	Step 5. Evaluate and adjust policies
13:00 – 13:45	Conclusions and evaluation questionnaire
14:00	Lunch

Appendix IV: List of Participants in the Black Sea Commission AMP Workshop

Commission on the Protection of the Black Sea Against Pollution

International Black Sea Day -2014

3rd November 2014, Istanbul, Turkey

List of Participants in the AMP Workshop

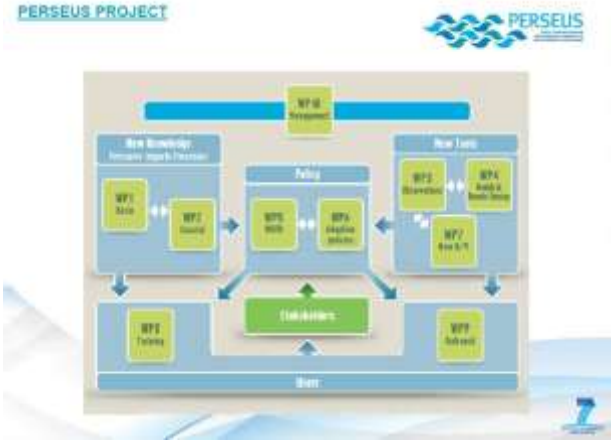
Name	Affiliation
Bulgaria	
Mr. Vladimir Dontchev	Deputy Minister, Ministry of Environment and Water of Bulgaria
Ms. Violeta Roiatchka	State Expert, Water Management Directorate, Ministry of Environment and Water of Bulgaria
Georgia	
Ms. Niko Tskhadadze	Chief Specialist, Service of Water Resources Management, Ministry of Environmental Protection and Natural Resources, Tbilisi
Mr. Tornike Phulariani	Division of Environmental Policy, Ministry of Environment Protection and Natural Resources
Ms. Maia Ochiava	Member of Executive Board of BSNN from Georgia, Tbilisi
Romania	
Ms. Valeria Abaza	Scientist, National Institute for Marine Research and Development, Constanta
The Russian Federation	
Mr. Anatoly Krutov	Principal Research Fellow, State Oceanography Institute, Moscow
Ms. Ekaterina Antonidze	Kuban Basin Water Directorate, Ministry of Natural Resources, ICZM Center, Krasnodar
Mr. Eugene Belan	Kuban Basin Water Directorate of the Federal Agency of Water Resources, Krasnodar
Turkey	
Mr. Muhammet Ecel	General Director of General Directorate of Environmental Management, Ministry of Environment and Urbanization of Turkey
Mr. Murat Turan	Head of Marine and Coastal Management, General Directorate of Environmental Management, Ministry of Environment and Urbanization of Turkey
Ukraine	
Ms. Oksana Tarasova	Advisor to Minister of Environment and Natural Resources of Ukraine
Mr. Ievgen Patlatiuk	State Ecological Inspection of the Black Sea Protection, Odessa
Black Sea Commission Permanent Secretariat	
Prof. Halil Ibrahim Sur	Executive Director
Ms. Iryna Makarenko	Pollution Monitoring and Assessment Officer

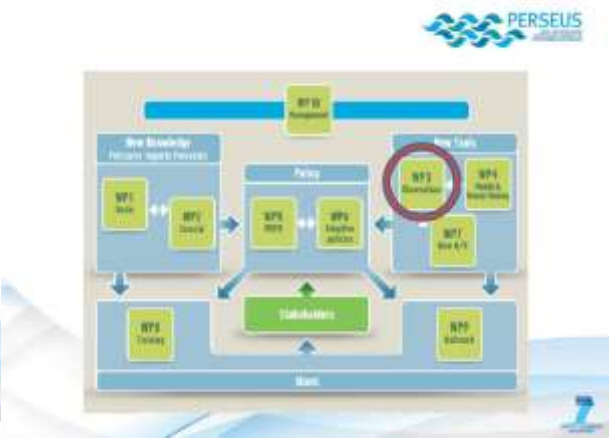
Guests	
Dr. Vladimir Mamaev	Regional Technical Advisor, International Waters, United Nations Development Programme (UNDP), Istanbul Regional Centre for Europe & CIS
Mr. Svetoslav Stoyanov	Policy Officer, European Commission, Directorate-General Maritime Affairs and Fisheries, Maritime Policy Mediterranean and Black Sea (MARE D. 1)
Mr. Nicola Di-Pietrantonio	European Commission, DG DEVCO
Mr. Alexander Bakalov	Executive Manager, Organization of the Black Sea Economic Cooperation, Permanent International Secretariat, Istanbul – Turkey
Dr. Evangelos Papathanassiou	Research Director, Hellenic Centre for Marine Research, Coordinator of PERSEUS Project
Mr. Nikos Streftaris	Marine Biologist, PERSEUS & IRIS-SES Project Manager, Hellenic Center for Marine Research
Ms. Violeta Velikova	EMBLAS CTA
Ms. Marcela Fabianova	Water Programme Analyst, EMBLAS
Mr. Vasyl Kostiushyn	EMBLAS Project Manager
Ms. Lilia Spasova	EMBLAS Project Assistant
Ms. Colpan Beken	MISIS Project, TUBITAK-Marmara Research Center
Ms. Olga Konareva	EMBLAS Project, Senior Research, ONU Ukraine
Mr. Sergey Konovalov	EMBLAS Project, Head of Department, MHI, Sevastopol
Ms. Niko Machitadze	EMBLAS Project, Senior Scientist, TSU, Georgia
Mr. Aleksandr Mikaelian	EMBLAS Project, Leading Scientist, SIO-RAS, Russia
Ms. Galyna Minicheva	EMBLAS Project, Deputy Director, OB IBSS, Ukraine
Ms. Alexander Boltachev	EMBLAS Project, Deputy Director, OB IBSS, Sevastopol
Mr. Ruben Kosyan	EMBLAS Project, Head of department of the coastal zone at Southern branch of the P.P. Shirshov Institute of oceanology, RAS
Mr. Alexander Postnov	EMBLAS Project, Deputy Director, State Oceanographic Institute, Moscow
Mr. Alexey Khaliulin	EMBLAS Project, MHI, Sevastopol
Mr. Eugeny Godin	EMBLAS Project, MHI, Sevastopol
Mr. Aleksandr Korshenko	EMBLAS NFP, Head of laboratory, State Oceanography Institute, Moscow
Ms. Tamara Shiganova	EMBLAS Project, Leading Scientist, SIO-RAS, Moscow
Ms. Marine Mgeladze	EMBLAS NFP, Head of Environmental Pollution Monitoring Department, Ministry of Environmental Protection and Natural Resources, Tbilisi
Mr. Yuriy Denga	EMBLAS Project, Ukrainian Scientific Center of

