

IWRM and ecosystem based approaches: Complementary, duplicating or competing?

IWRM, ICZM, EBA, Adaptation to Climate Change: Integrating the Integrated

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“Integrating the Integrated”

The concept of Integrative Methodological Framework (IMF)

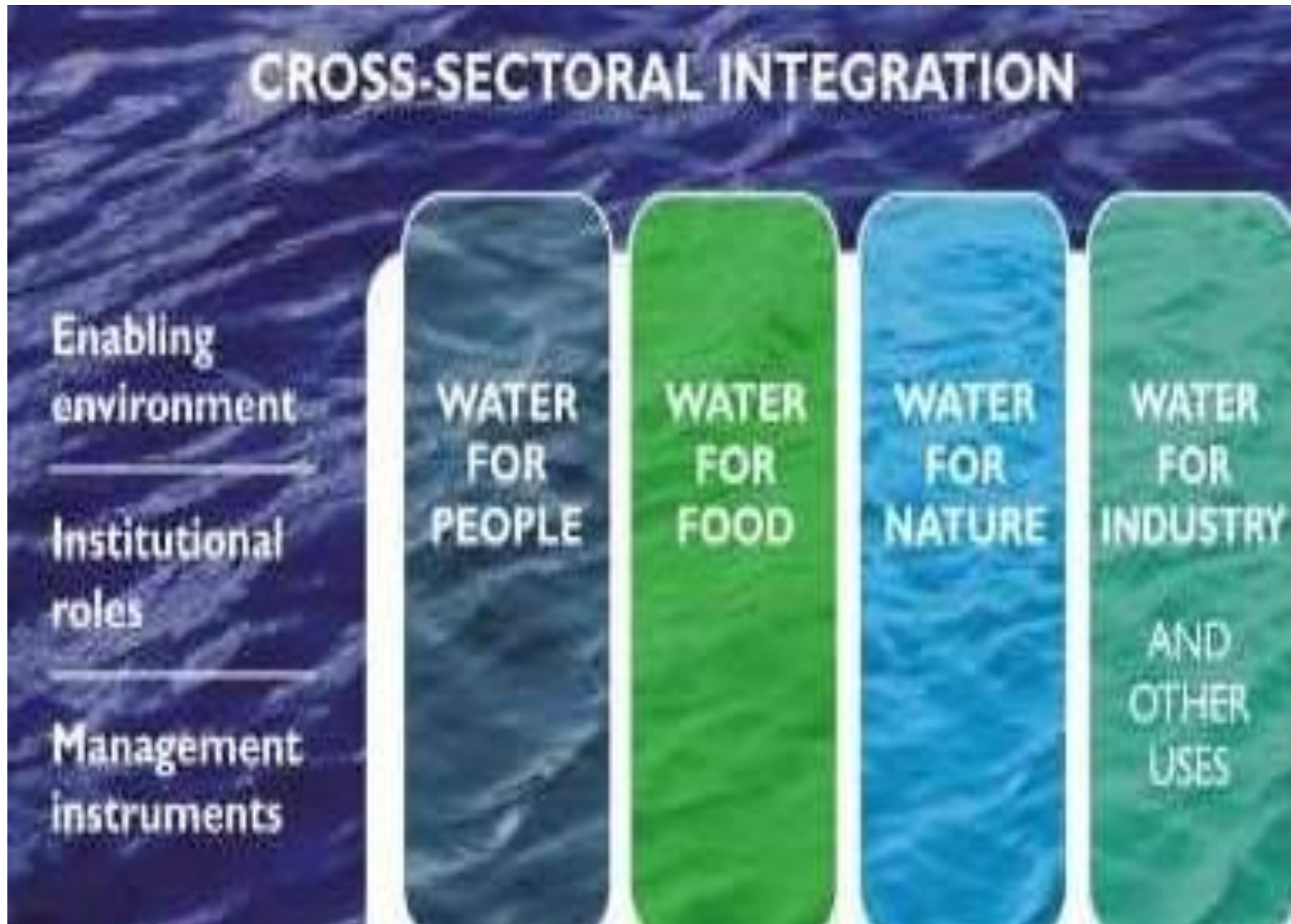
What is all about...

A systematic effort for merging, on the one hand “mature” theoretical approaches based on the evolution of principles and concepts about integrated management(s) (IWRM, ICZM...) and on the other practical experience gained from efforts to apply on the ground, the EBA and measures for the adaptation to climate change in a complimentary way at the entire river basin and beyond from S2S including coastal areas and groundwater.

“Integrating the Integrated”: IWRM

IWRM, is a process which promotes the coordinated development and management of **water, land and related resources** in order to maximise economic and social welfare in an equitable manner **without compromising the sustainability of vital ecosystems** and the environment (GWP,TEC, 2000).

“Integrating the Integrated”: IWRM



“Integrating the Integrated”: Evolution of IWRM, IRBM

IRBM, emerged as a "process of coordinating conservation, management and development of water, land and related resources across sectors within a given **river basin**, in order to maximise the economic and social benefits derived from water resources in an equitable manner while preserving and, where necessary, restoring freshwater ecosystems." (GWP, TEC Paper No.4 on IWRM, 2000)/Compatibility with WFD.

“Integrating the Integrated”: Evolution of IWRM, WFD

In the EU countries and beyond, the EU WFD is used as an “interpretation” (to a certain extent) of the IWRM.

Water
Framework
Directive



- River Basin
- Participatory Processes
- Good ecological & chemical status

“Integrating the Integrated”: ICZM

The objectives of integrated coastal zone management are to:

- (a) facilitate**, through the rational planning of activities, **the sustainable development of coastal zones** by ensuring that the environment and landscapes are taken into account in harmony with economic, social and cultural development;
- (b) preserve coastal zones** for the benefit of current and future generations;
- (c) ensure the sustainable use of natural resources**, particularly with regard to **water use**;
- (d) ensure preservation of the integrity of coastal ecosystems**, landscapes and geomorphology;
- (e) prevent and/or reduce the effects of natural hazards** and in particular of climate change, which can be induced by natural or human activities;
- (f) achieve coherence between public and private initiatives** and between all decisions by the public authorities, at the national, regional and local levels, which affect the use of the coastal zone.

“Integrating the Integrated”: CAGM

Coastal Aquifer and Groundwater Management and Planning (CAGM) was proposed by UNESCO IHP and aims to protect, enhance and to the extent possible, restore the status of all bodies of coastal groundwater. It is an integral part of both ICZM and IWRM.

