

Adaptive Marine Policy (AMP) Toolbox

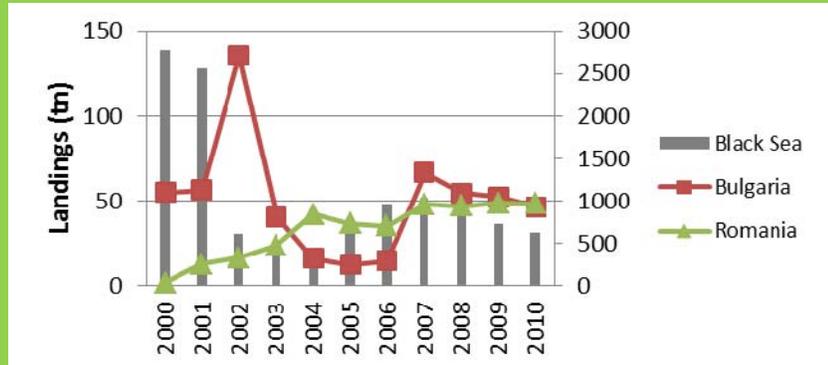
A one-stop repository of guidelines and resources to develop adaptive policies in the Mediterranean Sea

Over-exploitation of the Turbot in the Black Sea Adaptive policies, an opportunity to improve management

Problem:

The Turbot (*Psetta maxima maeotica*) in the Black Sea has suffered major changes concerning both its qualitative and quantitative structure and behavior.

Source: These changes are consequences: (i) directly through the fishing pressure; (ii) indirectly through the deterioration of the environmental conditions; (iii) of the lack of a Regional Fisheries



Management Organization to establish an effective collaborative mecha-

nism for the governance of shared and straddling fish stocks.

AMP Toolbox in brief

FOR WHOM: Policymakers.

WHY: Different European Directives and Regional conventions require the application of adaptive measures according to the *Ecosystem Based Approach (EBA)* to manage fisheries.

MAIN PAGE



STEPS

1. SET THE SCENE
2. ASSEMBLE THE BASIC POLICY
3. MAKE POLICY ROBUST
4. IMPLEMENT THE POLICY
5. EVALUATE AND ADJUST POLICIES

▼ What is this step about?
Why is this step necessary?
Who should be engaged?
Key activities
What should be the outcome?
Further reading

KEY ACTIVITIES

12 key activities to accomplish the 5 steps. Example:
"Involve experts and stakeholders"

▼ **Key questions**
Key actions
Resources

RESOURCES

- Knowledge base²
- Regional models and assessments¹
- Further readings¹
- Tools and methods²

1-Developed within PERSEUS project
2-Selected from different toolboxes or references

WHAT: A one-stop repository of guidelines and resources to develop *adaptive* marine policies in the Mediterranean and Black Seas. *Adaptive means:* (i) using scenario planning methods; (ii) stakeholder involvement; (iii) scientific knowledge; (iv) cyclical or formal review.

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

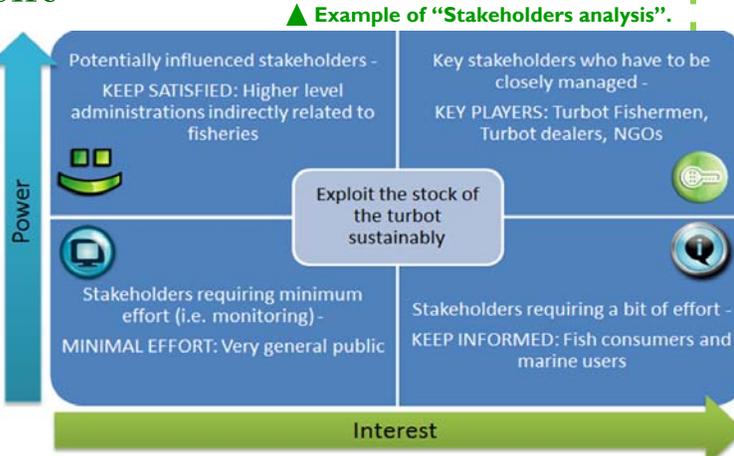
Look inside to see the usefulness of the AMP Toolbox and the key components to develop adaptive policies !

“For an effective delivery of the EBA, it is necessary to involve stakeholders in a committee that should include members Regional Fisheries Management Organization, National fisheries and wildlife agencies, nongovernment organizations, industry and fishermen’s groups, and others”

Step 1: Set the scene

(i) First step is to acknowledge that there is an activity (fishing) causing a problem (over-exploited stocks) with important impacts that merits further analysis or **“Gather information and determine existing conditions”** and enhanced management. For this purpose the **“DPSWR framework”** tool is proposed within the Toolbox.

