

Pre-conditions for the design & implementation of ecosystem-based management in aquatic ecosystems

Session 5 - Enabling factors to make ecosystem-based management happen for biodiversity conservation in aquatic ecosystems

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Objective of this presentation (& break-out group discussion)



≈ Reflecting on limiting factors & opportunities (changes) in prevailing institutional set-ups, and how these could be adapted for enhanced uptake, design & implementation of ecosystem-based management (EBM), as opposed to business as usual (BAU).

- Factors hindering the successful uptake of EBM approaches



- Pre-conditions that need to be ensured or reinforced for sound design & successful implementation of EBM





Getting it right with EBM may seem like
minding mice at a cross roads...



Widely held yet false beliefs within scientific & policy communities



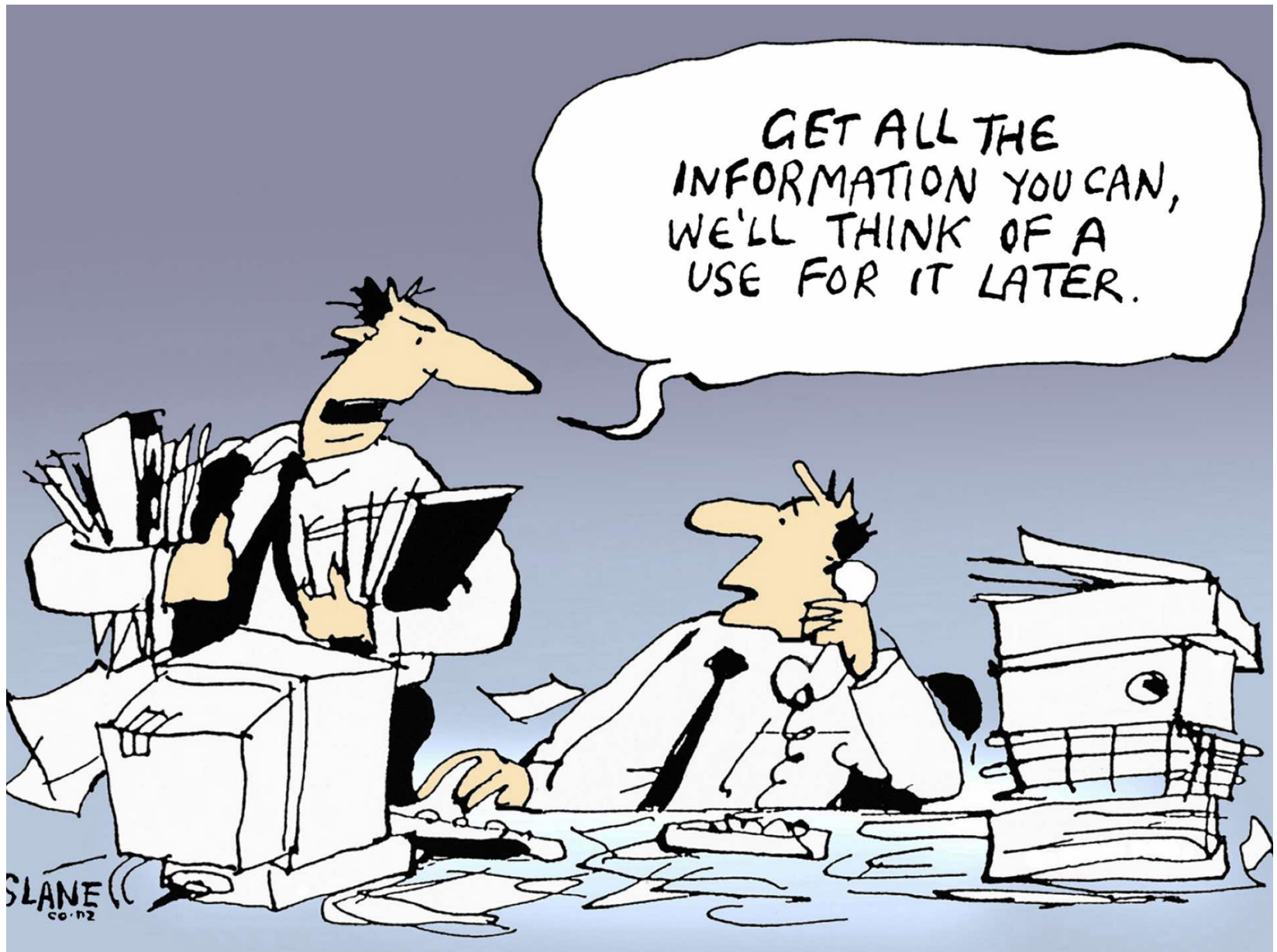
Legend #1: EBM lack a definition (& universal terminology), which hinders implementation