“Integrating the Integrated”: EBA

The 12 Principles of the Ecosystem Based Approach (EBA)

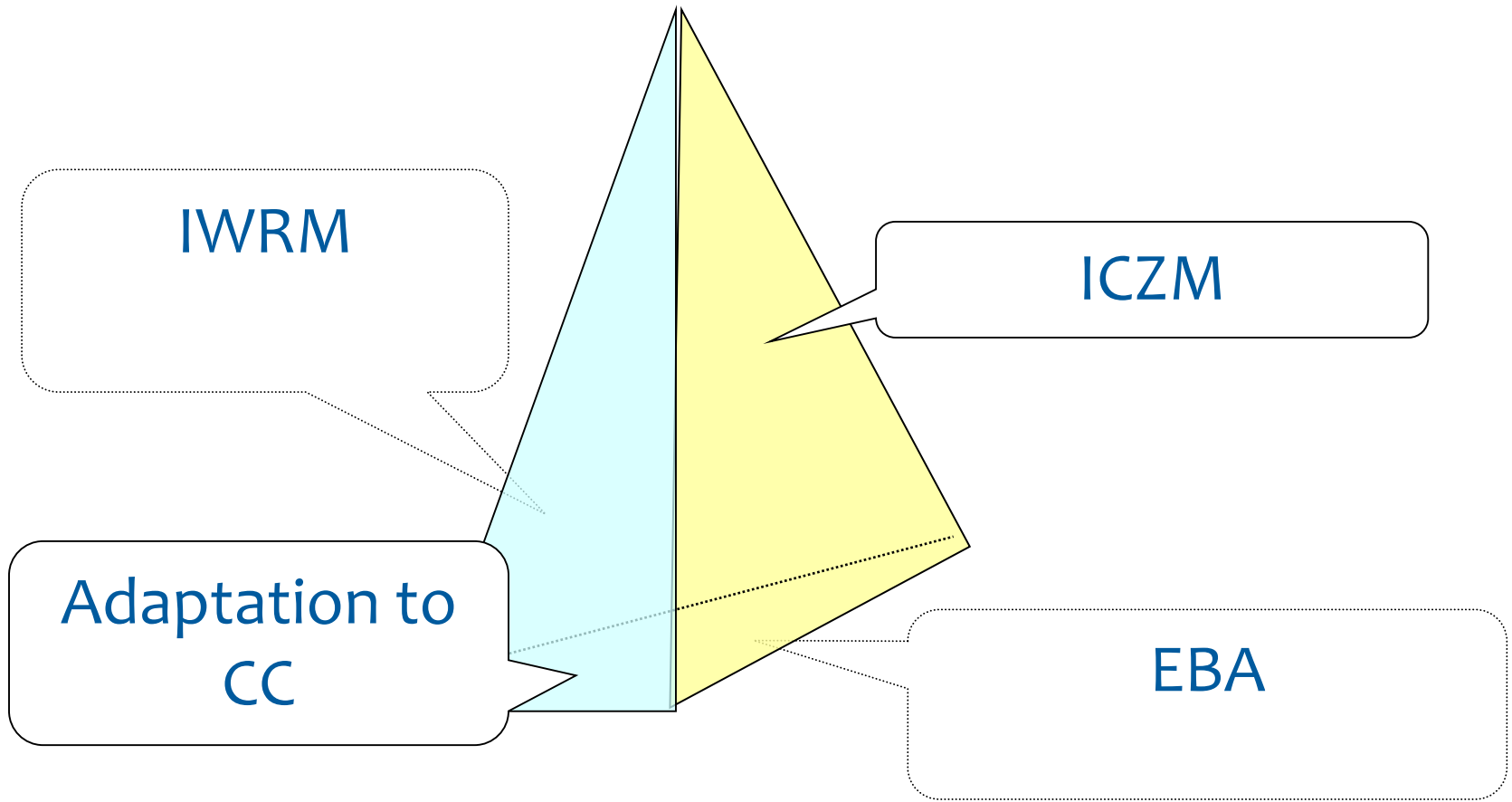
- 1: Recognise objectives as society’s choice.
- 2: Aim for decentralised management (i.e. subsidiarity).
- 3: Consider the extended impacts, or externalities.
- 4: Understand the economic context and aim to reduce market distortion.
- 5: Prioritise ecosystem services
- 6: Recognise and respect ecosystem limits.
- 7: Operate at an appropriate scale, spatially and temporally.
- 8: Manage for the long-term, considering lagged effects.
- 9: Accept change as inherent and inevitable.
- 10: Balance use and preservation.
- 11: Bring all knowledge to bear.
- 12: Involve all relevant stakeholders.

“Integrating the Integrated”: Adaptation to CC

Adaptation means anticipating the adverse effects of climate change and taking appropriate action to prevent or minimise the damage they can cause, or even taking advantage of opportunities that may arise. It has been shown that well planning is needed in adopting appropriate measures including: effective use of scarce water resources; building flood defenses; developing drought-tolerant crops; choosing forestry practices less vulnerable to storms and fires; setting aside land corridors to help species migrate etc.

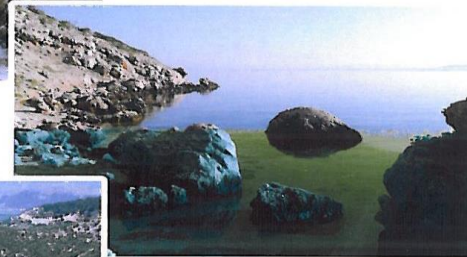
Most of the aforementioned measures are complementary to those introduced through IWRM, ICZM and EBA.

“Integrating the Integrated”: IMF



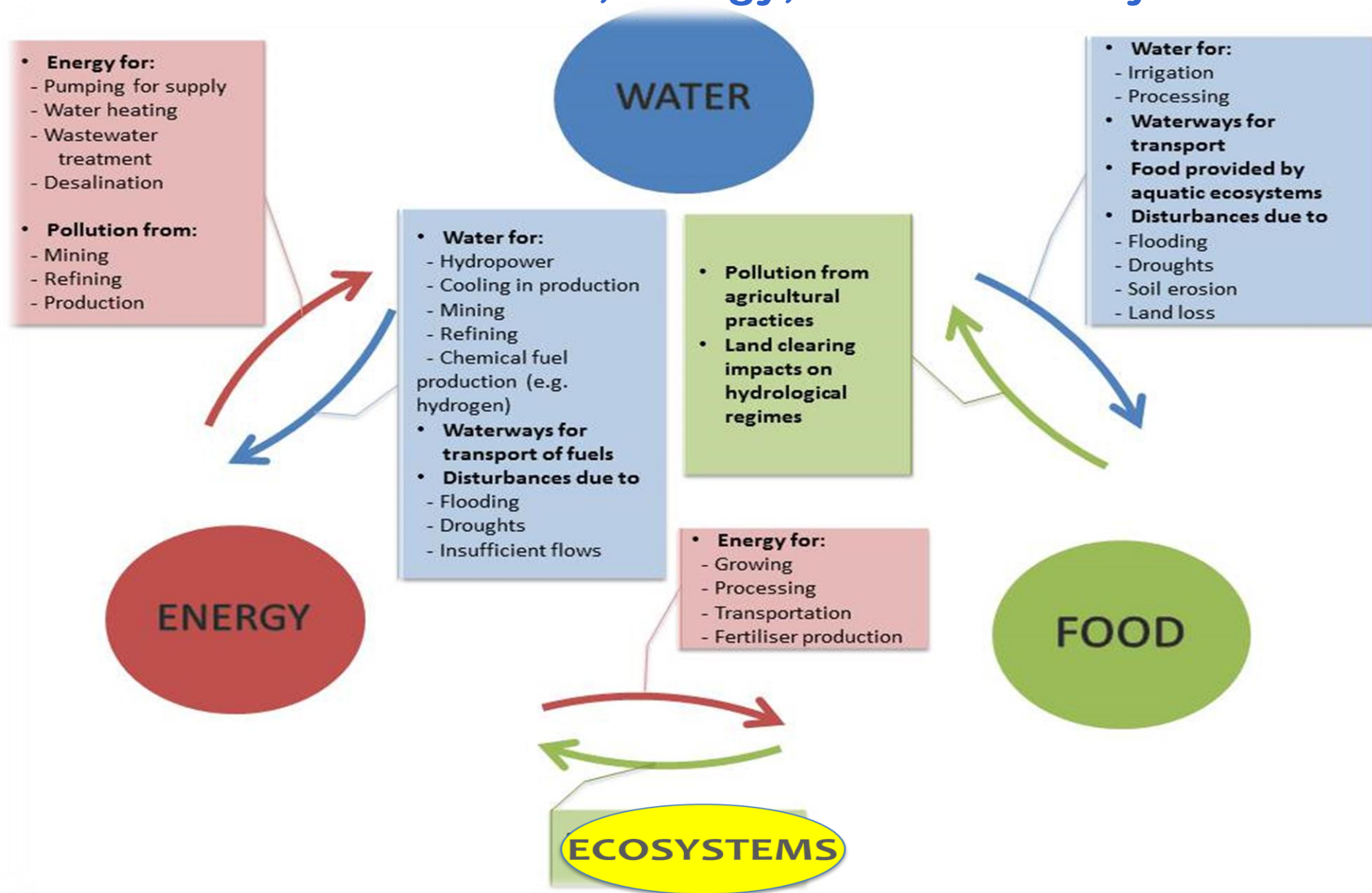
An Integrative Methodological Framework (IMF)