(ii) Moreover, it is necessary to **“Involve experts and stakeholders” to make them understand the problem and create the “political will” to support potential actions.** The **“Stakeholders Analysis”** tool is suggested for this purpose.



(iii) Then, it is necessary to **“Develop a mutual understanding and define principles and goals”.** For example, to reduce the amount and impact of:

- To secure relatively high yields from exploitation of the turbot stock
- To guarantee the stability of the fishery as far as possible,



Step 2: Assemble the basic policy

Fisheries in general	Biological disturbance	Selective extraction species	Designation of protected areas for the generation of fish and shellfish
Fisheries in general	Biological disturbance	Selective extraction species	Ecolabelling for fisheries, MSC labeled fish, MAC certification for aquarium organisms
Fisheries in general	Biological disturbance	Selective extraction species	Establish remote sensing (satellite) system for observing and controlling fishing operations in open sea.
Fisheries in general	Biological disturbance	Selective extraction species	Individually Transferable Quotas (ITQ)
Fisheries in general	Biological disturbance	Selective extraction species	Installation of breakwaters for fish reproduction and growth
Fisheries in general	Biological disturbance	Selective extraction species	Discard ban on the most commercially important species, ban on high grading
Fisheries in general	Biological disturbance	Selective extraction species	Establish no-fishing areas or temporary/ permanent closures

(i) Then, it is necessary to **“Identify measures”** and develop a list of possible solutions, based on the policy’s objectives. For this purpose, the **“Measures inventory”** of the toolbox can be consulted.

(ii) Information on different appraisal approaches (e.g. IA, CEA, CBA, MCA) can be found within the **“Prioritize/assess new measures”** key activity. The **“Marine valuation database”** of the toolbox also contains valuations of different management strategies.

“Measures inventory” of the toolbox. Search fields: **DRIVERS**-Fishing; **PRESURES**-Biological disturbance; **IMPACTS**-Selective extraction species .

Indicative list of potential criteria to select policy options. Source: UNEP/ETB/2003/9 .

Policy parameter	Option review*	Ranking* (H,M,L)
Description		
Main policy		
Choices re: distribution of initial rights, ability to transfer, duration and caps		
Performance		
Environmental efficacy		
Complexity		
Cost of implementation and operation		
Anticipated side-effects		
Social: highly impacted groups (exposure, job loss, increased poverty)		
Short-term economic impacts		
Long-term economic impacts		
Trade and competitiveness impact		
Proposed flanking measures		
Feasibility		
Institutional capability to implement?		
Powerful opposition?		
Other factors of interest/concern		

Example:

Possible **management alternatives** could range from a full moratorium on fishing, to very high quotas allocation.

For example, the harvesting rule could be flexible in order to calculate annually the allowable quotas depending on the monitored spawning biomass.

Control provisions (i.e. special rules concerning fishing permits, vessel monitoring systems, effort, and catch cross-checks) and **financial assistance** (if the fishery is closed or the biomass level falls below “x” level) should be included in the **new management plan**.

“One of the most important thing is to discuss and define the right set of criteria against the different options will be assessed”

“Models could predict different responses of the stock to fluctuating fishing pressure and environmental conditions”

“Monitoring protocols could involve annual surveys of the spawning stock and of the environmental conditions”

Step 3: Make the policy robust

Policy measures must be assembled into a robust policy against future conditions.

(i) For this purpose, it is necessary to identify key factors affecting policy performance and the way these factors might evolve in the future (i.e. scenarios).

(ii) Additionally, monitoring is a key component to evaluate if targets are achieved and trigger policy adjustments; and, to facilitate information and learning after decisions.

The European Commission, for example, through decision 2010/477/EU has proposed different attributes and indicators to assess whether targets are achieved or not.

Scenario	Fisheries production
Business as Usual	Same
Convergence with proactive environmental management	Slow increase
Convergence with reactive environmental management	Same/Slow
Heterogeneity with proactive environmental management	Same/Slow decrease
Heterogeneity with reactive environmental management	Slow decrease

▼ Direction of change for Fishing sector for the five scenarios developed within PERSEUS project for the Black Sea (2030).

Identify CONSTRAINTS!

1-Lack of enough scientific knowledge and information available to: (i) define the age and size distribution indicative of a healthy stock; and, (ii) to derive the spawning stock biomass (SSB) as the SSB corresponding to MSY are unknown for most stocks. 2-Lack of a legal standards/ thresholds.