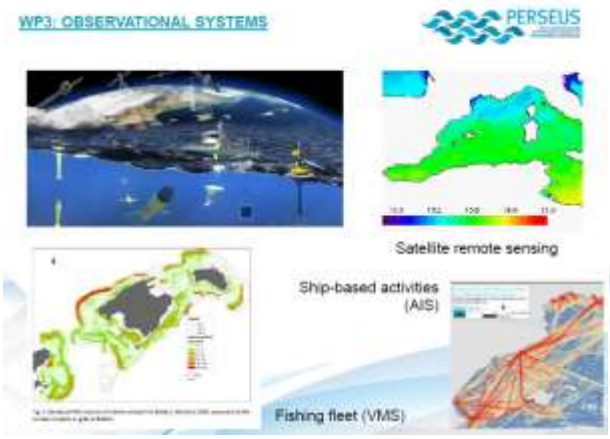
	Ecology of Seas, Odessa
Mr. Richard Lisovskyi	EMBLAS Project, Ukrainian Scientific Center of Ecology
Ms. Jarmila Makovinska	EMBLAS Project
Mr. Zurab Jincharadze	EMBLAS Project
Prof. Michalis Skourtos	Member of the SSC of the PERSEUS Project, Integration Expert, Professor for Environmental Economist, Agricultural University of Athens, Greece
Prof. Areti Kontogianni	Professor Dr. Environmental Economics University of Western Macedonia, Greece, PERSEUS Project
Dr. Margaretha Breil	Centro Euro-Mediterraneo per I Cambiamenti Climatici (CMCC), Italy, PERSEUS Project
Dr. Maialen Garmendia	Basque Centre for Climate Change (BC3), Spain, PERSEUS Project
Dr. David March Morla	Spatial Ecologist, PERSEUS Project, IMEDEA
Dr. Julien Le Tellier	Programme Officer – Territorial Approaches, Plan Bleu, France, PERSEUS Project
Ms. Emma Gileva	Black Sea NGO Network (BSNN), Bulgaria, PERSEUS Project
Ms. Emily Koulouvaris	Member of the SCC of PERSEUS Project, WP Leader of Communication WP, EIR-Global, Belgium
Ms. Ayaka Amaha	Turkish Marine Research Foundation (TUDAV)
Mr. Yavuz Eroglu	Waste Free Oceans (WFO) Turkey, Mutlu Baliklar Happy Fish
Ms. Yarmur Cengiz	Waste Free Oceans (WFO) Turkey, Mutlu Baliklar Happy Fish

Appendix V: Material shown during experimentations

Presentation in Spanish-West Mediterranean Pilot Case - Adaptive Marine Policy Toolbox



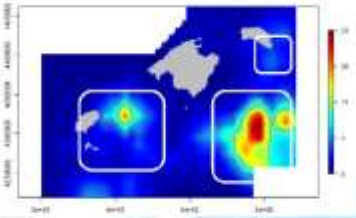




WP4: INTEGRATED TOOLS FOR ENVIRONMENTAL ASSESSMENT

PERSEUS

Predicted spawning habitat (2004)



The policy oriented approach

PERSEUS

1. Adaptive Policy Framework Tool Box

Scope

PERSEUS

Marine Strategy Framework Directive

"the programme of measures is flexible and adaptive and takes account of scientific and technological developments".

PERSEUS

The APF toolbox as a core materialization of PERSEUS 'participatory' research

APF facilitates dialogue during the 5 steps in the policy cycle by:

- ✓ Sharing information: Increased accessibility to data for both sides
- ✓ Popularizing scientific results
- ✓ Articulating social needs and priorities
- ✓ Building scenarios: link scientific output to (social) choice options
- ✓ Evaluating scenarios: translate chosen alternatives to ensuing cost/benefit magnitudes and allocation among SH groups
- ✓ Building consensus

Areas for development of the APF: 4 pilot cases - 4 SHPs...