for coastal, river basin and aquifer management
Towards converging management approaches
for Mediterranean coastal zones

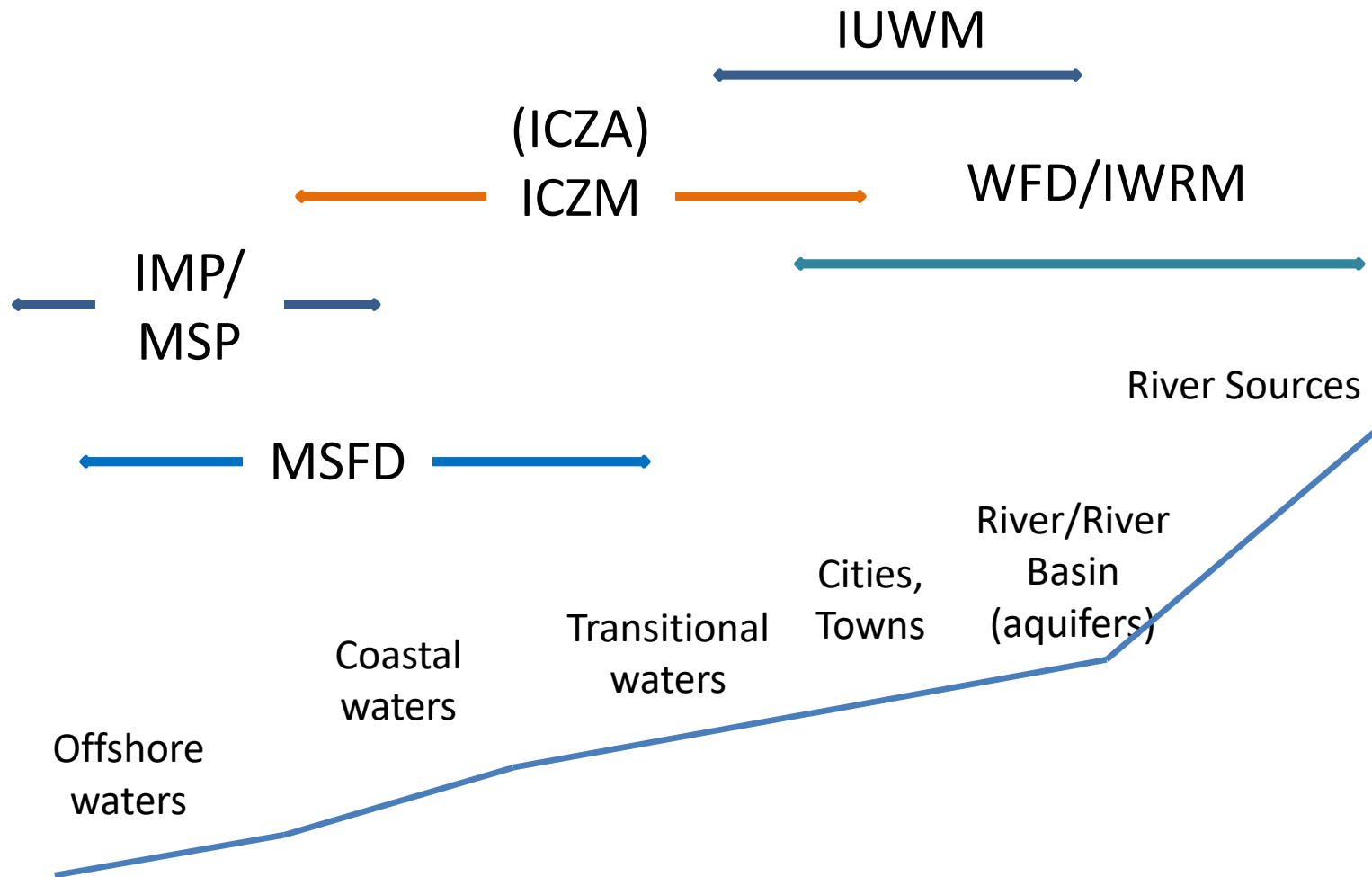


“Integrating the Integrated”: The Nexus

The ‘nexus’ of water, energy, food and ecosystems



Currently various management tools are applied in the way from the source to the sea (S2S)



Various aspects of integration of IWRM with ICZM, EBA and other frameworks (1/7)