Criteria 3.1-Level of pressure of the fishing activity
 3.1.1-Fishing mortality
 3.1.2-Ratio between catch and biomass index (secondary indicator)

Criteria 3.2-Reproductive capacity of the Stock
 3.2.1-Spawning Stock Biomass 3.2.2-Biomass indices (secondary indicator)

Criteria 3.3-Population age and size distribution 3.3.1-Proportion of fish larger than the mean size of first sexual maturation
 3.3.2-Mean maximum length across all species found in research vessel surveys
 3.3.3-95 % percentile of the fish length distribution observed in research vessel surveys
 3.3.4-Size at first sexual maturation, which may reflect the extent of undesirable genetic effects of exploitation

Step 4: Implement the policy

Implementing a policy, does not only consist on getting the legal text ready, but also ensuring enforcement and commitment from all actors. Accordingly, “Draw up an implementation plan”, planning the actions necessary for putting the policy into practice is highly important.

Task name	July	August	September	October	November	December	January	February	March	April	May
Designate and Formalize Roles and Responsibilities											
Designate stakeholder to take into account											
Develop an initial assessment of the state of the Turbot's stock											
Identify drivers and consequences of actual state of the turbot											
Review environmental legislation and other requirements											
Gain management approval and define the scope of the policy											
Define and prioritize measures											
Assess policy success looking for future uncertainties											
Identify and Develop Operational Controls / Emergency Plans											
Implement the planned policy											
Implement monitoring strategy											
Document and record monitoring results											
Take corrective actions											

Step 5: Evaluate and adjust policies

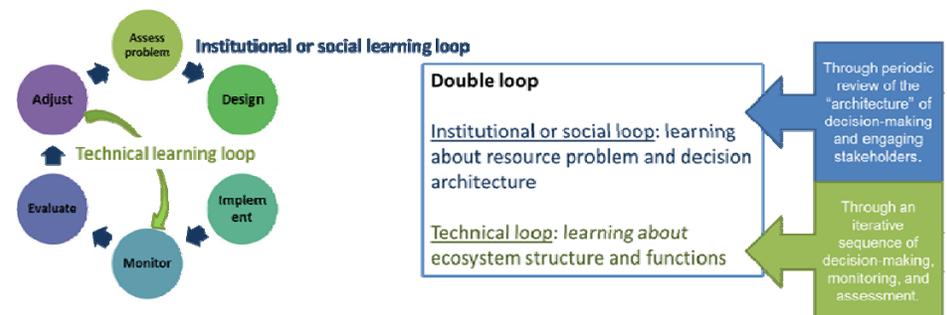
“Stakeholders reconvene to re-evaluate objectives and models (and their underlying hypotheses) in accordance with what has learnt during the iterative phase”

Finally, evaluation and adjustments are key aspects of adaptive policies. This step involves investigating whether and to what extent the policy is effective and how much of the problem has been addressed (“Evaluate ongoing policy”) and what more needs to be done (“Adjust the policy”).

Evaluation: Data recorded with monitoring plan lead to knowledge accumulation about the resource and its environment; and, increase confidence of the models or the future scenarios.

Apart for this technical learning, the plan should also facilitate cyclical assessment and revision of the targets, as well as the rest of the elements of the policy (institutional learning).

Adjustments: Can be performed following briefly the processes described in Steps 2,3 and 4; or the whole cycle for fundamental changes.





PERSEUS

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Policy-oriented marine Environmental Research for the Southern European Seas (PERSEUS) is a research project that assesses the dual impact of human activity and natural pressures on the Mediterranean and Black Seas. PERSEUS merges natural and socio-economic sciences to predict the long-term effects of these pressures on marine ecosystems. The project aims to design an effective and innovative research governance framework, which will provide the basis for policymakers to turn back the tide on marine life degradation.

*“Funded by the EU under FP7 Theme
“Oceans of Tomorrow” OCEAN.2011-3
Grant Agreement No. 287600 “*

ABSTRACT

To operationalize the design and implementation of adaptive policies and translate adaptive management into decision tools according to the Ecosystem-Based Approach (EBA) to the management of human activities impacting marine and coastal ecosystems, the Adaptive Marine Policy (AMP) Toolbox has been developed.

The objective is to provide policymakers with the necessary framework and resources to develop environmental policies and specifically adaptive policies. Key components and mechanisms that define adaptive policies include: (i) forward looking analysis to discover robust policies across multiple future scenarios; (ii) the translation of cross-disciplinary and integrated scientific knowledge; (iii) a process where management contributes to learning; and, (iv) the engagement of the broader stakeholder communities. In fact, transparent decision making which is inclusive of stakeholders at all stages and enjoys high levels of cooperation and coordination is criti-

cal to meaningful development and implementation of the EBA.

One of the most important coastal marine activities in the Black Sea in terms of employment and gross value added is Fishing. Though, the lack or ineffective management strategies of this activity can lead to important ecological and socio-economic impacts.

Accordingly, the objective of this factsheet is to: (i) give insight into the AMP Toolbox using the case of the Turbot’s overfishing in the Black Sea as an example; and, (ii) to underline the main components of an adaptive policy-making process, according to the EBA.

