

## “Together for the Mediterranean”

### Report of the 2<sup>nd</sup> Integrative Working Group (IWG) Meeting Tirana, October, 14, 2010

#### *Developing an Integrative Methodological Framework for Coast, Water and Biodiversity Management<sup>1</sup>*

#### **Background information**

The aims of the meeting were the following:

1. To explore further the **convergence** of the methodologies for management of groundwater/aquifers, water resources, biodiversity and the coast, including climate change as a cross-cutting issue.
2. To continue developing **guidelines** for an integrative methodological framework which will enhance integrated approach, improve synergy in planning and delivery of convergent solutions to water resources, biodiversity and coastal management, to be tested in the two pilot areas and national ICZM strategies.
3. To secure universal value of solutions to be offered by the IMF for enhanced integration among the sectors and for creation of consistent policy solutions for the sustainable coastal development.

#### **Attendance:**

##### UNESCO-IHP:

Mr. Jose Luis Martin Bordes, IHP Project Co-ordinator  
Mr. Bo Appelgren, consultant, methodology specialist

##### PAP/RAC:

Ms. Marina Marković, Programme Officer;  
Mr. Marko Prem, Director a.i.;  
Ms. Daria Povh Skugor, Programme Officer;  
Mr. Fabbio Badallamenti, Consultant, Biodiversity Planning methodology specialist;  
Mr. Anil Markandya, Consultant, Climate change methodology specialist;  
Mr. Brian Shipman, Consultant, IWG Team Leader;

##### TB ICZM Plan:

Zamir Dedej, NTL for Albania  
Marina Marković, NTL for Montenegro

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<sup>1</sup> Strategic Partnership for the Mediterranean Large Marine Ecosystem (Med Partnership)  
Regional Component: Implementation of agreed actions for the protection of the environmental resources of the Mediterranean Sea and its coastal areas  
Component 1. Integrated approaches for the implementation of the SAPs and NAPs: ICZM, IWRM and management of coastal aquifers - Sub-component 1.2. ICZM

**GWP Med:**

Mr. Dimitris Faloutsos, Programme Co-ordinator for South-eastern Europe  
Mr. Mr. Michael J. Scoullas, Chairman

Because of the weather conditions GWP Med participants were unable to arrive to Tirana for October 14. However, participants arrived October 14 evening, so that separate meeting was held with PAP/RAC representatives on October 15<sup>th</sup>, prior to the Joint Inception Meeting.

**PMU:**

Mr. Ivica Trumbić, MedPartnership Project Manager, was unable to reach Tirana, because of the technical problems in Athens.

**Dates and venue:**

October 14, 2010.

Institute for Nature Conservation in Albania (INCA) premises in Tirana.

Agenda of the meeting is attached as Annex I.

**Major topics discussed and meeting results:**

1. Mr. Dedej opened the meeting and welcomed the participants on behalf of the INCA. Mr. Prem presented the objectives, agenda and the background of the meeting. Mr. Prem also introduced the work of the Integrative Working Group for the new members.
2. Mr. B. Shipman introduced the process of creation of the Integrative Methodological Framework, its roadmap and opportunity for its testing during the preparation of the ICZM Plans.
3. Mr. Appelgreen opened his presentation on convergence of groundwater and ICZM planning by introducing the management issues for the coastal groundwater. He pointed out the importance of the ecosystem-based management approach as well as using top-down and bottom-up approaches accordingly. He presented his view on divergencies and constrains and on the convergencies and opportunities. Finally, he concluded that for them the first objective was protecting our drinking water supply.
4. Mr. Badalamenti presented methodology and issues for convergence of biodiversity planning and ICZM planning. After defining biodiversity and recalling of the history of biodiversity planning he pointed out the need to integrate biodiversity into broader social and economic agendas. He presented the steps for biodiversity planning as well as few examples of using some general conservation planning tools, like SPOT analysis, MARXAN analysis and scenarios obtained by using such tool. Finally, he pointed out that there were no major divergence and that convergence was straightforward. However, necessary precondition for all of our methodologies was – good governance.
5. Mr. Anil Markandya introduced methodological considerations for introducing CC as a cross cutting issue. He pointed out that a number of ICZM actions needed to be modified in order to incorporate CC considerations. Having in mind that the CC adaptation generally involves much longer time horizons than most ICZM actions, he proposed to take a long term view for the coastal activities that last a long time. SEA might provide a tool for integrating both horizons. He provided an overview of how CC affected each of the stages of the ICZM planning process and proposed how to overlay the CC to the existing procedures. He stressed that the risk analysis is needed at the earlier stage. He pointed out that in several areas of action CC modifies the design of the intervention, in particular in design of coastal roads, tourism developments, hydropower developments and construction of buildings. He mentioned the good experience with using DIVA model. Finally, he invited the members of the IWG to get broad agreement on scenarios, including those on which CC impacts are

based; to build links between ICZM options and CC impacts; to consult with stakeholders on options for adaptation and ICZM based on three scenarios; to evaluate adaptation and ICZM options using a range of tools allowing for uncertainty; to monitor data and knowledge on CC and reevaluate where appropriate.

Conclusion 1: Participants agreed on introducing Risk Assessment at the establishment stage of the planning. Participants agreed with the possibility to use SEA as a tool for reconciling short and long term horizons.

6. In the discussion that followed, Mr. Markandya proposed to construct a data base of broad parameters of CC to be taken into account. Mr. Appelgreen proposed in order to come to cost effectiveness to take into account three things: technology and tools to grasp uncertainties of CC; autonomous adaptation; and community resilience to CC. Mr. Markandya recommended that policy makers should at least be informed about possible impacts of CC as well as of cost effectiveness of certain responses. The high value of the improvement of information has been pointed out as an extremely high cost effective activity. Participants agreed that setting up of an early warning system could be an excellent result for this type of projects. Mr. Markandya pointed out the need to listen to the commercial sector, insurance industries and to let the risk pass on to them. Mr. Badalamenti pointed out the importance of the MPA networks in the context of CC, but also stressed the possible repercussions of the rising acidity of the oceans. He concluded stating that more pristine area is more resilient it is. Mr. Markandya agreed that weakest area when linking adaptation to CC with cost-effectiveness is the biodiversity. Also, it is the least flexible because it was built on the base of the territory. Mr. Markandya pointed out the importance of the population movements, migration patterns are of high importance for ICZM, maybe even more important than economic growth rate. He explained that at the case of CC IPCC scenario will specify regional numbers, while it is much more difficult to obtain information for the lower territorial level. He described experience from Basq region and from Slovenian Debeli rtič zone. Although the governments usually do not have forecasts for more than 5 years, he proposed to adapt national scenarios to draw on IPCC scenarios and to go for longer period of time.
7. Mr. Shipman presented the discussion paper "Towards an IMF" aiming to identify the key areas that the IMF would need to address to ensure that the integrative approach enhances and adds value to the sectoral approaches within the ICZM framework. He presented six stages of the planning process, pointing out that the ICZM Plan itself is not the end of the process but just the end of the beginning. He pointed out that out from the "architects" of policy design role of our team members become "facilitators" of policy implementation. Finally, he concluded pointing out that delivery includes catalyzing change through positive action.
8. The discussion was open on preparing guidance on defining boundaries within the IMF. Mr. Prem pointed out that at the recent meeting during the "Coast Day" celebration in Portorož it was requested not to be too prescriptive with the guidance for defining boundaries, since this definition should be adaptive to the circumstances. Regarding other common points of departure for all the sectors Mr. Markandya pointed out the governance and the socio-economic issues, reconciling time scales as well as the bottom-up and the top-down approaches.
9. Mr. Markandya presented ideas on establishment of the common set of data. He pointed out that most of the data are scenario based. While IPCC has 14 scenarios, for the purpose of the ICZM plan the 3 scenarios should be selected: one with the high growth rate and low climate mitigation and with the high climate impacts; one with medium growth rate, medium climate mitigation and medium climate impacts; and one with the low growth rate and high climate mitigation and with the low climate impacts. For each scenarios following data should be given:
  - GDP growth/GHG control policies
  - Sea level rise/sea temperature

- Rainfall (by month)
- Extreme events
- Air temperature

All of the above mentioned drivers will have an impact on: water (shortages); biodiversity (marine & terrestrial); agriculture, forestry, built environment, infrastructure, tourism, public health,...