PERSEUS

Building and supporting Stakeholder platforms with relevant experts, managers, practitioners, end-users, decision-makers, and stakeholders in 4 PCs and at the regional level (SES)

4 PCs in EU waters:

1. West Mediterranean:
   - Gulf of Lions - Balearic Sea;
2. Central Mediterranean:
   - Northern Adriatic Sea;
3. East Mediterranean:
   - Aegean Sea - Saronikos Gulf;
4. Western Black Sea: Romania and Bulgaria (EU member States).

1. Adaptive Policy Framework Tool Box

Objective

PERSEUS

- Objective: to provide policymakers with a useful decision support tool to develop adaptive marine policies in the Mediterranean and Black Seas.

Adaptive Marine Policy

AMP Toolbox

- Key Principles: (i) use of scenario planning methods, (ii) stakeholder involvement, (iii) scientific, EBA, and, (iv) cyclical process where learning about management consequences is simultaneously incorporated.

1. Adaptive Policy Framework Tool Box

Structure

PERSEUS

1. Adaptive Policy Framework Tool Box

Structure: Steps

PERSEUS

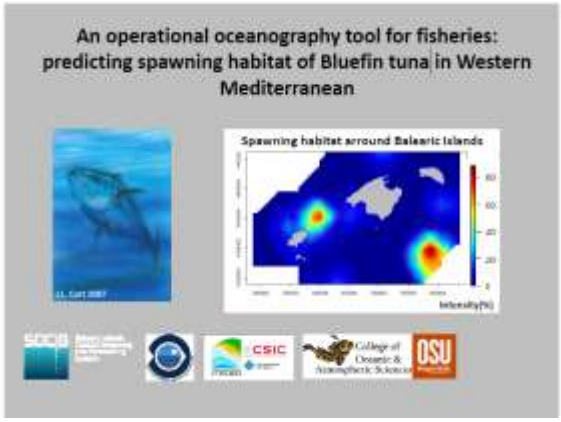

1. Adaptive Policy Framework Tool Box
Structure: Activities
PERSEUS
Introduction
Key questions
Key actions
Resources
Directly accessed by the Activities pages, or by the resources menu

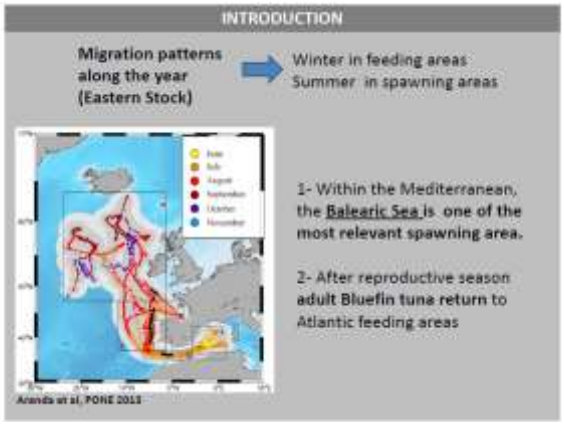

1. Adaptive Policy Framework Tool Box
Structure: Resources
PERSEUS
AMP Toolbox

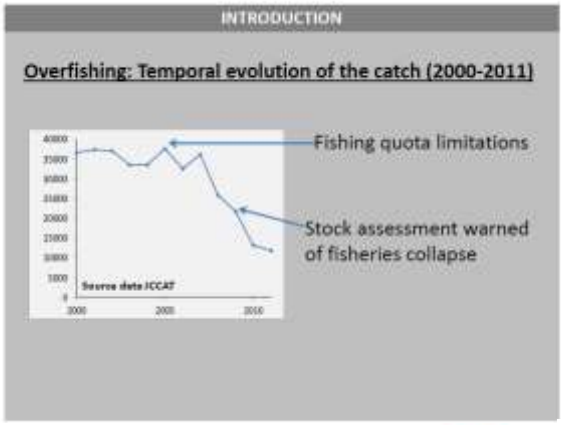

1. Adaptive Policy Framework Tool Box
Structure: Resources: Tools and methods
PERSEUS
General information:
Steps to use in
Purpose
Overview
Tips
Pedigree
Synergy
Source of information
Appendix
Selecting criteria:
Usage
Cost
Capacity
Background
Requirements
Participation
Time range

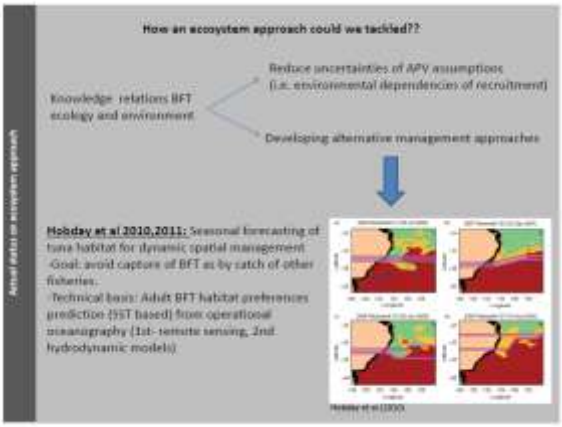

PERSEUS
WORKSHOP
Adaptive Marine Policy Toolbox (AMP TB)
12 December 2014
Palma de Mallorca, Spain