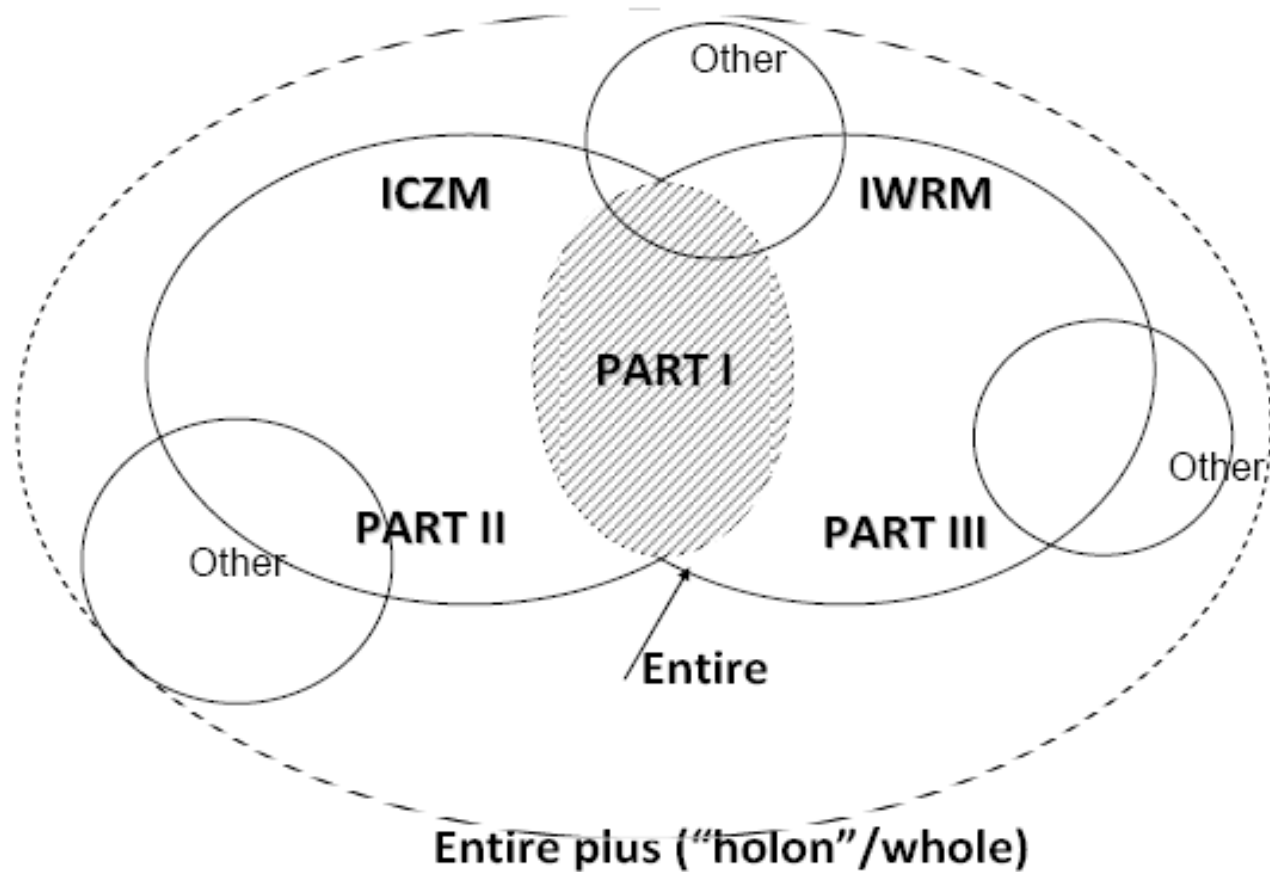


Figure 13: Visualisation of ICZM, IWRM and other management practices

Various aspects of integration of IWRM with ICZM, EBA and other frameworks (2/7)

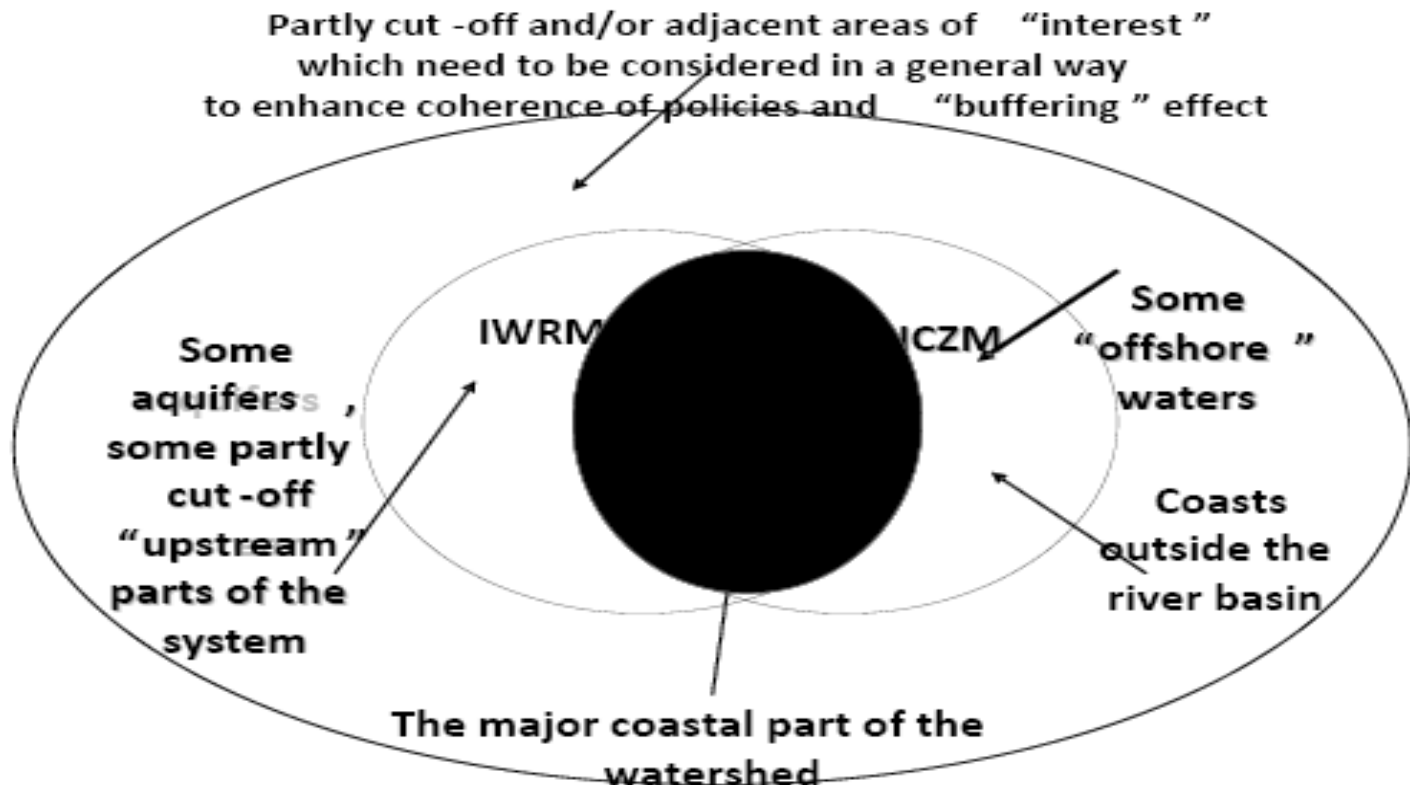


Figure 14: Integration and Geographical Coverage

Various aspects of integration of IWRM with ICZM, EBA and other frameworks (3/7)