In order to be able to use these data we need to use models to downscale on 5x5 km level, or even 1x1 km.

Management options will depend on the following:

- How do we represent uncertainty?
- Spatial disaggregation (what level, how much)
- Draw on existing data sets (etc. SPA/RAC studies)
- Impacts of mitigation on the coastal zone
- Private sector decisions

Mr. Martin pointed out that as regards groundwater/aquifers key issue in the coastal zone – saltwater intrusion - two major reasons were identified: overexploitation and sea level rise. Recommendations for managers will contain measures against the first, and getting ready for the second.

10. Brainstorming session on indicators was moderated by Mr. Shipman. He pointed out three main groups of indicators: governance, process and outcome indicators. As proposed by UNESCO, DPSIR methodology is commonly understood and provides an appropriate unifying framework. When defining drivers in the coastal zone the participants listed: climate change, economic development, demography (density, birth rate, migrations), legislation, policy (EU integration in particular), etc.. As regards climate change and indicators, Mr. Markandya pointed out that as for the CC, pressure indicators should include economic development (not just for CC) among others; state indicators should include governance, capacity as well as specific CC-related physical ones; impacts indicators - several CC indicators should be added; and response indicators - several CC indicators should be added.

Conclusion 2: The following workplan for the IWG was agreed:

- |  |                           |
|--|---------------------------|
| 1. Complete and analyse sectoral submissions                           | October 31 <sup>st</sup>  |
| 2. Adopt local ICZM Process as basis for pilot projects                | October 31 <sup>st</sup>  |
| 3. Agree stakeholder representation and local governance arrangements  | November 7 <sup>th</sup>  |
| 4. Propose and agree strategic vision, generic and sectoral objectives | November 7 <sup>th</sup>  |
| 5. Propose and agree indicator set for IMF                             | November 14 <sup>th</sup> |
| 6. Review sectoral tools and technologies                              | November 21 <sup>st</sup> |
| 7. First draft   | December 1 <sup>st</sup>  |

In addition, it was agreed that additional effort should be placed in finalising the “Establishment” part of the document ASAP.

11. Finally, the workplan for the national teams and expectations from them were discussed. Ms. Marina Marković from PAP/RAC was appointed as International Team Leader for the project. The proposal of the workplan is given in Annex II. Mr. Dedej pointed out the importance of a good start, as well as difficulties to change the pace if the start wasn't that good. Also, he pointed out the time needed to take into account local demands properly. Also, he mentioned the importance of involving EU Delegation in Albania. Mr. Shipman agreed and emphasised that besides assistance with compliance for Albania and Montenegro, EU is a potential investor of the priority investments that would be proposed within the ICZM Plan.

Conclusion 3: It was agreed that the first output to be submitted, Scoping and Foundation Report is to be finalised by December 2010. It was agreed to postpone the 1<sup>st</sup> harmonisation meeting. Also, it was agreed that Ms. Marković (PAP) would send an outline for the requirements of the Scoping and Foundation Report.

12. Mr. Prem expressed his gratitude to INCA, UNESCO-IHP and to the consultants for attending the meeting, for their valuable contributions and fruitful discussions. The meeting was closed at 18:00 p.m. Separate meeting with the GWP representatives was announced.
13. The day after a separate meeting was held with the representatives of GWP-MED. PAP/RAC representatives (Mr. Prem, Ms. Povh Škugor, Ms. Marković and Mr. Shipman) participated to this meeting, together with the GWP-MED representatives (Mr. Scoullos and Mr. Faloutsos). GWP-MED representatives were briefed on the discussions held the day before.
14. Key issues discussed were the following:
  - a) The project area: In order to achieve the maximum degree of synergy between ICZM and IWRM in the study area, the definition of boundaries was examined for IWRM ; ideally the entire catchment area should be taken into account. However, in the case of Buna/Bojana river the exit from the Shkoder/Skadar lake could be used as a starting point, considering collectively the lake as an “input” to the river, taking into account the administrative and political realities. GWP-Med will collect and use whatever additional elements from the area upstream will be needed for the better understanding, analysis and evaluation of the situation in the system. Similarly, PAP/RAC also will use whatever elements may be needed from the marine part of the system for the full and thorough coverage of the study area. However, impacts of activities taking place in coastal zone to the upstream of the river basin and vice versa should be jointly taken into account regardless of being part of the direct project area or not. They belong to the area of influence and should be studied adequately.
  - b) Integrating ICZM and IWRM plans: The GWP-MED representatives reopened the question on whether for the Buna/Bojana river one plan would be made or two, namely an ICZM and IWRM plan. Mr. Scoullos pointed out that having at least 80 % of common system in this case a joint project will be of great potential for application elsewhere; therefore he proposed to strive to make the best of this rare opportunity. Also, this would reduce duplications, better coordination within national team could be achieved, the use of the same Steering Committee and many other opportunities created. According to the obligations towards GEF two documents have to be prepared and submitted. However, as the project area is almost the same, the stakeholders and institutions involved will be the same and the teams working on the ground could be the same. Therefore, it was proposed that the output could be one document (under joint title), with common nucleus and probably some chapters of specific different elements for ICZM and IWRM (e.g. some specific recommendations for water allocation in different sectors etc.). For example, an ICZM Plan will be composed of elements related to natural resources, aquifers, biodiversity and activities using them such as agriculture, tourism, urban, transport, waste management and alike, depending on the common issues of transboundary nature. Both partners (GWP and PAP) will have to justify to GEF that their output is integrated within the joint plan (for UNESCO’s part there will be no doubt). Details on how this can be done, the status of such a joint document, and how the plan will be presented will be specified during the course of the project. Time frames for both plans should be coordinated as well. The IWRM time-frames are frequently medium and long term, taking into account eventual changes to occur in 10-20 years. In IWRM the shorter term issues are often clarified under a subset e.g. “strategic action plans”, while main IWRM interventions are considered as “long term planning”. GWP should do its best to streamline its workplan with the time frame proposed by PAP/RAC where UNESCO activities and those related to biodiversity and climate change are already harmonised.

- c) Risk assessment: Participants discussed the risks of different interest of two plans, but when trying to identify the different interests it was agreed that most of the issues were common for both plans. As one example, the issue of floods and their relation with the dams was pointed out. Most of the upstream dams if in risk pose a serious threat to the coastal zone. Although these dams are not in the project area, they are the question of national priority and should be dealt with at the high government level. Therefore, it was agreed that this issue should be tackled in the Risk Analysis, at the very early stage of the planning process.
  - d) Composition of national teams: To best coordinate both activities the national team would be one for both plans, and as part of the ICZM plan also the consultant to cover aquifers from UNESCO will be included in addition to the consultants to cover biodiversity, climate change and other issues of transboundary nature if so needed.
  - e) Share of resources: If one output will be produced, the resources for it should be shared accordingly. This issue requires harmonisation between the partners, so that the synergies can be created (sharing the costs of joint meetings with stakeholders, share of expenses for national team leaders and other consultants if involved in preparation of both plans, paying the consultant(s) to cover surface waters and alike, securing resources for providing support during implementation, etc.).
15. Several important issues remained to be discussed and agreed upon in detail, such as the harmonisation of the timing of the PAP/RAC and GWP-MED activities in the project zone, joint Steering Committee, harmonisation of the 2 budgets in case of the joint output, level of coordination, level and format of partners contribution, distribution of the workload, depth of the stakeholder involvement – harmonisation of PAP/RAC and GWP-MED requests etc. For instance the issue of stakeholders involvement was discussed. GWP-Med is willing to undertake a larger part of stakeholders identification and moving ahead provided that in other areas PAP/RAC will take the lead. Therefore, it was proposed that an operational meeting should be organised for the two partners, as soon as possible. It was made clear that the interests of UNESCO will not be undermined or neglected during such coordination of ICZM and IWRM plans.
16. As regards 1<sup>st</sup> harmonisation meeting, it was proposed to organise it back to back with the stakeholder consultations under the Drin Dialogue process, that GWP-MED is coordinating in cooperation with the UNECE, in the last week of February in Podgorica, instead of Tirana in December 2010, since more time should be given to the Buna/Bojana ICZM Plan team for its preparation.
17. Mr. Prem expressed his gratitude to GWP-Med and to the consultants for attending the meeting. The meeting was closed at 15:00 p.m.