Presentation in Spanish-West Mediterranean Pilot Case - Bluefin tuna example









BLUEFIN TUNA PROJECT: GOAL

Take advantage of new Operational Oceanography tools to introduce environmental variability on Bluefin tuna management and conservation

BLUEFIN TUNA PROJECT: GOAL

Applications to spatial management within the BLUEFIN project:

1- Identify the relations between **Bluefin tuna reproductive ecology** and **regional mesoscale oceanography**, and identifying **key environmental variables**

2- Selected operational oceanography products and predict spawning areas to propose **alternative management approaches** (applications)

METHODS

1- How spawning of bluefin tuna depends on regional mesoscale oceanography + identify key environmental variables

5 years of data 2001 to 2005

Identification of spawning Habitat from larval abundance

Oceanography from CTD

Spawning habitat = f (environmental variables ,CTD)

STATISTICAL MODELLING

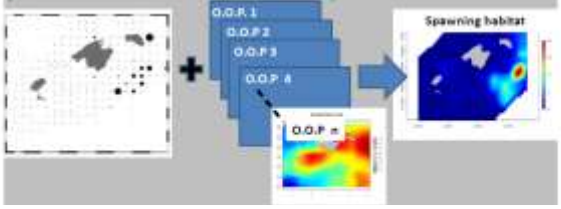
KEY ENVIRONMENTAL VARIABLES

METHODS

2- Selected operational oceanography products and predict spawning areas

General aditive models are fitted agains environmental data from Operational Oceanography to obtain predictive spawning habitat maps

Statistic model

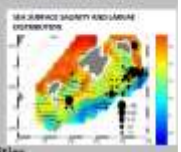


RESULTS

1- How spawning of bluefin tuna depends on regional mesoscale oceanography + identify key environmental variables

Key Environmental Variables

- -Chlorophyll-a
- -Sea surface temperature
- -Sea Surface salinity
- -Sea Surface geostrophic velocities
- -Spatial gradients geostrophic velocities



GAM; decision trees; NNS

-Bluefin tuna reproductive ecology is highly dependent on regional mesoscale oceanography

Alemany et al 2010, Muhling et al 2013, Reglero et al 2012, Alvarez-Berastegui 2014

RESULTS

2- Identify operational data sources giving information about identified variables

From remote sensing

- Chlorophyll-a
- Sea Surface geostrophic velocities
- Spatial gradients of geostrophic velocities at specific scales (Alvarez-Berastegui et al 2014)

From hydrodinamic models

- Zonal sea surface temperature
- Zonal sea surface temperature increment

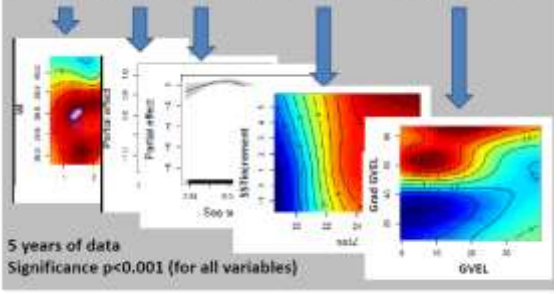
Sea Surface salinity NOT SELECTED

RESULTS

2- Modeling SPAWNING HABITAT from operational oceanography data sources

(GAM) Spawning habitat =

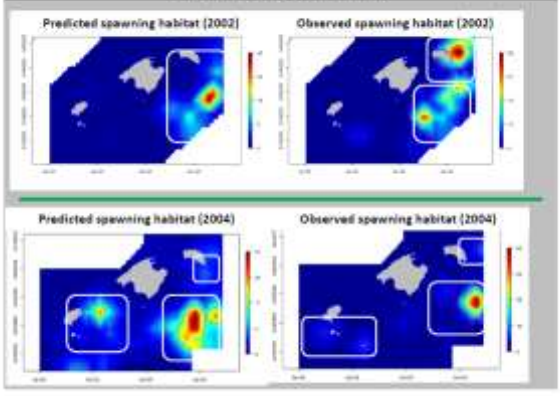
s_1(long, lat) +s_2(hour)+ s_3(chla) + s_4(SSTZ, SSTincrement) + s_5 (GVEL, gradGVEL)

