



Charting a Course through Wicked Problems:

An ecosystem-based management example from British Columbia, Canada

A *wicked problem* is a term used in social planning to describe a problem that is difficult or impossible to solve because of incomplete, contradictory, and changing requirements that are often difficult to recognize. The term "wicked" is used to denote resistance to resolution, rather than evil. Moreover, because of complex interdependencies, the effort to solve one aspect of a wicked problem may reveal or create other issues.¹

Ecosystem-based management (EBM), a term that came into favour about ten years ago, is seen by many governments and international agreements as critical to the sustainable use of natural resources. However, taking EBM from the conceptual to operational stage has proven to be daunting, so much so that in the marine realm it has been likened to a 'revolutionary' wicked problem, for which it is very easy to get lost within the complexities.²

In 2010 and 2011, the Pacific Marine Analysis and Research Association (PacMARA; a Canadian charitable organisation that focusses on training and facilitation in marine planning), convened two sequential workshops to navigate through what would be required in order to implement EBM in British Columbia. The product, *Charting a Course for Sustainable Prosperity* (the "Chart") provided an overarching architecture within which the central elements of EBM could be placed and their interdependencies better understood.

Experts from Federal, Provincial, and First Nations governments, academia, industry, and NGOs discussed the interaction of key policy elements including planning, legislation, regulation, enforcement, monitoring, and adaptive management. A Steering Committee shaped these ideas into the *Chart*, guided by revision and peer-review. A companion document to the Chart itself elaborated upon operational relationships among the elements, as well as providing background examples.

The charting process provided a valuable focus for discussions around the implementation of EBM. However, this was not a "one size fits all" solution, and each situation will involve unique characteristics and considerations, and furthermore, some of these will evolve over time. Nevertheless, the Chart is a way to map out and track such considerations and in this case helped direct a strategic analysis on what should be done next; i.e. an implementation plan.

¹ Adapted from the Wikipedia definition, July 2014.

² Berkes F. 2012. Implementing ecosystem-based management: evolution or revolution? *Fish and Fisheries*, 13(4): 465-476.

The basic format of the Chart is straight-forward, identifying a set of *Enabling Outcomes* that lead to a set of desired *Strategic Outcomes*, that ultimately, meet the “People-Planet-Profit” triple bottom-line, *Sustainable Prosperity* (Figure 1).

For each planning / management problem, one works from right to left, starting with the Strategic Outcomes, which help to identify the context-specific Enabling Outcomes. Depending on the level of customisation, the Chart’s architecture can contribute to

wicked problem-solving in different ways. With minimal context, it can help engage interested groups in understanding the complexities of the issues and begin to highlight trade-offs. A fully developed and scored architecture can provide the guidance necessary to promote comprehensive planning, implementation, management, and monitoring of the desired outcomes (e.g., Figure 2).

For each element in the Chart, checklists can be applied to the activities of assessing planning and management progress to date, suggesting linkages and governance structures, assigning roles and responsibilities to individuals /agencies / organisations, and prioritising remaining activities (Box 1).

By taking an itemised, element-by-element approach, the architecture checklists provide a more easily understood overview of the previously intractable complexities of the wicked problem, making the objectives and outcomes more transparent and

accessible. That said, most wicked problems will remain ‘wicked’ and will sooner or later try to escape the confines of their boxes and ovals. Nevertheless, with a Chart in place, it is much easier to revise elements of the mapped problem, and adapt as necessary.

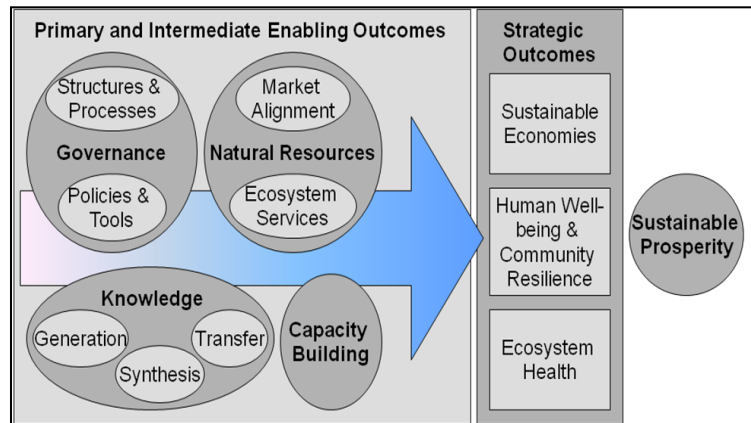


Figure 1: A diagrammatic view of the Chart’s architecture showing Capacity Areas (grey bubbles) that contain the Enabling Outcomes necessary to achieve the desired Strategic Outcomes that combine to create Sustainable Prosperity. Outcomes are ordered left to right, (shaded blue arrow). The detailed outcome map for the Governance Area is shown in Figure 2.