Presentations from the meeting are attached as Annex III to the report.

## Annex I

### Agenda of the meeting

#### THEORETICAL APPROACH

1. Opening of the Meeting (Mr. Z. Dedej, INCA and Mr. M. Prem, PAP/RAC) 9:30 - 9:40
2. Background and Meeting Objectives (Mr. M. Prem, PAP/RAC) 9:40 - 9:50
3. Introducing the process (Mr. B. Shipman, PAP/RAC) 9:50 – 10:00
4. Methodology and issues for convergence of groundwater/ aquifers planning and ICZM planning (UNESCO-IHP) 10:00 -10:15
5. Methodology and issues for convergence of biodiversity planning and ICZM planning (Mr. F. Badalamenti) 10:15 – 10:30
6. Climate change as a cross-cutting issue (Mr. A. Markandya) 10:30 – 10:45
7. Discussion on first impressions 10:45 – 11:00

#### COFFEE BREAK

11:00 – 11:15

8. Findings and reflections (Mr. B. Shipman, PAP/RAC) 11:15 – 11:30
9. Feedback discussion 11:30 – 13:00

#### BREAK FOR LUNCH

13:00-14:30

#### PRACTICAL APPLICATION

10. Choosing common set of data for assessing the impacts of climate change (Mr. A. Markandya) 14:30 – 15:30
11. Brainstorming session on indicators 15:30 – 16:30
12. Conclusions on:
  - Overall goal
  - Time horizons
  - Boundaries
  - National teams
  - Other16:30 – 16:45
13. Identification of issues still open for discussion, if any and discussion (PMU, all participants) 17:45 – 18:00
14. Concluding remarks and closure (PAP/RAC) 18:00

#### SEPARATE MEETING WITH GWP REPRESENTATIVES (October 15<sup>th</sup>)

15. Meeting of PAP and GWP representatives 13:00 – 15:00

## Annex II

### Workplan

1.2 Integrated Coastal Zone Management												1.2 Integrated Coastal Zone Management												1.2 Integrated Coastal Zone Management														
2010												2011												2012					2013					2014				
J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	I	II	III	IV	I	II	III	IV	I	II					
<b>1.2.2</b>																																						
1.2.2.1 ICZM Plans to demonstrate ICZM approach, tools and techniques in selected areas																																						
a) ICZM Plan in TB demo area of high environmental sensitivity (Montenegro and Albania)																																						
INITIATION																																						
Expert meeting (Podgorica)		Expert meeting (Tirana)		Joint Inc.meet.(Tirana)		ESTABLISHMENT		1 <sup>st</sup> H. (Tirana)		VISION & OBJECTIVES		ANALYSIS		2 <sup>nd</sup> H.M.(Ulcinj)		PLAN		Presentation conference		Final CZM Plan		IMPLEMENTATION																
Initial Reference Document		Scoping & Foundation Report		SEA Initiation		Communication Strategy		VISION STATEMENT		ANALYSIS		Present state & potential future		Final ICZM Plan																								
MEETING M. Repo. M. Repo.		M. Repo. M. Repo.		M. Repo. M. Repo.		M. Report		M. Report		M. Report		M. Report		M. Report		M. Report		M. Report		M. Report		M. Report																

OUTPUTS LEGEND	DUE DATE
<b>INITIAL REFERENCE DOCUMENT</b>	March 2010
Drivers & Pressures Institutional, legal & stakeholder analysis, Functional Mapping, Boundary definition Governance Mechanisms, Work Plan, Technical Team	December 2010
SEA	January 2011
<b>COMMUNICATION STRATEGY</b>	February 2011
<b>VISION STATEMENT:</b> Stakeholder Analysis; Review key problems and issues; Vision and Objective	April 2011
the future conditions: Identifying Alternative Scenarios, Option, Tools	December 2011
<b>ICZM PLAN</b>	December 2012
<b>MEETINGS TYPE</b>	
Harmonisation meeting: the widest audience meetings to which besides entire team and the key stakeholders, GEF project and PAP/RAC personal and international consultants also attend / STATUS MEETINGS	
Seering Committee meeting	
STAKEHOLDER CONSULTATIONS: stakeholders meeting on a regular basis / STATUS MEETINGS	
TB TEAM MEETING: 2 national teams meeting together on a regular basis / STATUS MEETINGS	
TEAM MEETING: national team meeting together on a regular basis / STATUS MEETINGS	
NATIONAL TEAM EMERGENCY MEETING: national team meets together on an ad-hoc basis /PROBLEM SOLVING MEET	
SECTORAL MEETING: sectoral experts meet together on an ad-hoc basis / PROBLEM SOLVING MEETING	
STAKEHOLDER CONSULTATIONS: selected stakeholders meeting on an ad-hoc basis / PROBLEM SOLVING MEETING	



# Annex III

## Integrative methodological framework B. Shipman

PRIORITY ACTIONS PROGRAMME

### Towards an Integrative Methodological Framework (IMF)

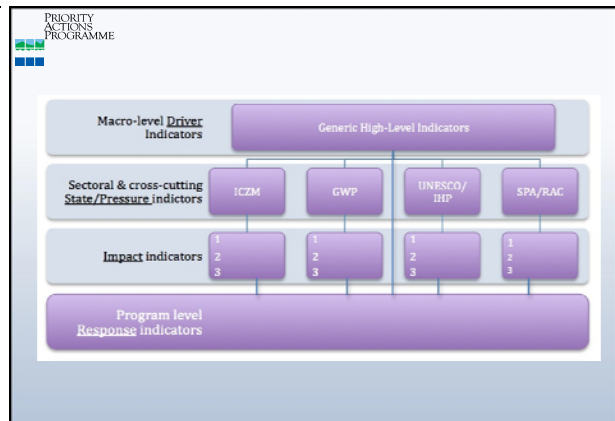
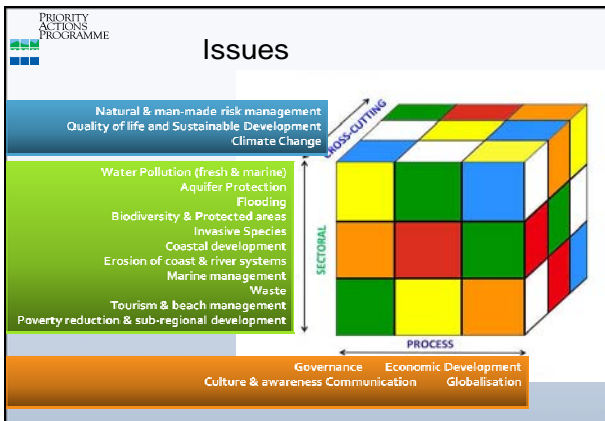
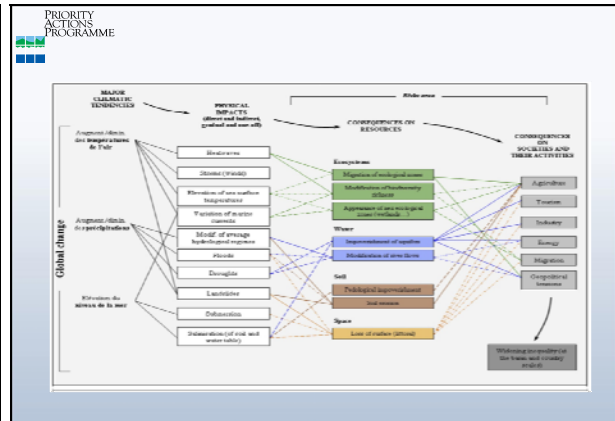
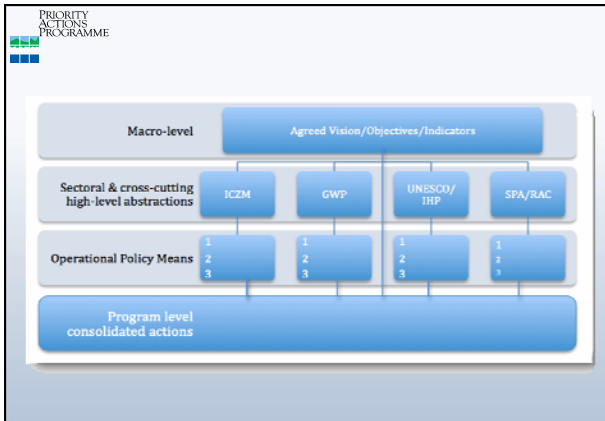
Brian Shipman  
Consultant to PAP/RAC