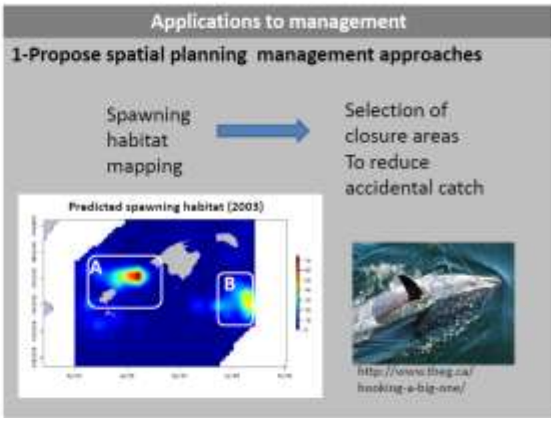


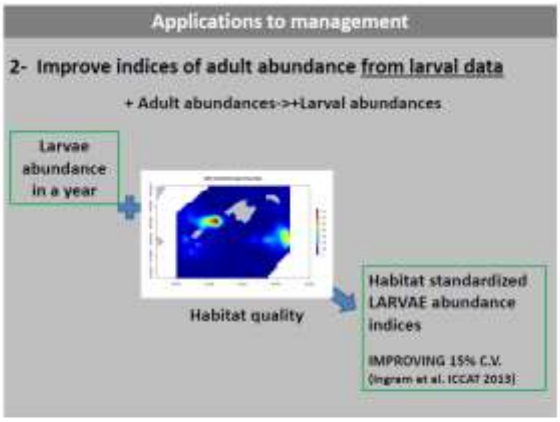
5 years of data

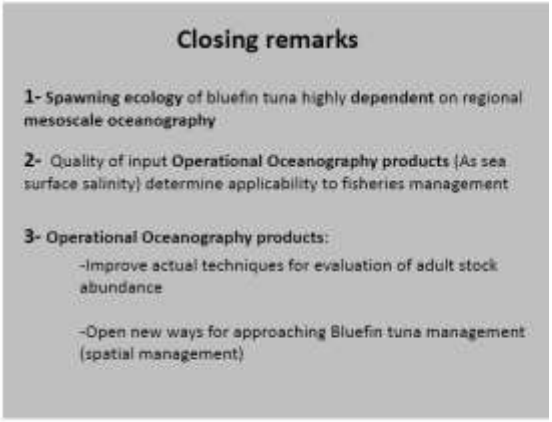
Significance p<0.001 (for all variables)

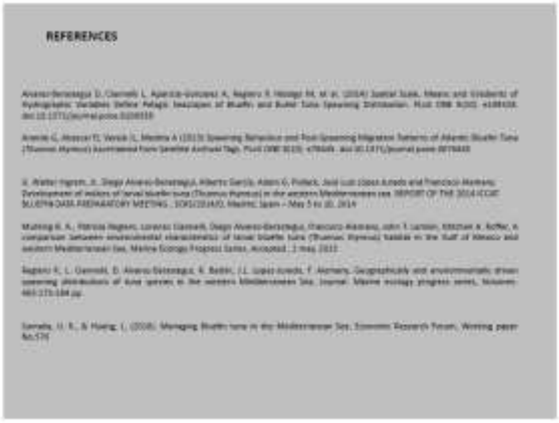
RESULTS: CROSS-VALIDATION




Applications to management
1-Propose spatial planning management approaches
Spawning habitat mapping
Selection of closure areas To reduce accidental catch
Predicted spawning habitat (2003)
A
B
http://www.theg.ca/hooking-a-big-one/


Applications to management
2- Improve indices of adult abundance from larval data
+ Adult abundances->+Larval abundances
Larvae abundance in a year
Habitat quality
Habitat standardized LARVAE abundance indices
IMPROVING 15% C.V.
(Ingram et al. ICCAT 2013)


Closing remarks
1- Spawning ecology of bluefin tuna highly dependent on regional mesoscale oceanography
2- Quality of input Operational Oceanography products (As sea surface salinity) determine applicability to fisheries management
3- Operational Oceanography products:
-Improve actual techniques for evaluation of adult stock abundance
-Open new ways for approaching Bluefin tuna management (spatial management)


REFERENCES

Presentation in Western Black Sea Pilot Case - Turbot example

STORYLINE:

Turbot in Bulgaria and Romania

STEP 2

Identify measures

Knowledge base: Database Measures Inventory

STORYLINE:

Turbot in Bulgaria and Romania

STORYLINE:

Turbot in Bulgaria and Romania

STEP 3

Check conditions warranting the use of adaptive management

1. Alternatives must be ecologically, economically, politically and legally feasible
2. Decision making needs to be iterative over time and possibly space to apply learning
3. Clear and measurable management objectives must be identified. Objectives need to be measurable, so progress toward their achievement can be assessed
4. Uncertainty can be expressed as a set of testable models to predict the effects of policy actions that are relevant to the objectives
5. A monitoring system must be established to reduce uncertainty and measure progress towards accomplishing management objectives

STORYLINE:

Turbot in Bulgaria and Romania

STEP 3

Forward looking analyses: assess policy success

Regional models: Scenarios to be modelled

Within PERSEUS sketches for future alternative scenarios within the Mediterranean and Black Seas have been developed.

This scenarios can be then turned into methods that can be as informal as a verbal description of system dynamics, or as detailed as mathematical expression of change, such as the models developed by the PERSEUS Project (soon available)

STORYLINE:

Turbot in Bulgaria and Romania

Design and implement a monitoring plan

Further readings: Marine Strategy Framework Directive Task Group 3 Report Commercially exploited fish and shellfish

It provides a Review of scientific literature and existing methods, including Fish stock assessment methods, Indicators and Monitoring programs.

Regional Assessments: Review of Methodological Standards Related to the Marine Strategy Framework Directive Criteria on Good Environmental Status

It will be available for 2016.

The system should allow improving the knowledge on the behavior of the Turbot stocks. Apart for this technical learning, as mentioned above, the plan should also facilitate cyclical assessment and revision of the targets, as well as the rest of the elements of the policy.

STORYLINE:

Turbot in Bulgaria and Romania

STEP 4

Draw up an implementation plan

Further readings: Gantt charts

STORYLINE:

Turbot in Bulgaria and Romania

STEP 5

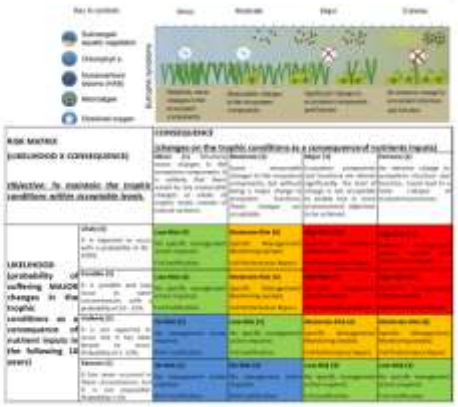
Evaluate on-going policy

Participation tools presented before.