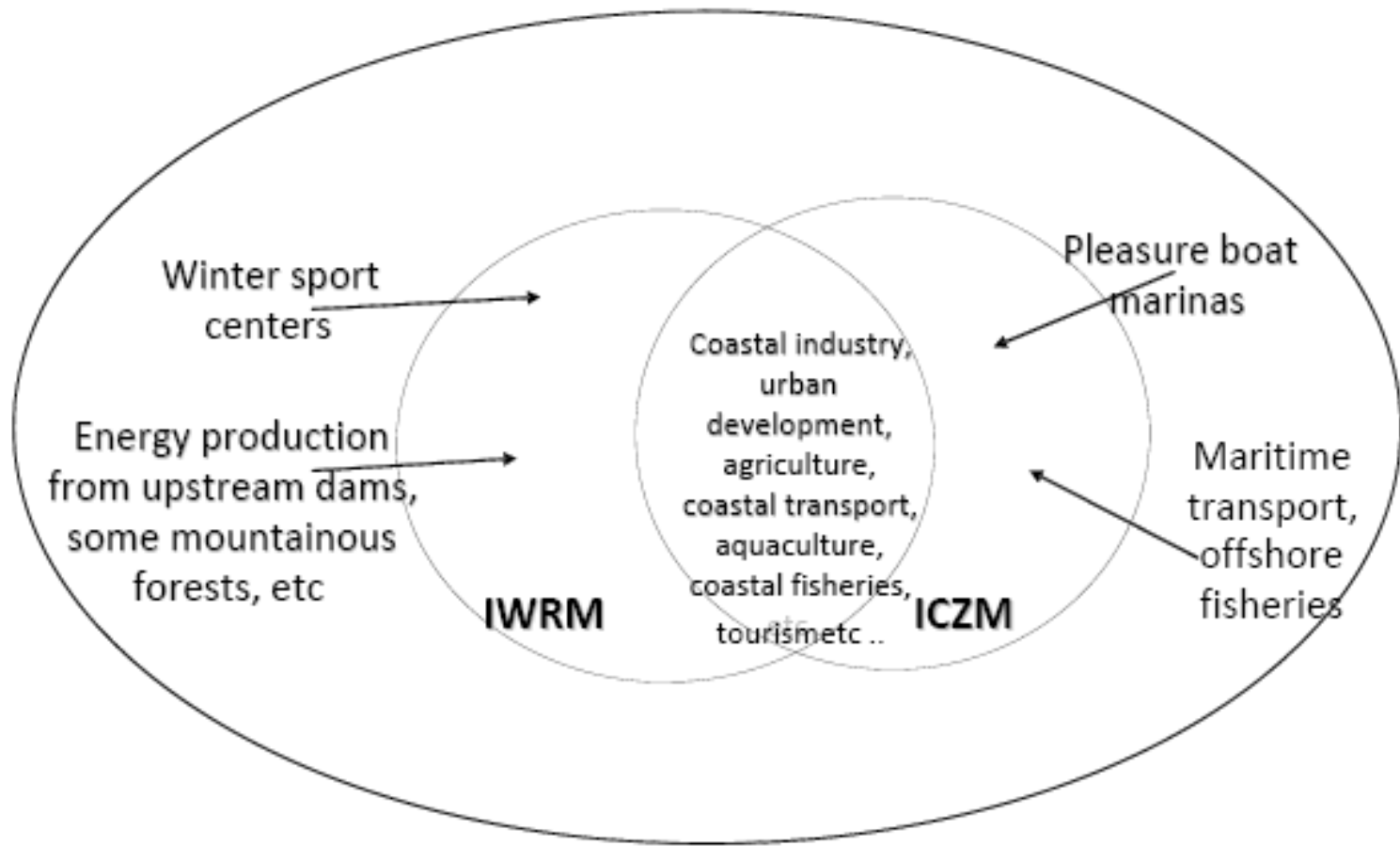


Figure 15: Integration across sectors

Various aspects of integration of IWRM with ICZM, EBA and other frameworks (4/7)

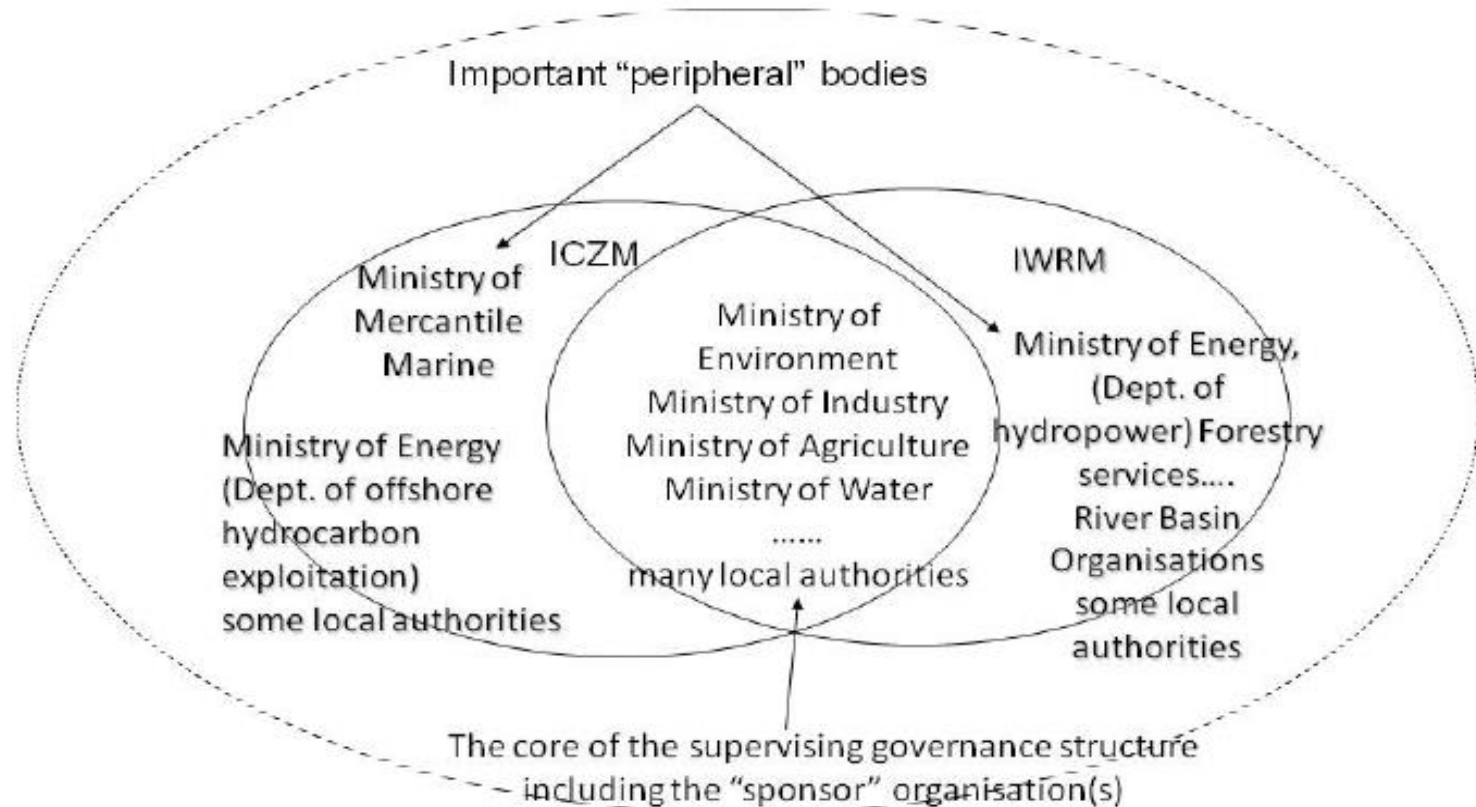


Figure 16: Coordination for Integration

Various aspects of integration of IWRM with ICZM, EBA and other frameworks (5/7)