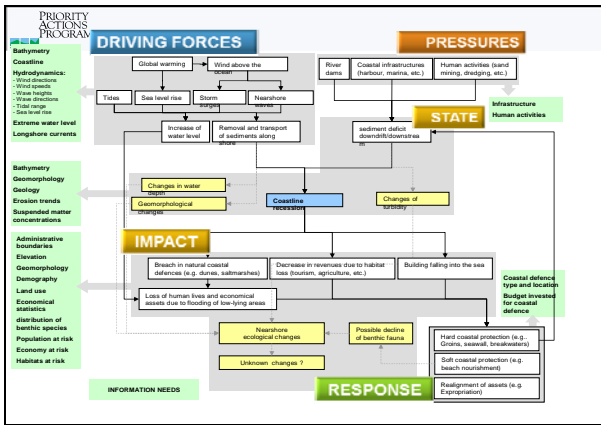
PRIORITY ACTIONS PROGRAMME

### IMF proposed objectives

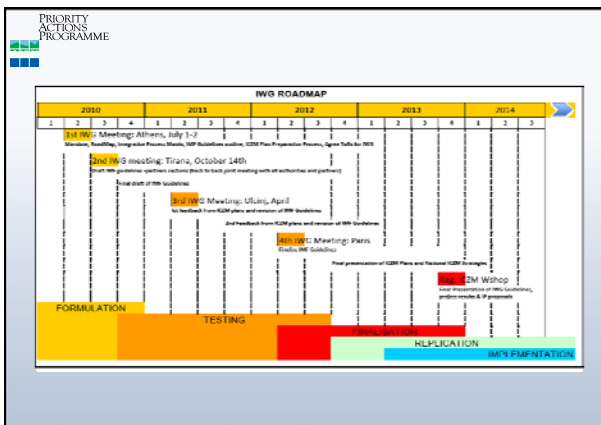
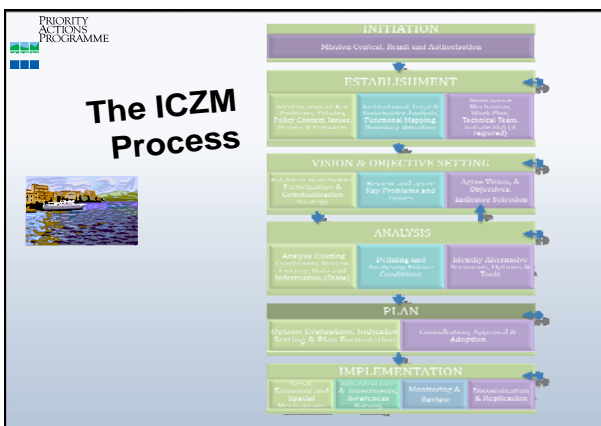
Working effectively together in a common space and time

1. pursue coherent multiple policy goals at the same time
2. pursue coherent multiple policy goals in the same or overlapping space
3. ensure that policy instrument mixes are consistent
4. ensure that policy instrument mixes mutually supportive in the pursuit of policy goals
5. produce policy outcomes appropriate to specific coastal zone problem contexts
6. add value to individual approaches such that 'the whole is greater than the sum of the parts' – synergy.
7. achieve a shared, efficient and effective use of limited human and logistical resources
8. respond effectively to the more dynamic and uncertain resulting from climate change and development
9. to achieve shared ownership by the sectors through better coordination and integration of the planning process





Top-down: key properties of the ecosystem?	What are the goals that relate to the ecosystem?	Develop specific objectives related to ecosystem properties and components	Identify "activity-sensitive" indicators to report on impacts	Validate selected "activity-based" indicators
Combined Top-down & Bottom-up EBM critical issues	Identify overall issues in the coastal zone	Develop specific objectives	Select governance, ecological and socio-economic interventions and indicators	Suite of indicators: a. Property-based: Groundwater indicators, Legal/administrative governance indicators b. Activity-based: Socio-economic indicators
Bottom-up: human activities of concern/ that have significant impact?	Review and prioritize human activities	Develop management objectives to reduce impacts and improve ecosystem health	Identify a list of ecological indicators to monitor ecosystem properties and impacts	Validate selected "property-based" indicators



**Thank you**

Brian Shipman  
Consultant to PAP/RAC

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# Methodology and issues for convergence of groundwater aquifers planning and ICZM planning

B. Appelgreen, UNESCO-IHP

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

## Convergence of groundwater and ICZM planning

### UNESCO/IHP

[Re: Groundwater management and planning systems: methodology & Issues – UNESCO/IHP, July 2010]

*Groundwater issues, methodology and indicators in integrated ICZM action oriented plans*

*Groundwater governance and socio-economic/ecological indicators approach*

(1) Divergences  
(2) Convergences

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

### Management Issues: Coastal Groundwaters

- Sustainability of coastal water supplies (MDG)
- Saltwater intrusion with water and land salinisation from over-abstraction and drought – CC; sea level rise
- Threats to GDE:s (Ramsar 1971/Valencia Decl. 2002) coastal wetlands and biodiversity
- Groundwater and LBS pollution/nutrient transportation into the coastal/marine waters (LBS Protocol)
- International pressures on shared gw/aquifer water resources; UNGE Resolution Dec 2008 Draft Articles to the Law on Transboundary Groundwater
- Land subsidence and sea level rise – under-flooding, water-logging, salinization, AND

Coastal Groundwaters as a drought resilient supply and CC adaptation strategy.

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

The closely linked socio-economic and ecological characteristics and linkages with the marine water bodies also call for a change to an interaction-oriented precautionary, ecosystem-based management (EBM) approach for ecosystem health and productivity that consider the management of human usage and activities to minimize the negative impacts on and sustain the functions of the coastal ground waters.

The EBM approach supports combined top-down management, for legitimacy and administrative control with bottom-up management based on local rules and participation and agreed solidarity levels reflected in the IMF plan

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

### Divergences & Constraints: GW & ICZM planning

GW supply of sector demands – ICZM: EBM balanced socio-economic benefits with ecosystem health and productivity.

GW hydrogeological/water body management/planning units – ICZM land-use, geomorphologic jurisdiction area based.

GW emerging economic water/energy pricing, including mainstream policy in public finance (WFD) – ICZM use (fishing) quotas, sector (tourism) & local government building permit administrations.

GW management, protection based on central water regulations, water quality standards and central administrative and practical implementation - ICZM built on restrictions and institutional mandates and enabled local community participation

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

### Convergences & Opportunities: GW & ICZM planning

ICZM and GW follow the EBM approach for governance, ecological and socio-economic priorities and indicators

ICZM and GW investment planning – harmonized policies/institutions and socio-economic, welfare, trade, energy coordination, Med Strategic Plan, and MED-TEIA process.