Adjust to new upcoming issues

Establish corrective actions or adjustments to the policies in a simplified way according to the design and implementation process described in Steps 2, 3 and 4.

Presentation in Western Black Sea Pilot Case -Eutrophication example



STORYLINE:

Eutrophication in Bulgaria and Romania

STEP 3

Check conditions warranting the use of adaptive management

1. Alternatives must be ecologically, economically, politically and legally feasible.
2. Decision making needs to be iterative over time and possibly space to apply learning.
3. Clear and measurable management objectives must be identified. Objectives need to be measurable, so progress toward their achievement can be assessed.
4. Uncertainty can be expressed as a set of testable models to predict the effects of policy actions that are relevant to the objectives.
5. A monitoring system must be established to reduce uncertainty and measure progress towards accomplishing management objectives.

STORYLINE:

Eutrophication in Bulgaria and Romania

STEP 3

Forward looking analysis: assess policy success

Regional models: Scenarios to be modelled

Within PERSEUS sketches for future alternative scenarios within the Mediterranean and Black Seas have been developed.

This scenarios can be then turned into methods that can be as informal as a verbal description of system dynamics, or as detailed as mathematical expression of change, such as the models developed by the PERSEUS Project (soon available)

STORYLINE:

Eutrophication in Bulgaria and Romania

Design and implement a monitoring plan

Further readings: Marine Strategy Framework Directive Task Group 3 Report on Eutrophication

Regional Assessments: Review of Methodological Standards Related to the Marine Strategy Framework Directive Criteria on Good Environmental Status

It will be available for 2016.

The system should allow improving the knowledge on the behavior of the ecosystems. Apart for this technical learning, as mentioned above, the plan should also facilitate cyclical assessment and revision of the targets, as well as the rest of the elements of the policy.

STORYLINE:

Eutrophication in Bulgaria and Romania

STEP 4

Draw up an implementation plan

Further readings: Gantt charts

STORYLINE:

Eutrophication in Bulgaria and Romania

STEP 5

Evaluate on going policy

Participation tools presented before.

Adjust to new updating issues

Establish corrective actions or adjustments to the policies in a simplified way according to the design and implementation process described in Steps 2,3 and 4.

Presentation in Black Sea Commission- The need for AMP

PERSEUS

Adaptive Marine Policy Toolbox to assist Decision Makers in Env. Management

Black Sea Commission Meeting, Istanbul, 3 November 2014

M. Skourtos & A. Kontogianni

PERSEUS

The Value of our seas

World economy depends on OCEANS for 50% of its natural gas and 30% of its crude oil.

Raw materials and food of the marine environment had a market value of 1.6 trillion (US dollars1994).

Total economic value of ocean and coastal ecosystem 22.6 trillion (US dol) or 68% of the global GDP, whereas terrestrial ecosystems' worth is estimated at 10.7 trillion (Costanza et al 1997)

PERSEUS

POLICY MAKING

HOW TO MANAGE

SUCCESSFULLY THESE VALUABLE

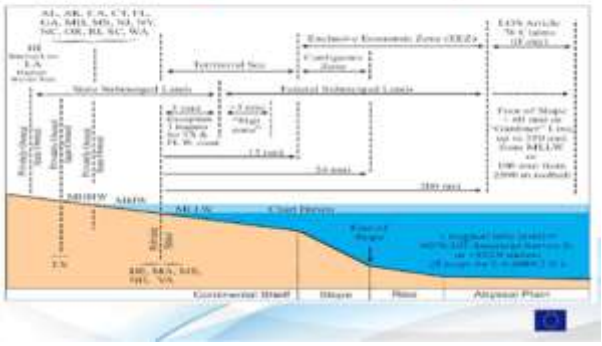
RESOURCES?

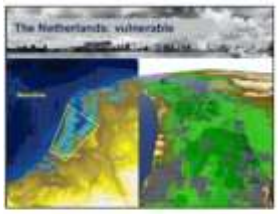
PERSEUS

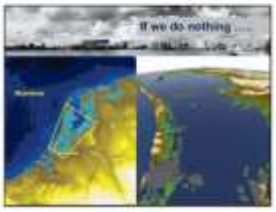
A complex situation

PERSEUS

Becoming even more complex







NOT IGNORING THE CLIMATE CHANGE

The Netherlands disaster case (Mollema, 2009).

The policy context

European Institutions

STAKEHOLDERS

National Institutions

SCIENTIFIC COMMUNITIES

POLICY MAKERS

Lobbies

How does a policy maker looks like under these circumstances?

PERSEUS

The SOLUTION

PERSEUS

AMP TOOLBOX

http://www.perseus-net.eu/en/about_the_apf_toolbox/index.html

THE QUESTION:

DOES AMP TOOLBOX IS TOO SOPHISTICATED FOR POLICY MAKERS?

DO WE WISH FOR A SCIENCE –BASED DECISION MAKING OR FOR A SIMPLE RECIPE ?