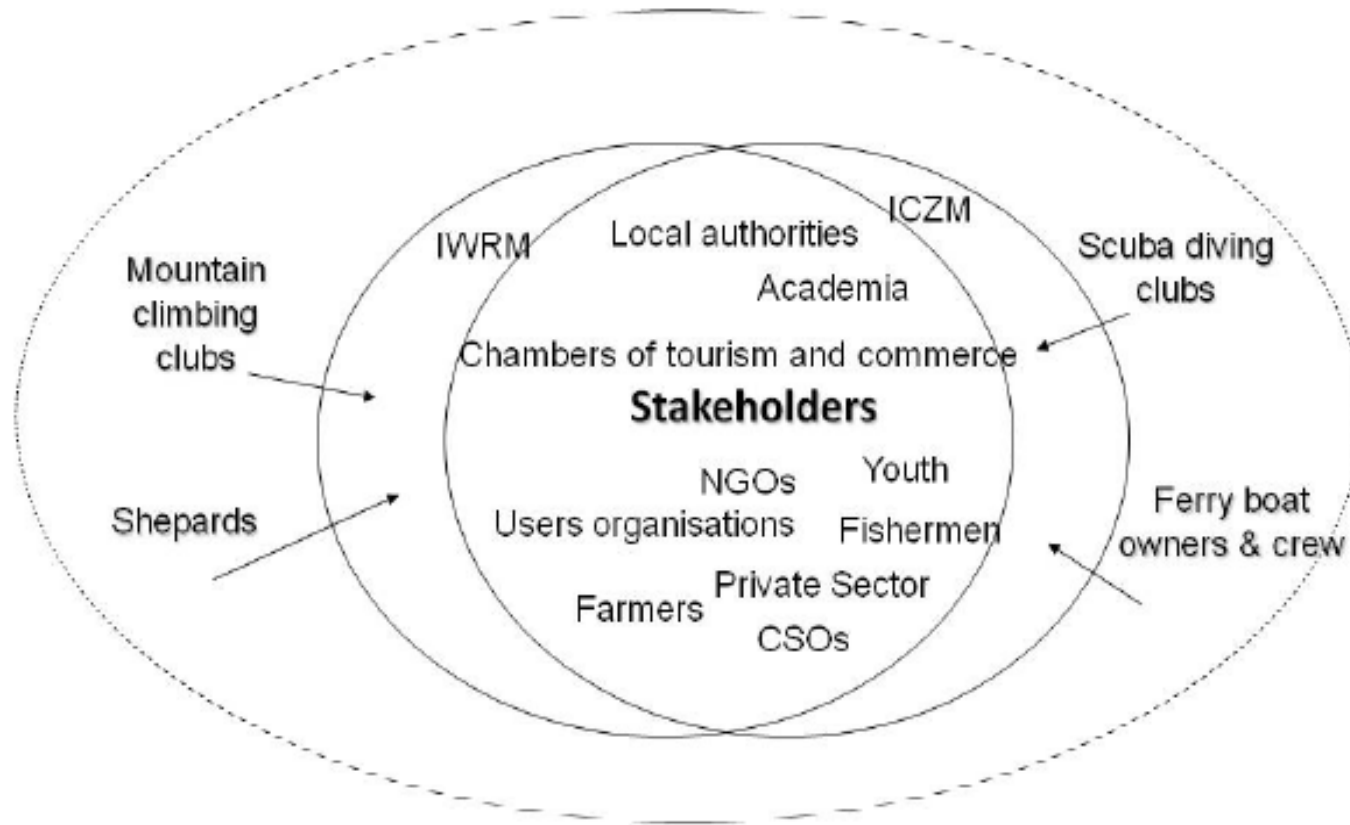


Figure 17: Stakeholders involved in Integration

Various aspects of integration of IWRM with ICZM, EBA and other frameworks (6/7)

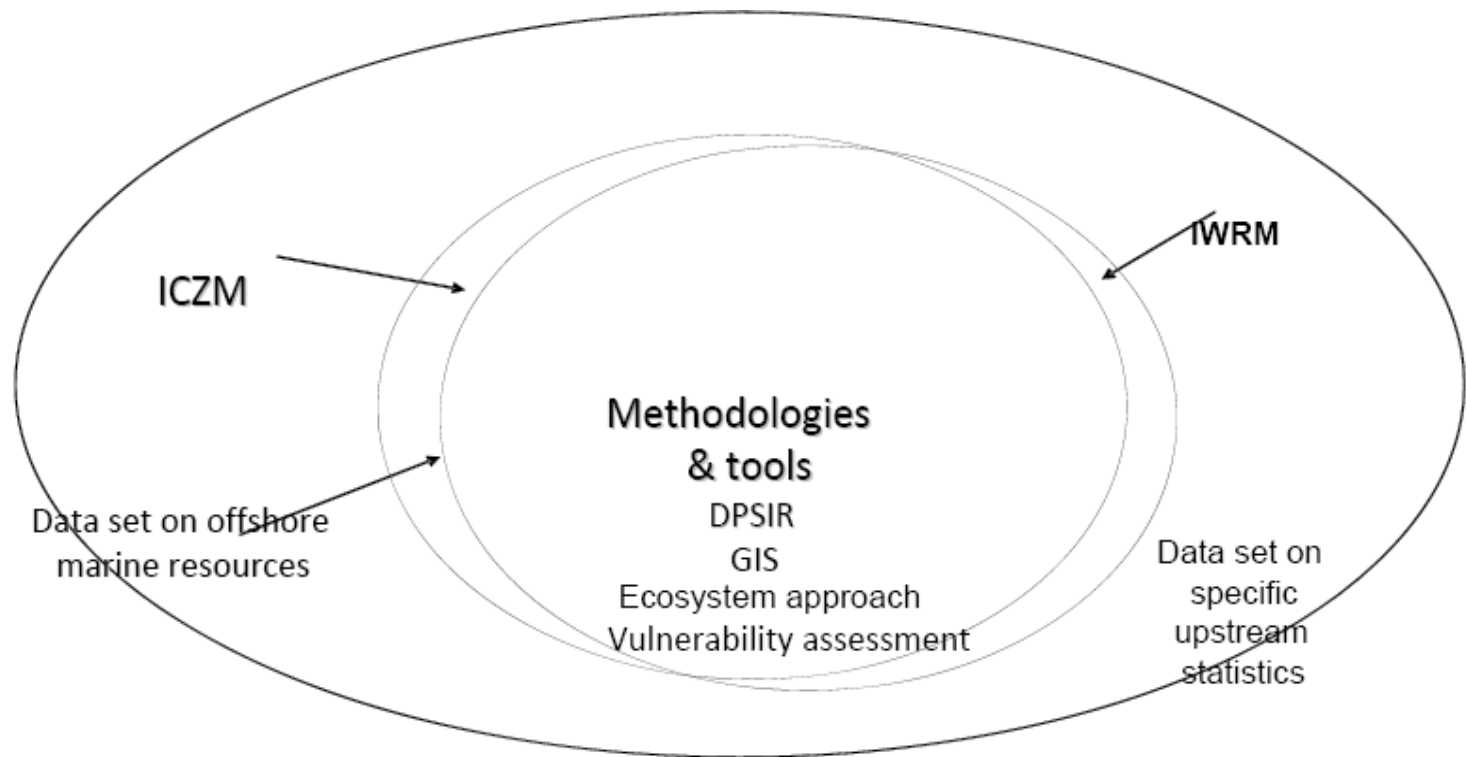
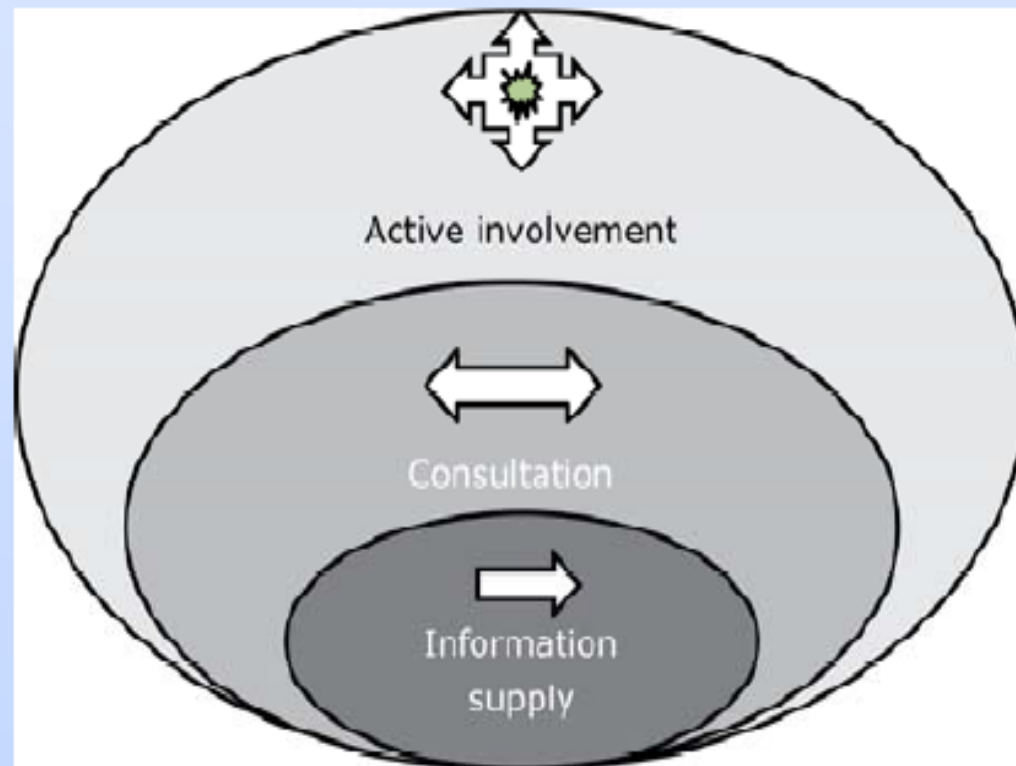