Legend #2: EBM require extensive data & sophisticated modelling

Legend #3: EBM is linked to naïve attempts to describe complex & adaptive systems

Legend #4: There are not enough resources to deliver EBM approaches

Legend #5: There is no clear mandate for EBM in prevailing EU legislation





“I want you to find a bold and innovative way to do everything exactly the same way it’s been done for 25 years.”



"This really is an innovative approach, but I'm afraid we can't consider it. It's never been done before."

Aaron Bacall



Min Heo for The New Yorker

We get interested in something to the point of distraction — usually by accident, and usually to a degree that the subject in question might not seem to merit.

- ≈ **No radical regime shift** // EBM: incremental, piecemeal process characterised not only by its sequential nature but also by its transitional costs.
- ≈ **Superior alternatives?** // Under two assessment criteria (i.e. cost-effectiveness, sustainability), EBM may convincingly appear as superior to BAU.
 - *The opportunity – EBM approaches may unveil potential win-win situations often overlooked (or simply downplayed) in the policy process since proposed measures under baseline are somehow limited, as they tend to focus on (partially) tackling individual issues.*
- ≈ **Life isn't all rosy** // Better outcomes (technical effectiveness, wide range of co-benefits), lower costs and enhanced contributions to robustness & resilience of the biophysical system, while necessary, are seemingly insufficient conditions for the uptake of EBM alternatives at first instance.
- ≈ **EBM & lock-in** // EBM alternatives go through a policy-making environment characterised by legacy issues: standard technological choices, supported by well-established & commonly accepted assessment methods.