WHAT KIND OF POLICY MAKING WE LIKE FOR OUR FUTURE?

PERSEUS

AMP Toolbox development is the main GOAL within WP6 PERSEUS

Where we stand now in AMP Tool development?

T6.4 Implementations and lessons learned until September 2015

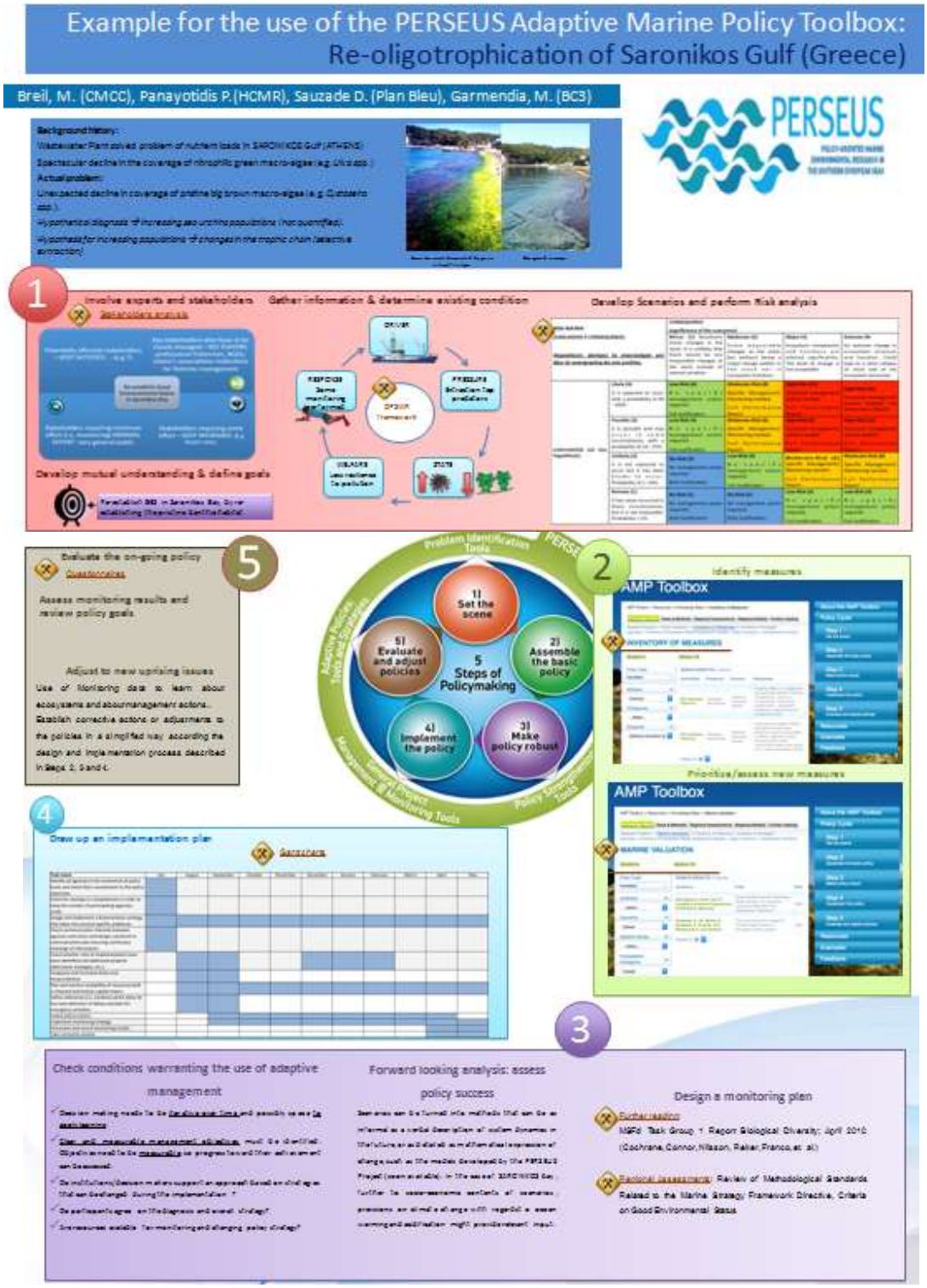
ISSUES:
-Difficult to quantify the effectiveness of policy measures and assess their cost.

PERSEUS

Adaptive Policy Framework Tool Box Structure

- HOW Guiding policymakers designing and implementing adaptive policies in 4 levels.

Appendix VI: Poster Saronikos Gulf -Aegean Sea



Appendix VII: Template for taking notes

Workshop on the Adaptive Marine Policy Toolbox

Palma de Mallorca, 30th October 2014

Take your notes here!

Name:

Job title:

Policy issue:

SCOPE
About the AMP Toolbox

AMP Cycle
Policy Cycle
Steps
Activities

RESOURCES
Knowledge Base
Tools & Methods
Regional Assessments
Regional models
Further reading

EXAMPLES

Appendix VIII: The leaflet used for dissemination

Special features of the Toolbox

- The PERSEUS AMP Toolbox provides a one-stop single location for policymakers to access all the resources and tools needed to develop and implement truly adaptive marine policies in the Mediterranean and Black Seas, in line with the EU's Marine Strategy Framework Directive. These resources are conveniently available in one place, alleviating the need for further online research.
- The AMP Toolbox is unique in that it provides a complete set of legal, scientific and predictive resources focused on MFSD descriptors in the Mediterranean and Black Seas. It aids in the planning, communication and implementation of flexible marine policies that will be effective over the long term.
- The resources in the toolbox are simple to use and although based on scientific data, they are presented in a user-friendly format specifically geared towards policymakers.