Figure 18: Methodologies employed for integrated planning and management

Various aspects of integration of IWRM with ICZM, EBA and other frameworks (7/7)

Figure 21: Three levels of public participation, after WFD Guidance document no 8 (CIS Working group, 2.9, 2003)



“Integrating the Integrated”: Common / The seven I’s

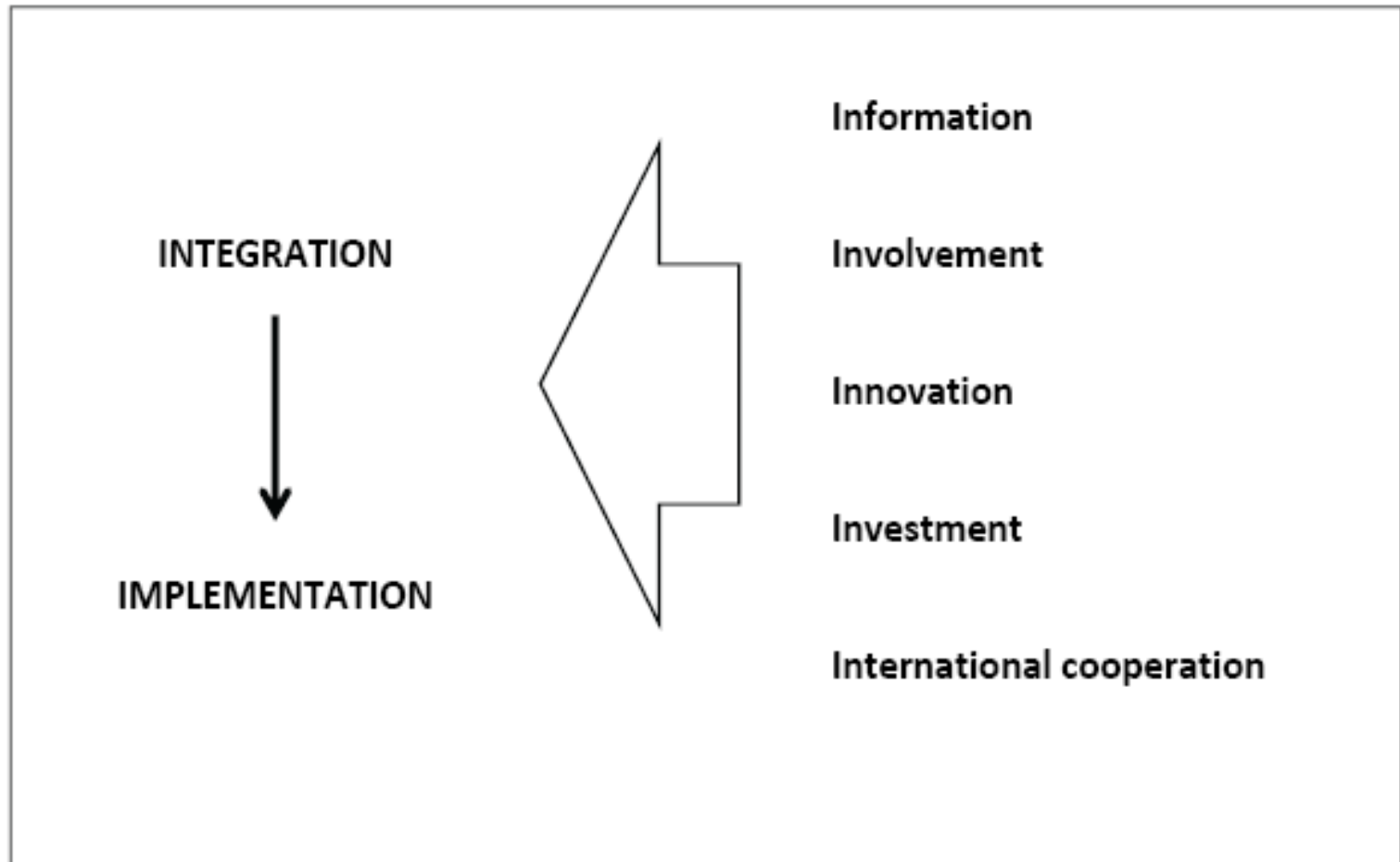


Figure 5.2. The Seven I’s

“Integrating the Integrated”: Common / DPSIR

Driving Forces-Pressures – State of the Environment- Impacts -Responses

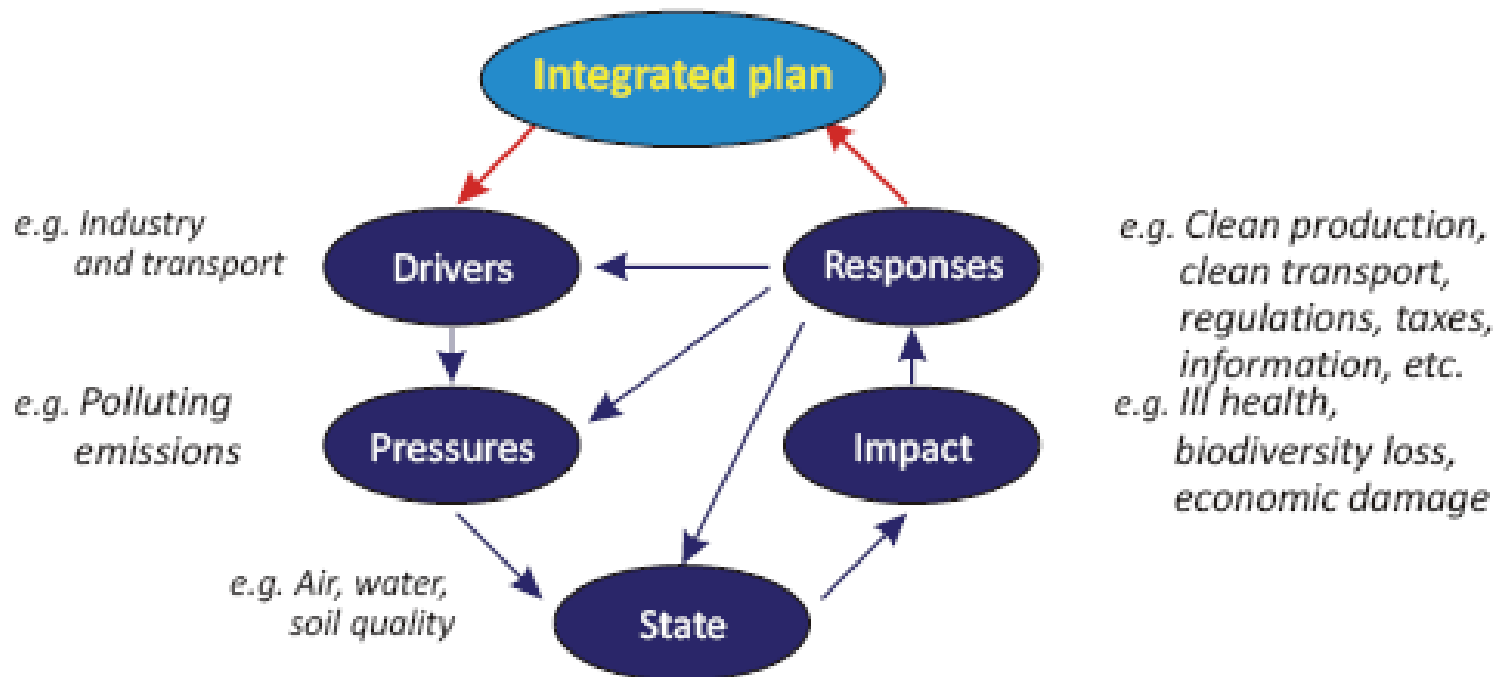


Figure 5.1. DPSIR Framework informs the preparation of the Integrated Plan

“Integrating the Integrated”: Common / Overall plan preparation