The need for collective action & breaking silos



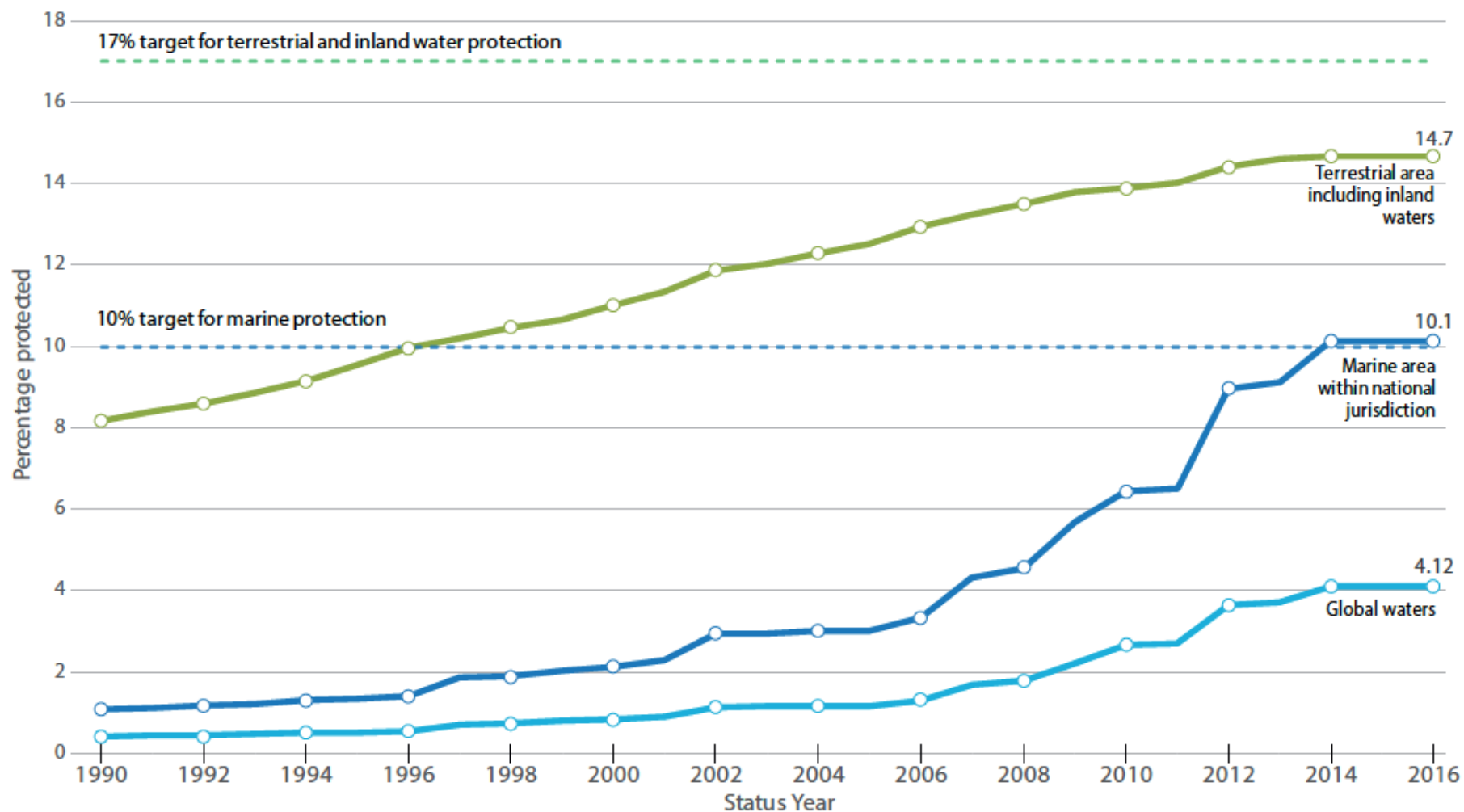
- ≈ EBM implementation is a **social & political challenge** rather than merely a **scientific / technical one** – the focus on ecosystems & ecosystem services entails a relevant departure from traditional practice on environmental policy & natural resources management.
- ≈ Institutions, technological choices, assessment methods & criteria and even the science-policy dialogue to date have been shaped by an **intense path dependency** and conventional management practices (incl. sectoral approaches) are not necessarily well-suited for innovation uptake.
- ≈ Comparisons between traditional and EBM approaches can be presented in terms of **single benefits vs. simultaneous co-benefits**.
- ≈ **Efforts to break silos** have already been done, and are (partially) visible in the design of prevailing EU policy (e.g. WFD, MSFD), even if the outcomes of those processes can be said to be disputable.