About PERSEUS

PERSEUS is a policy-oriented, marine research project aimed at supporting regional policymakers for the Southern European Seas. The PERSEUS project gathers new knowledge on our ecosystems, analyses the data with new tools, and puts forward recommendations that assist policymakers to take decisions based on solid scientific evidence. The PERSEUS project is unique in that it facilitates the incorporation of scientific data into innovative tools to help policymakers meet the objectives of the Marine Strategy Framework Directive (MSFD).

More information on PERSEUS

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Specific feedback to the AMP Toolbox

Didier Sauzade
Plan Bleu
Email: sauzade@planbleu.org
Or fill in our online survey on the PERSEUS website!

The PERSEUS project has received funding from the European Union's Seventh Framework Programme for research, technological development and demonstration.

Programme funded by the EU

PERSEUS

POLICY-ORIENTED MARINE ENVIRONMENTAL RESEARCH IN THE SOUTHERN EUROPEAN SEAS

Adaptive Marine Policy
AMP Toolbox

A decision support tool for policymakers developing marine environment policies in the Mediterranean and Black Seas

Developed by the EU-funded PERSEUS Project

About the Toolbox

The Adaptive Marine Policy (AMP) Toolbox has been especially developed to assist marine environmental policy-makers to achieve or maintain GES (Good Environmental Status) of coastal and marine ecosystems in the Mediterranean and Black Sea basins.

The AMP Toolbox consists of two major parts:

- the first part guides policymakers through a five-step process for developing adaptive marine environmental policies
- the second part provides resources such as thematic databases, models and examples that are particularly relevant to the Mediterranean and Black Seas.

The purpose of the toolbox is to make scientific findings and resources readily available in a user-friendly format and assist policymakers with formulating policies that will benefit the marine environment and all who depend on it.

Who is the toolbox targeted to?

The toolbox has been specifically designed for policymakers who are working on developing marine environment policies, including decision-makers at local, national, and regional authorities.

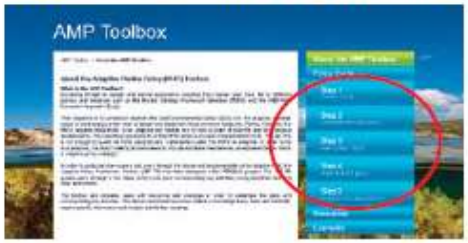
How is the toolbox useful?

The AMP Toolbox provides a wealth of information in one compact location to simplify the decision-making process, thus saving time and frustration.

Where can one find the toolbox?

The free online tool is located within the PERSEUS project website (www.perseus-net.eu) located under the section dedicated to POLICYMAKERS, titled AMP Toolbox.

Part 1: Five-step Adaptive Policy Framework



The first part of the toolbox consists of a five-step policy cycle that conforms to the process suggested by the Marine Strategy Framework Directive (MSFD), to implement 'Programmes of Measures'.

Step 1: **Set the scene** – How to define the policy aims and objectives by identifying potential problems and issues.

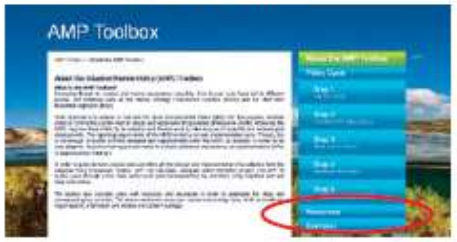
Step 2: **Assemble the basic policy** – How to draft possible measures to achieve the policy objectives.

Step 3: **Make policy robust** – How to plan for emerging issues and assemble draft policy measures into a more robust policy.

Step 4: **Implement the policy** – How to put policy goals into action, this includes planning and monitoring of the policy implementation process and outcomes.

Step 5: **Evaluate and adjust policies** – How to review and adjust policies and measures to address any emerging issues.

Part 2: Resources & Examples



The tools and resources included in the AMP Toolbox have either been collected or prepared by the PERSEUS project to help users draw up marine environmental policies dedicated to the Mediterranean and Black Seas. They include the following:

Knowledge Base

- **Policy Measures** – an inventory of policy measures that have been implemented by various countries. Measures include command-and-control instruments, economic instruments, social instruments and technical, technological or research-oriented measures.
- **Economic valuations** – a unique, first-ever review of major studies dedicated to the Mediterranean and Black Seas that provide economic valuations of the marine environmental services these seas provide.
- **Foresight exercises & Ecosystem Based Management** - an inventory of relevant studies.
- **Institutions & Legal instruments** – features the major legal instruments protecting the marine environment in the Mediterranean and Black Seas.
- **Research Projects** - profiles more than 100 EU environmental research projects focusing on the two seas.

Other Features

- **Tools and Methods** - an inventory of useful tools and methods used in the adaptive policymaking process.
- **Regional Assessments & Models** - regional assessments and models, developed by PERSEUS, dedicated to marine environmental issues in the Mediterranean and Black Seas.
- **Examples** - real cases of adaptive policymaking.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POLICY-ORIENTED MARINE
ENVIRONMENTAL RESEARCH IN
THE SOUTHERN EUROPEAN SEAS