Combined top-down and bottom-up approach in ICZM and GW (see chart) with legal/economic governance property -based and socio-economic activity-based indicator,

With consistent economic governance institutions and economic management instruments and incentives for interventions in ICZM and GW.

Regional cooperation, participatory management and user based governance.

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP

<b>Top-down</b> key properties of the ecosystem	Identify goals that relate to the ecosystem	Develop objectives related to the properties/components of the ecosystem	Identify "activity-sensitive" indicators to report on impacts	Validate selected "activity-based" indicators
<b>Combined critical Top-down &amp; Bottom-up</b> EBM issues	Identify overall issues in the coastal zone	Develop specific objectives	Select governance, ecological and socio-economic interventions & indicators	Scope Indicators: a. Property-based: Legal/economic /institutional governance indicators b. Activity-based: Socio-economic Indicators
<b>Bottom-up</b> human activities of concern & significant impact	Review and prioritise human activities	Develop management objectives to reduce impacts & improve ecosystem health & productivity	Identify a list of property indicators to address ecosystem properties and impacts	Validate selected "property -based" indicators

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

**Scope of governance and socio-economic indicators within the ICZM jurisdiction:**

a. **Property-based, Legal/economic /institutional governance indicators**

b. **Activity-based, socio-economic indicators (drivers: economic, environmental, *public health/safety, social / demographic , institutional dimension.***

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

**Activity-based: Socio-economic indicators:**

.1 ***Socio-economic drivers:*** Economic, Environmental, Public health and safety, Social and demographic, Institutional dimension – scoring 1-5

.2 ***Water use values and costs:*** ratio (%) (1) direct water use value / full use, non-use and indirect/ecosystem value, or (2) water price and full economic water cost;

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

**Property-based, Governance (legal / institutional / economic governance and instruments) indicators:**

.1 **Legal/institutional governance: regional/national/local legal instruments, regulations & institutional arrangements (water administrations, water users' groups, courts of law for adjudication of disputes)**

.2 **Economic governance:**

- operational coordination mechanism mandated in economic planning and economic cooperation relevant to the GW system, e.g. adoption of a socio-economic advisory panel to introduce socio-economic aspects of joint transboundary work.
- economic management instruments and incentives: pricing, policy reform & structural adjustment, targeted subsidies.

2<sup>nd</sup> IWG meeting, methodology/issues groundwater, UNESCO/IHP  
Tirana, 14 October 2010

Activity- based socio-economic and property based legal/economic governance indicators to be tested and validated in the two pilot demonstrations under Sub-component 1.1 Managing Mediterranean Coastal Aquifers and Groundwater:

Regahia Lake, Algeria (cooperation with PAP-RAC); case study planned with Algerian Water Ministry;

Boyana Bay, Montenegro (cooperation with PAP-RAC and GWP-MED) case study planned with PAP-RAC and GWP-MED.

# Methodology and issues for convergence of biodiversity planning and ICZM planning

## F. Badalamenti

STRATEGIC PARTNERSHIP FOR THE MEDITERRANEAN SEA LARGE MARINE ECOSYSTEM  
**MedPartnership**  September 2010 - November 2011

**“Together for the Mediterranean”**  
**Developing an Integrative Methodological Framework for coast, water and biodiversity management**


2<sup>nd</sup> Integrative Working Group (IWG) meeting  
 Tirana, October 14<sup>th</sup>, 2010

Fabio Badalamenti  
 Methodology and issues for convergence of biodiversity planning and ICZM planning

**The need to safeguard biodiversity**

It is well accepted nowadays that one of the greatest challenges humanity faces is halting the loss of **biodiversity**.

1. Habitat loss
2. Habitat fragmentation
3. Pollution / degradation of habitat
4. Invasive species
5. Over-exploitation
6. Climate change
7. Cumulative effects



With or Without pollution due to excessive release of copper in the coastal waters. Credit photograph: Dep. Ecol. Pontificia Universidad Cat. de Chile

Cold water coral reefs in Norway. Images courtesy Institute of Marine Research, Norway

*Paramuricea clavata* necrosis

*Spongia officinalis* and bacterial veil on the epidermis

**Biodiversity: what is biodiversity?**

There are many definitions of biodiversity

From the International Convention on Biological Diversity (1992) biodiversity is:

“The variability among all living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”.

**More explicitly:**


Biodiversity is the sheer variety of life on earth. It includes all living organisms – plants, animals, even invisible micro-organisms, bacteria and genes – which, together, interact in complex ways with the inanimate environment to create living ecosystems.

**Biodiversity: what is biodiversity?**

**More realistically biodiversity, as such, is impossible to define precisely;**

it refers to diversity at every level of the taxonomic, structural, and functional organization of life. Moreover, it is presently impossible to measure all components of biodiversity in a given region. Even for well-known taxa such as birds and mammals, georeferenced information on distributions is typically incomplete.

For planning purposes, features of biodiversity must be individuated and measured in some way.



**The need to safeguard biodiversity: some history**

Since the 1960s, the accelerated pace of habitat change and natural resource utilization and the resultant threats to biodiversity have led to increased concern for protecting remaining natural areas.

From 1992 (CBD Rio conference ), establishing representative conservation area networks in which biodiversity can persist has become a policy goal for major governmental, intergovernmental, and nongovernmental organizations.

However, planning to safeguard biodiversity *per se* would be inefficient without a wider, more holistic approach, which includes humans and their activities.

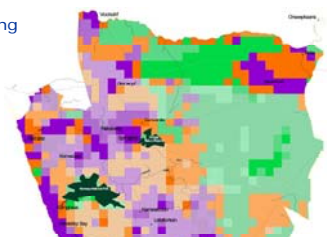
**The need to safeguard biodiversity**

Indeed, budgetary, ethical, and other socio-political constraints dictate that prioritized sites represent biodiversity with minimum impact on human interests

Hence, safeguarding biodiversity through biodiversity plans (i.e. **biodiversity planning**) is one of the major commitments for countries, and biodiversity planning at different spatial scales has become an imperative.

### What is biodiversity planning?

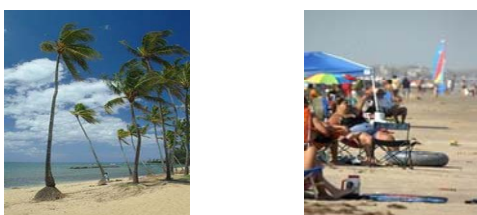
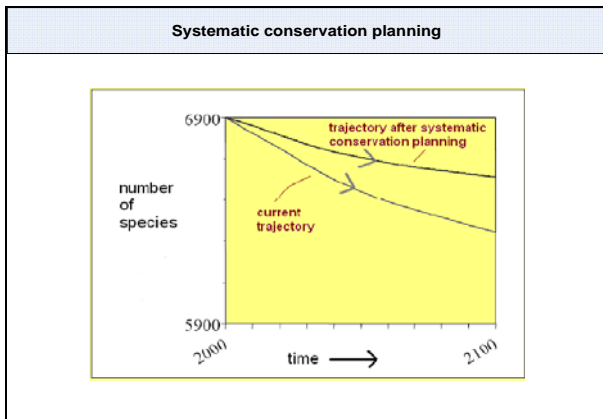
- Can't conserve everything
- Need to prioritise



Systematic biodiversity planning identifies critical biodiversity areas

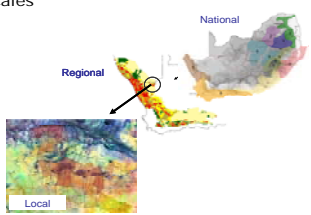
### Systematic conservation planning

The role of systematic conservation planning is to help balance conservation goals and needs of society, that is "integrating biodiversity into broader social and economic agendas"

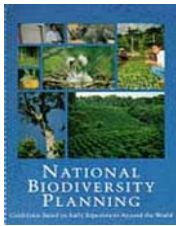



### The need to safeguard biodiversity

This means that we need to conserve...  
 a representative sample of all biodiversity patterns (principle of representation) and ecological processes (principle of persistence) at small and large spatial scales



### The need to safeguard biodiversity

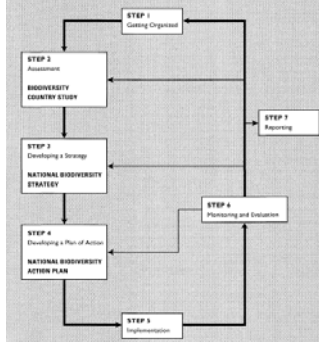


In the National Biodiversity Planning: Guidelines Based on Early Experiences Around the World (IUCN, UNEJ; WRI, 1995), a useful guide is provided for planning implementation.