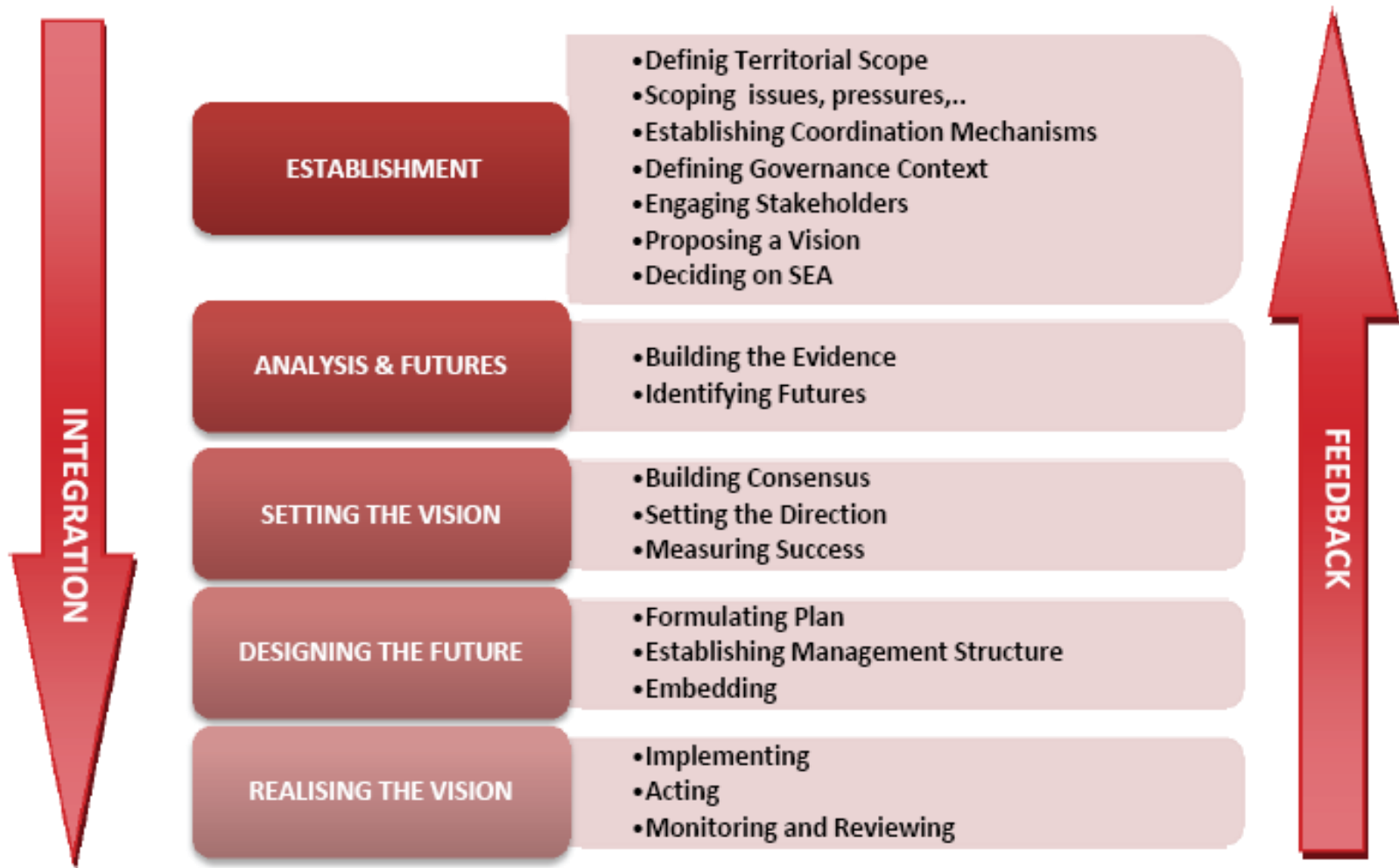


Figure 5.4. Plan preparation and implementation process: detail

“Integrating the Integrated”: In conclusion

IWRM, ICZM, Adaptation to Climate Change and Ecosystem Based Approaches if applied separately could result in overlapping and even competition among the different administrations responsible for their application. However, they are in essence complementary and mutually supportive. The proper way to be implemented are through an integrative methodological framework (IMF) which could enhance effectiveness, efficiency, coherence and economy in human and economic resources.

Thank you for your attention!