Some examples

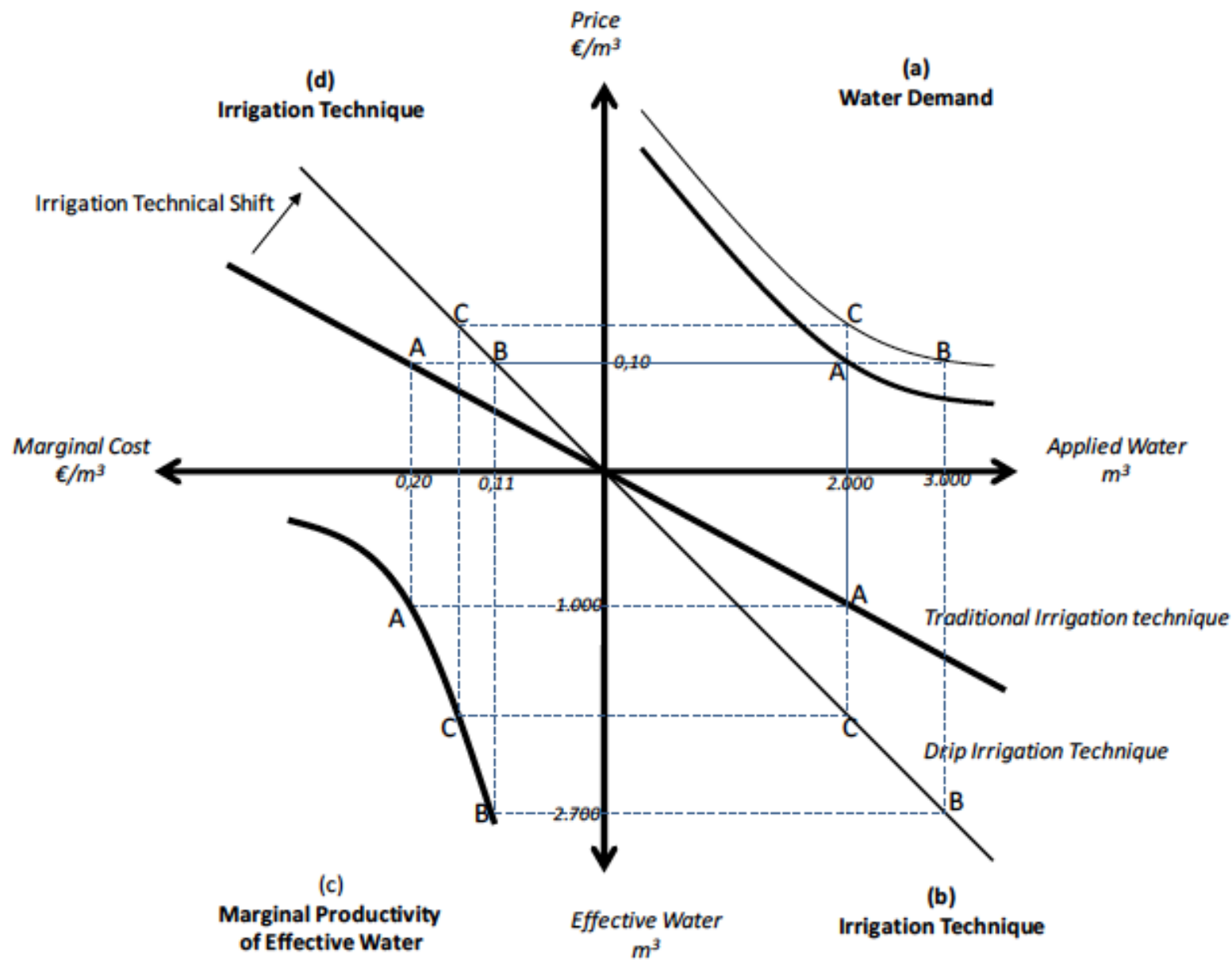


- ≈ Overall, more **strategic siting of MPAs** is needed – while ecological criteria is the norm for determining where to locate an MPA, studies suggest that often MPAs are situated in locations that are not under direct threat of loss (Burke et al, 2011; Edgar, 2011; Devillers et al., 2014).
- ≈ **Massive investments in water use efficiency in irrigation or the diversification of water supply sources** in 'closed' river basin districts may not (always) lead to enhanced resilience through long-term water security (Gómez et al., 2017).
- ≈ **Nature based solutions (such as nWRM)** seem preferable to conventional flood management alternatives but they are not significantly applied almost anywhere due to, *inter alia*, analytical biases.

Figure 1. **Trends in global marine and terrestrial protected area coverage over time**



Source: Adapted from UNEP-WCMC and IUCN (2016), *Protected Planet Report 2016*, UNEP-WCMC and IUCN, Cambridge United Kingdom and Gland, Switzerland.



What is actually needed for EBM?



- ≈ On **institutional** grounds, breaking institutional silos and building effective coordination mechanisms within (vertical coordination) & across policy domains (horizontal coordination).
- ≈ On **technological** grounds, seamless, comprehensive solutions rather than individual techniques to cope with one problem at a time.
- ≈ On **knowledge / assessment** grounds, mobilising and integrating a meaningful body of transdisciplinary scientific knowledge in a way that can be uptaken & co-produced by stakeholders to represent complex links between society & nature and support collective action responses.

Prospects for further adoption of EBM seem positively correlated with several factors



- ≈ Degree of institutional coordination in place
- ≈ Ability to assess & compare the effectiveness & robustness of integral responses
- ≈ Capacity to integrate knowledge on aquatic social-ecological systems in a way that can actually be taken up by stakeholders
- ≈ Social ability to put all this at the service of accountable, social debates in order to build collective actions that are perceived as superior and legitimate by all social agents, even in the absence of strong political will

Feed Quotes for thought

- ≈ Russell L. Ackoff (1919-2009): “Successful problem solving requires finding the right solution to the right problem. We fail more often because we solve the wrong problem than because we get the wrong solution to the right problem” (*Redesigning the future*, 1979)
- ≈ John M. Keynes (1883-1946): “The difficulty lies not so much in developing new ideas as in escaping from old ones” (*The General Theory of Employment, Interest and Money*, 1936)