Box 1. Example checklist - Status of management plan:

- A. There is no management plan for the initiative (Score = 0)
- B. A management plan is being prepared but is not being implemented (Score = 1)
- C. An approved management plan exists but it is being partially implemented (Score = 2)
- D. An approved management plan exists and is being implemented (Score = 3)

Additional points for planning:

- E. The planning process allows adequate opportunity for key stakeholders to influence development of the management plan (+1)
- F. The management plan is tied to the development and enforcement of regulations (+1)

The full Chart is available here in overview and expanded form: <http://pacmara.org/tikiwiki/>.

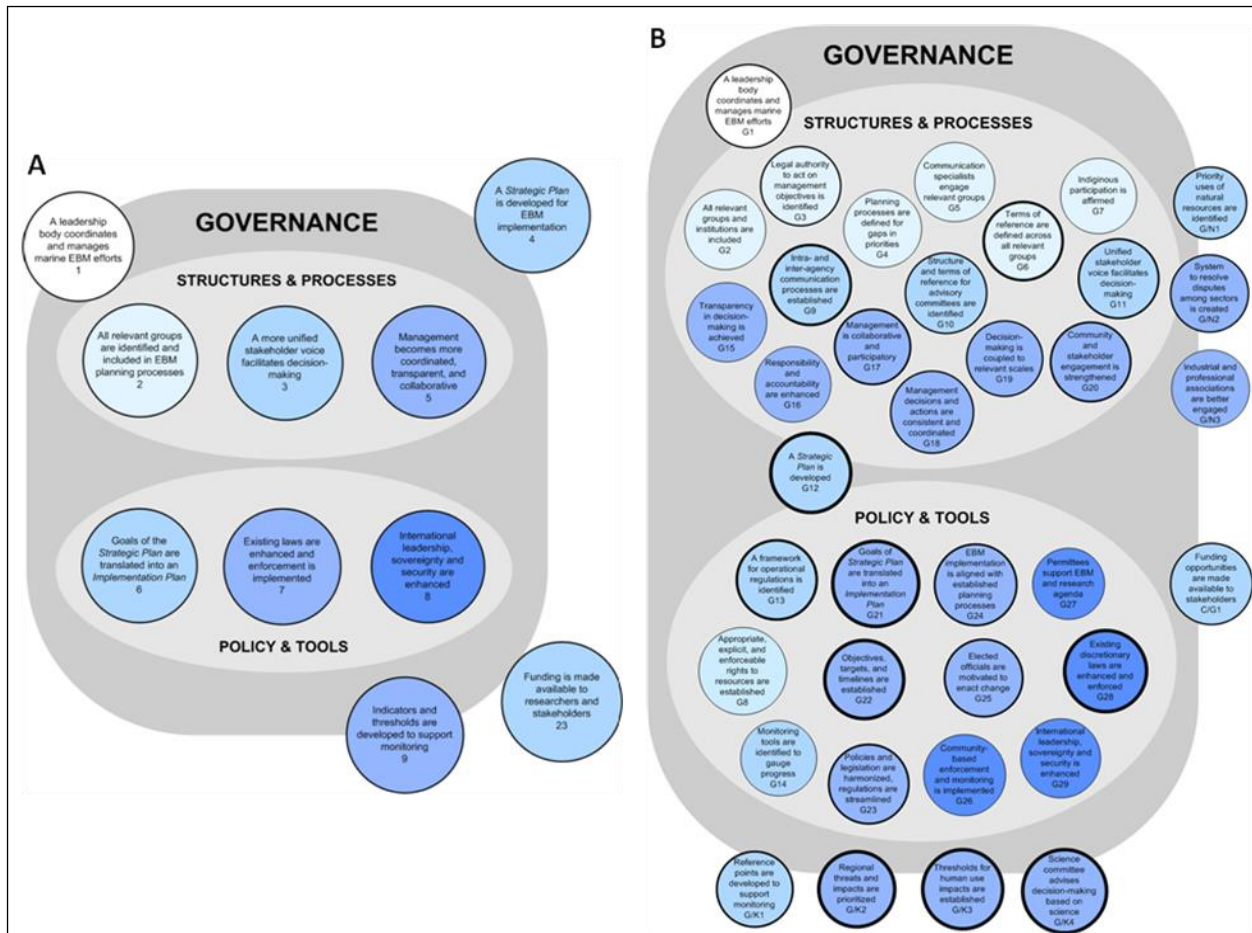


Figure 2. The Governance Capacity Area shown in (A) overview, and (B) expanded forms. Colours indicate precedence from early (light blue) to later (dark blue) likely implementation stages. Numbers correspond to elaborations in the Companion Document. The Natural Resources, Knowledge, and Capacity Building areas of the Chart similarly expand.