It offers a seven-step biodiversity planning process.

### Biodiversity planning

**STEP 1** Establish a focal point in government...  
**STEP 2** Assess the current status of biodiversity...  
**STEP 3** Develop a Strategy...  
**STEP 4** Develop a Plan of Action...  
**STEP 5** Implementation...  
**STEP 6** Monitoring and Evaluation...  
**STEP 7** Reporting...



### Biodiversity planning

#### Updating the NBSAP

The development and implementation of the NBSAP has to be an iterative and cyclical process.

In the early stages the status and trends of national biodiversity

- will not be fully known,
- not all threats will have been identified and assessed,
- understanding of the goods and services provided by biodiversity and the economic and societal values of these will not be widespread, and
- many sectors will not fully comprehend the connections between their activities and policies and the status of biodiversity.

### Beyond the seven steps: Marine biodiversity planning tools

The availability of environmental, economic and social data has increased dramatically in the last decades.

General and specific software, that is, biodiversity planning tools, may help with this task.

A review by Sakar et al. (2006) identifies their differences and similarities and their relative strengths and weaknesses.



Beyond the seven steps: <i>Marine biodiversity planning tools</i>
<p><b>Conservation planning tools are not a panacea</b></p> <p>With the premise that conservation planning tools are intended for decision support, not for decision making that excludes human expertise, Sarkar and colleagues advise that decisions made using these tools are necessarily constrained by the range and quality of the available data and human expertise, although the rapid recent growth of biological and environmental databases has improved data quality and availability. Planning tools cannot further solve the problem of inadequate data but they can help to use the available data to its best.</p> <p><b>List of general planning tools</b>  C-Plan,  MARXAN  MultCSync,  ResNet,  Target, WorldMap.</p>

Beyond the seven steps: <i>Marine biodiversity planning tools</i>
<p>The use of biodiversity planning tools involve a number of stages including:</p> <ul style="list-style-type: none"> <li>•the determination of stakeholders in the planning region,</li> <li>•collection and treatment of biological and socioeconomic data,</li> <li>•selection of features to represent biodiversity quantitatively,</li> <li>•selection of individual conservation areas,</li> <li>•assessing vulnerability and the prognosis for components of biodiversity, and</li> <li>•multicriteria analysis to satisfy divergent socioeconomic and biological goals of the stakeholders.</li> </ul> <p>Each of these stages is aided by the use of planning tools consisting of software packages implementing a variety of algorithms for these purposes.</p>

Beyond the seven steps: <i>Marine biodiversity planning tools</i>
<p>The Sakar et al. review strongly highlights the importance of incorporating sociopolitical considerations and biological principles into conservation planning tools.</p> <p>Sociopolitical considerations must be an integral part of conservation planning, and therefore planning tools must enable their incorporation in the decision making process.</p>

Beyond the seven steps: <i>Marine biodiversity planning tools</i>
<p><b>Conservation planning tool potential weaknesses: ecosystems are not isolated</b></p> <p>One of the risks of conservation planning tools is that they may be static, dealing with closed ecosystems, unaffected by inputs from elsewhere.</p> <p>In many cases, particularly at very large spatial scales, this assumption may be inadequate for selecting conservation areas that ensure the persistence of biodiversity.</p> <p>For instance, in coastal environments, the linkages between ecosystems must be considered if biodiversity is to be sustained: a marine protected area established at a tropical coral reef may become imperilled by human activities onshore that change the flow of sediments, nutrients, or pathogens (the recent disaster in the Gulf of Mexico is a good example of this kind of bad planning).</p>

The Nature Conservancy's ecoregional methodology
<p>The Nature Conservancy (TNC) has recently adopted a framework for conservation that places emphasis on the conservation of all communities and ecosystems (not just the rare ones) and emphasizes conservation at multiple levels of biological organization.</p> <p><b>Steps and principles of the framework are similar to those seen before.</b></p> <p>This assessment uses the following steps:</p> <ol style="list-style-type: none"> <li>1. Identification of biodiversity targets (species, communities and ecosystems that represent the biodiversity of the region)</li> <li>2. Mapping of the occurrences/distribution of biodiversity targets, together with a database of information related to each target</li> <li>3. Identification of conservation goals for each biodiversity target (i.e. what is needed to ensure that each biodiversity target is conserved in the future - considering area needed for viability, scale, and ecosystem function)</li> <li>4. Identification of areas of high biodiversity value (e.g. areas that support multiple targets, rare species, and those that are important to maintain ecological processes)</li> <li>5. Analysis of threats and causes of threat to high biodiversity areas and targets</li> </ol>

The Nature Conservancy's ecoregional methodology
<p>The protocol identified six principles that are required for an effective design:</p> <ol style="list-style-type: none"> <li>1. The portfolio of conservation and managed sites represents all system targets.</li> <li>2. Multiple examples of all conservation targets should be represented across the diversity of environmental gradients in the ecoregion.</li> <li>3. Priority is given to system targets during the site selection process as these areas are likely to contain multiple species targets.</li> <li>4. Areas that contain high-quality examples from multiple environments (marine, aquatic and terrestrial) are also given priority.</li> <li>5. Areas of biodiversity significance should be functional – maintain size, condition and landscape/seascape context - within the natural range of variability of the conservation targets.</li> <li>6. The assemblage of areas of biodiversity significance should capture all targets.</li> </ol>

The Nature Conservancy's ecoregional methodology
<p><i>The method in more detail</i></p> <p>In case of multiple uses, an interactive process of weighing conservation priorities against a wide range of other resource-management priorities is required.</p> <p>Iterations are suggested to reach this perspective.</p> <p>Even inadequate Iterations may enable the effective identification of key data gaps which can be subsequently filled.</p> <p>Such iterations can be achieved using SPOT Analysis that produce portfolios of important biodiversity areas for a number of different scenarios</p>

The Nature Conservancy's ecoregional methodology
<p><b>SPOT analysis</b></p> <p>The Spatial Portfolio Optimization Tool (SPOT) is a generalized tool for conservation portfolio selection, using a flexible approach to design an efficient portfolio around specific conservation goals (Shoutis 2003).</p> <p>It analyzes a region by dividing it into small parcels called analysis units, then forms a portfolio by marking individual units as included or excluded from a portfolio.</p> <p>Using a process known as simulated annealing (a general technique for finding the lowest value of a function through many trial runs and repeated adjustment to input values), SPOT forms and analyzes millions of portfolios while searching for the most efficient portfolio.</p>

The Nature Conservancy's ecoregional methodology

Each portfolio is evaluated according to three criteria:

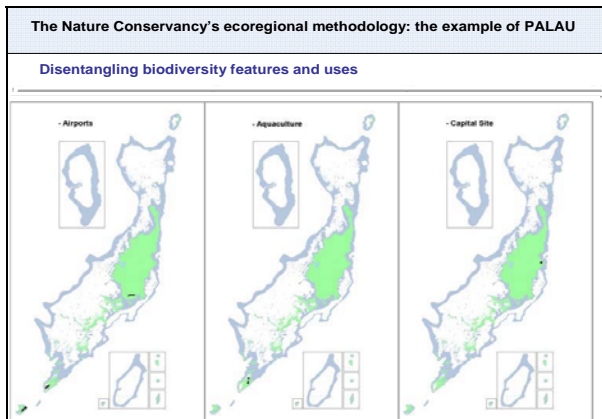
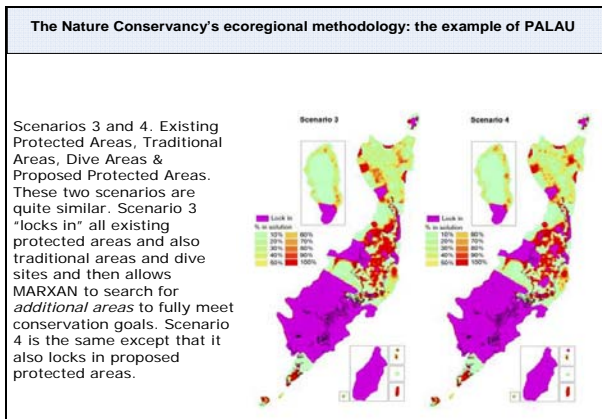
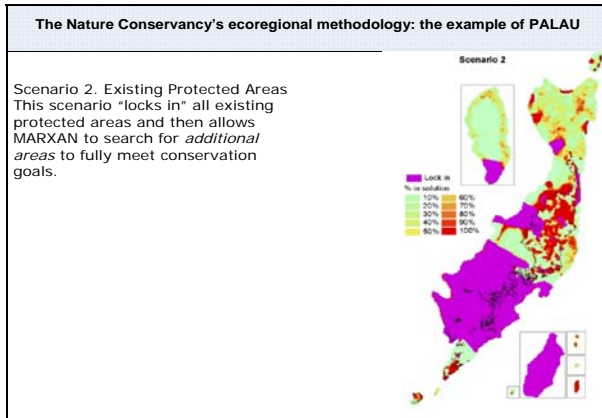
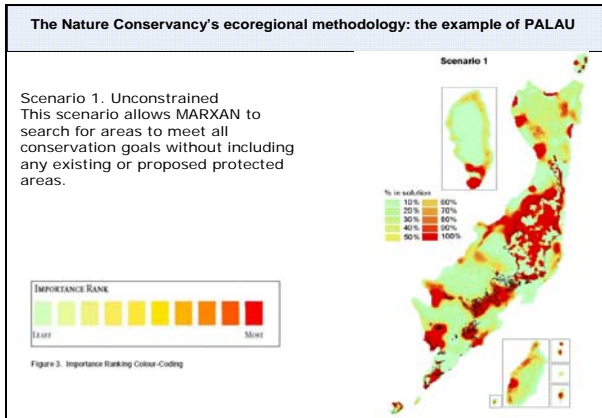
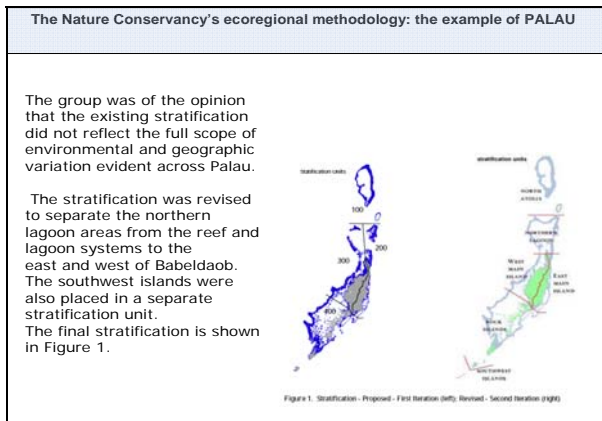
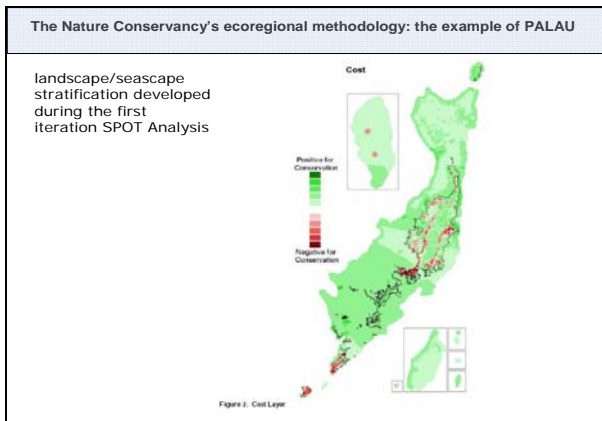
- (1) how well it meets conservation goals;
- (2) the area included; and
- (3) the level of fragmentation of the portfolio.

The portfolio that does the best job of **minimizing the area and fragmentation while meeting conservation goals** is considered the most optimal and is output as the result, that is, a scenario.

The Nature Conservancy's ecoregional methodology

Information gathered with SPOT analyses can be refined and used for a second iteration using conservation planning tools like MARXAN Analysis to develop a number of protected area network design scenarios.

Results gathered from the conservation planning tool are then discussed in workshops with stakeholder and when necessary the whole process is refined.





**Fitting Biodiversity planning into Integrated Coastal Zone Management (ICZM) and Marine Spatial Plans (MSP)**

Convergence of biodiversity planning with ICZM and MSP should be straightforward.

**Indeed**

ICZM and MSP assists coastal communities in setting priorities, identifying short and long-term actions, and in assessing their implications on existing management structures. The outcomes are to respect the needs of all sectors and the values and inputs of a multiple range of agencies in an effort to implement a strategic vision of integrated coastal zone management. [This include biodiversity safeguard.](#)

**In particular**

MSP can be defined as the public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic and social objectives that are usually specified through a political process. MSP should be ecosystem based and is an element of sea use management\* (UNESCO 2009).

**Convergence vs Divergence and Conflict Resolution: a Plea for Governance**

If we look at the definitions and aims of biodiversity planning, ICZM and MSP a convergence should be straightforward.

No major divergence should arise when merging biodiversity plans into ICZM/MSP, especially if all the steps forecasted in the biodiversity and ICZM and MSP planning are followed.

However, adding a governance framework to the ICZM may help to prevent/resolve conflicts when present.

**Conflict Resolution, Divergence: a role for Governance**

Governance is the involvement of a wide range of institutions and actors in the production of policy outcomes

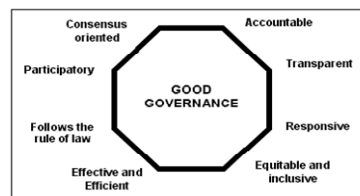
The governance of large areas generally involves a combination of approaches – state-, people- and market-focused, the balance between which will vary in different contexts

Governance analyses must look at these three components and the manner in which they are combined to achieve effective governance.

**Conflict Resolution, Divergence: a role for Governance**

Good governance has 8 major characteristics.

It assures that corruption is minimized, the views of minorities are taken into account and that the voices of the most vulnerable in society are heard in decision-making. It is also responsive to the present and future needs of society.



**To summarise**

- There is international agreement that there is biodiversity loss and to develop plans to stop biodiversity erosion
- Biodiversity plans and biodiversity tools have been developed to prevent further loss of biodiversity
- There does not seem to be major divergence between biodiversity plans and ICZM or MSP, rather, there may be convergence
- Governance analysis may help to resolve conflicts, where they exist



**What is biodiversity planning?**

Biodiversity planning is NOT just about identifying where to put the next national or provincial park

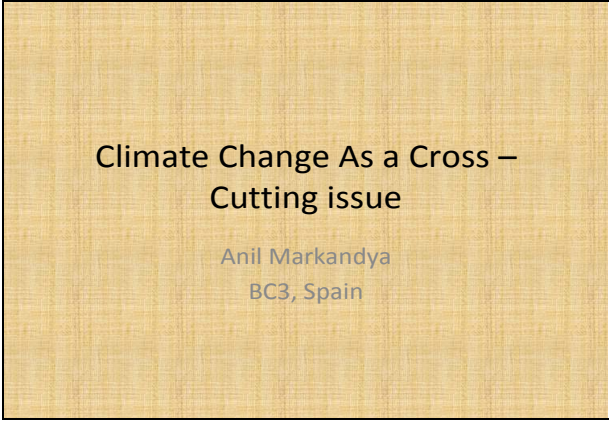
Biodiversity planning IS about:

- living landscapes
- multi-owned protected areas
- guiding land-use planning and decision-making

In marine and coastal areas, processes like integrated coastal zone management (ICZM) and marine spatial plans (MSP) are invoked as suitable methodologies to allow nature protection and conservation while maintaining human activities to production levels. Therefore, a successful biodiversity plan is one that a) takes into consideration all the uses of a certain area, b) follows a circular path, that is, decisions taken in the first steps can be adjusted following the results achieved in further steps, and c) is able to adapt to changes.

# Climate change as a cross-cutting issue

## A. Markandya



- ### Some Key Observations
- Both ICZM and CC adaptation involve many common steps.
  - A number of ICZM actions need to be modified to incorporate CC considerations.
  - CC adaptation generally involves longer time horizons than most ICZM actions.
  - CC impacts are associated with much greater uncertainty than ICZM normally has to deal with.

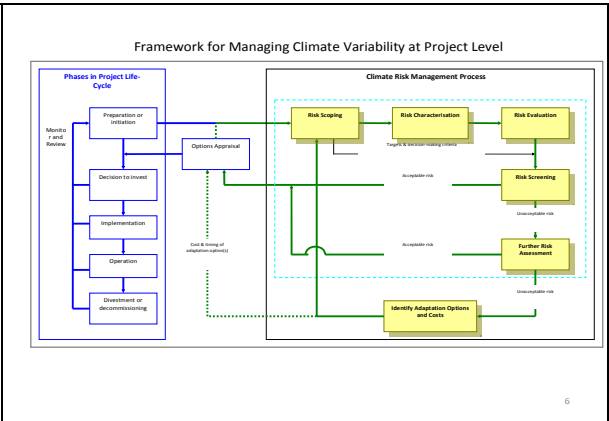
### Common Procedures

Procedure	How it is Affected by CC
Mission, Context and Vision	Broad mission and objectives include climate change
Work Plan, Team Establishment, Boundary Definition.	Allow for links between broader economic activities and pressures on coastal resources and ecosystems. CC impacts may require wider boundaries.
Stakeholder Participation	No real changes needed
Identification of Key Problems; Issues, Drivers and Pressures	Need to undertake an analysis of key CC impacts and how they affect coastal zones. Account for uncertainty. Need to see how broader mitigation and adaptation actions will affect coastal zones.
Objectives and Indicator Setting	Pressure indicators to include economic development (not just for CC). Some other pressure indicators possible. State indicators to include governance, capacity as well as specific CC-related physical ones Impacts: Several CC indicators to be added Response: Several CC indicators to be added

### Common Procedures

Procedure	How it is Affected by CC
Analyzing existing conditions	Covered under state indicators
Defining and Analyzing Future Conditions	Scenarios to include key CC impacts, which will depend on socioeconomic factors that determine GHG emissions
Identify Alternative Scenarios, Options and Tools	Major task is to integrate CC scenarios with local ICZM scenarios. Former are based on downscaling climate models and can be highly uncertain.
Option Evaluation and Plan Formulation	Specific actions will be needed to address CC. Important role for EWS. CC will impose requirement of precautionary principle, but also some work now on cost effectiveness is now available (EG DIVA Model)
Implementation	CC measures have to take account of autonomous adaptation – actions are not only taken by the public sector.
Monitoring and Review	Data on impacts for CC is frequently updated.

- ### Overlaying CC
- In several areas of action CC modifies the design of the intervention:
    - Design of coastal roads
    - Tourism developments
    - Hydropower developments
    - Construction of buildings
  - In addition to taking account of sustainability considerations for ecosystems we need to allow for potential CC impacts.



## Time Horizons

- CC impacts occur over decades and look forward 100 years and more.
- Most ICZM plans and strategies look at much shorter periods.
- These two horizons have to be reconciled.
- Some ICZM activities last a long time so in fact it makes sense to take a log term view from a sustainability perspective anyway.
- SEA may provide a tool for integrating both horizons.

## Infrastructure

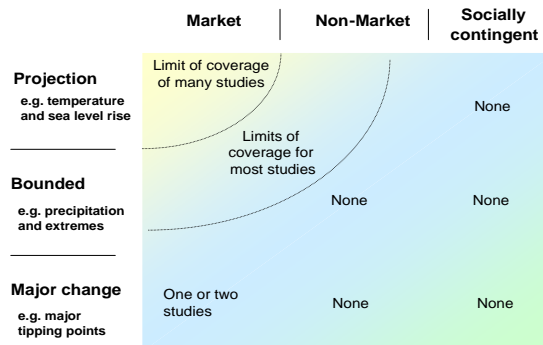
- Long lead times

Sector	Time Scale (years)	Exposure
Water (dams etc.)	30-200	+++
Land Use Planning	>100	+++
Coastline and flood defenses	>50	+++
Building & Housing	30-150	++
Transport (roads Railways, bridges)	30-200	+
Urbanism	>100	+
Energy (e.g. cooling systems)	20-70	+

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## Uncertainty

- For a 2°C increase the decrease in water availability is estimated at 20-30%, the declines in crop yields in tropical regions at 5-10% and 15-40% of species are said to be facing extinction. These wide ranges become even larger when different emissions scenarios and different modelled projections of temperature change are taken into account.
- SLR by 2100: Values for predicted sea level rise over the course of this century typically range from 90 to 880 mm, with a central value of 480 mm. Variations for specification locations are even higher.
- To the uncertainty of the magnitude of the physical impacts, we have to add the uncertainties associated with the valuation of the impacts.
- In addition to the uncertainties described above we also have to take account of the incomplete coverage of climate change itself, as well as the risks and impacts in the literature. See next figure.



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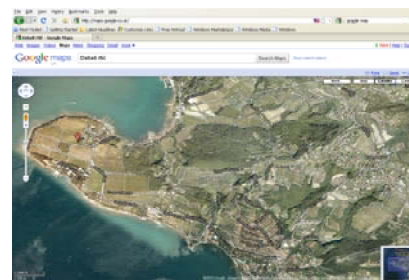
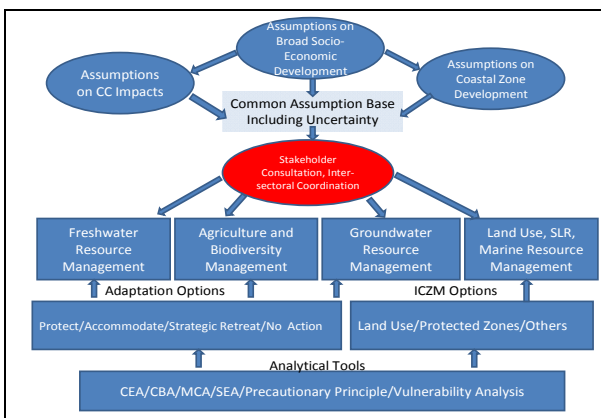
## Uncertainty

- All this makes the estimation of the potential effects of climate change and adaptation actions to address these exceptionally complex and unfortunately the available literature on adaptation costs and benefits does not do justice to this problem.
- Estimates are often based on addressing a given impact, not on selecting the action that will provide the best response under a range of possible outcomes.
- A precautionary approach would suggest a design that allows for impacts that are particularly unfavourable but the literature does not suggest this has been done systematically. Some work using 'robust strategies', which yield satisfactory performance under a range of possible outcomes, has been developed and applied to freshwater management and flood management (Groves and Lempert, 2007; Dessai, 2005) but they are relatively few.

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## A Possible Way Forward

- Get broad agreement on scenarios, including those on which CC impacts are based.
- Build links between ICZM options and CC impacts
- Consult with stakeholders on options for Adaptation and ICZM, based on these scenarios.
- Evaluate adaptation and ICZM options using a range of tools allowing for uncertainty
- Monitor data and knowledge on CC and re-evaluate where appropriate.



THANK YOU!