



The use of economic valuation in coastal and marine decision-making

Jean-Baptiste Marre, Olivier Thebaud, Sean Pascoe, Jean Boncoeur, Louise Coglán, Sarah Jennings

What is ecosystem services valuation?

Ecosystem services valuation (ESV) is a set of methods to estimate the economic value of ecosystem services. Very little is known about the actual use and influence of ESV in decision-making even though its purpose is specifically to support ecosystem management.

Our research

We developed nation-wide online surveys that collected information about coastal and marine managers' perceptions regarding past and present use of ESV (88 respondents) and examined the perception of the general public (256 respondents) regarding ESV and its usefulness in coastal and marine management. This is important in view of their increasing participative role in decision-making process.

We compared the different groups to shed light on the expectations and preferences of both sides, and to provide guidelines to foster the use of ESV in coastal and marine management.

Results

Public vs decision-makers' awareness of ESV and its uses

- 80% of individuals from the general public had never heard about ESV studies applied to coastal and marine ecosystems, whereas 99% of decision-makers were aware of ESV and more than half of them already used ESV in their work.
- Most people in both groups thought that ESV was necessary or useful (Figure 1). Furthermore, the groups agreed on the purposes of ESV: for communication and advocacy, for cost-benefit analysis, and as a basis for discussion in decision-making processes.

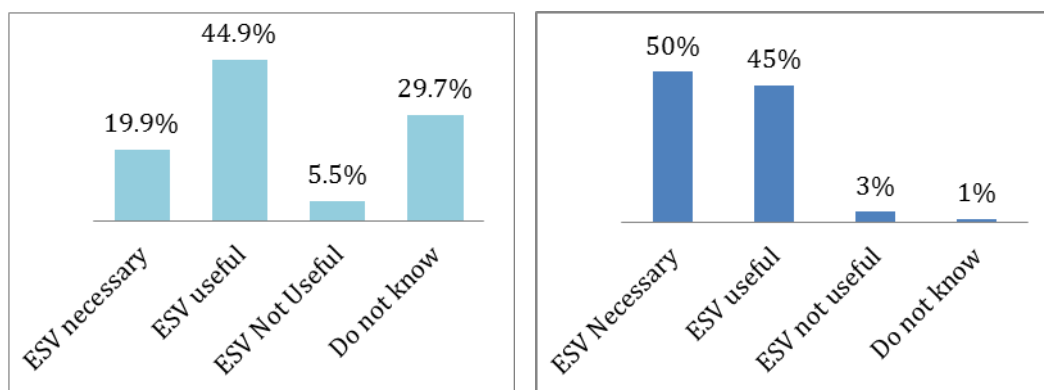


Figure 1 Stated usefulness of ESV: proportions of general public (left, n=256) and decision-makers (right, n=88)

- Both groups agreed that the validity of ESV is not accepted widely enough and identified concerns with ESV that limit its acceptability. Limits (mostly cited by the decision-makers) were that: ESV is too simplistic in view of ecosystem complexity, methods and techniques for ESV

need improvement, and the decision-making framework/guidelines may not be conducive to its use.

- Both the general public and decision-makers think ESV is important for: provisioning services involving commercial activities and most regulating services (e.g. water quality/waste assimilation, storm protection/shoreline protection, habitat for species). In contrast, estimating option and non-use values were perceived as of low importance or not important at all.
- Even though the general public perceived cultural ecosystem services as the most compelling reason for ecosystem preservation, they did not think these should be quantified in monetary terms.

Actual use of ESV in decision-making on coastal and marine management

- ESV has been used both as a way to communicate and raise awareness (Figure 2), and as a way to support evaluation and discussion during decision-making processes in various contexts (Figure 3).

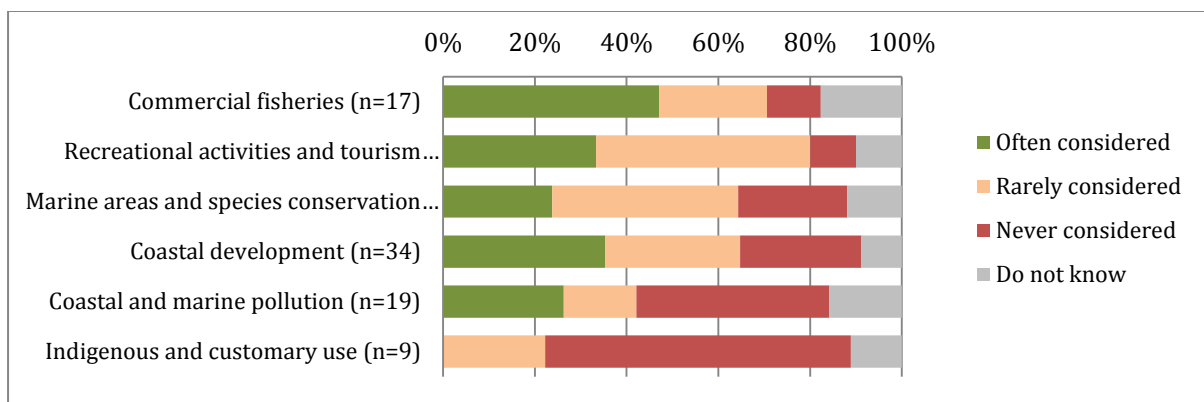


Figure 2 Use of ESV in communicating and raising awareness

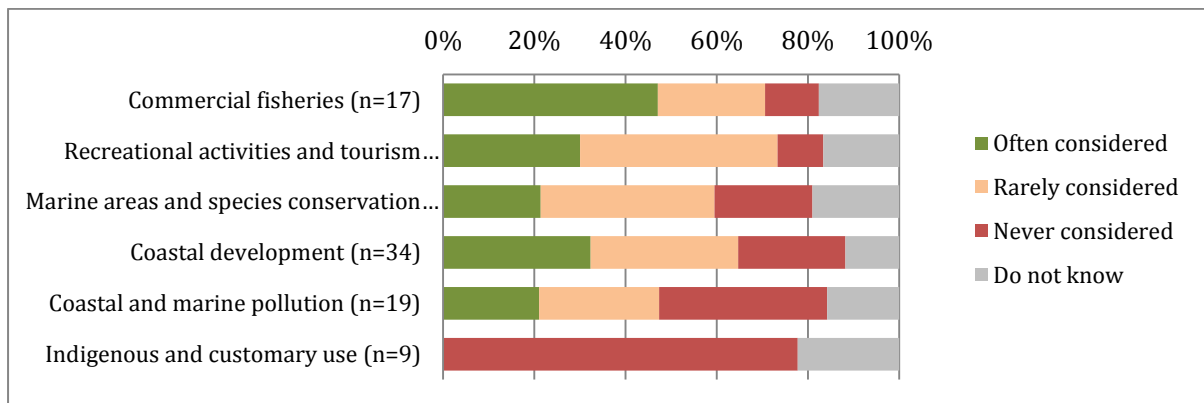


Figure 3 Use of ESV in evaluation and decision-making

- ESV is much less frequently used to establish economic or financial instruments, or compensation (Figure 4).

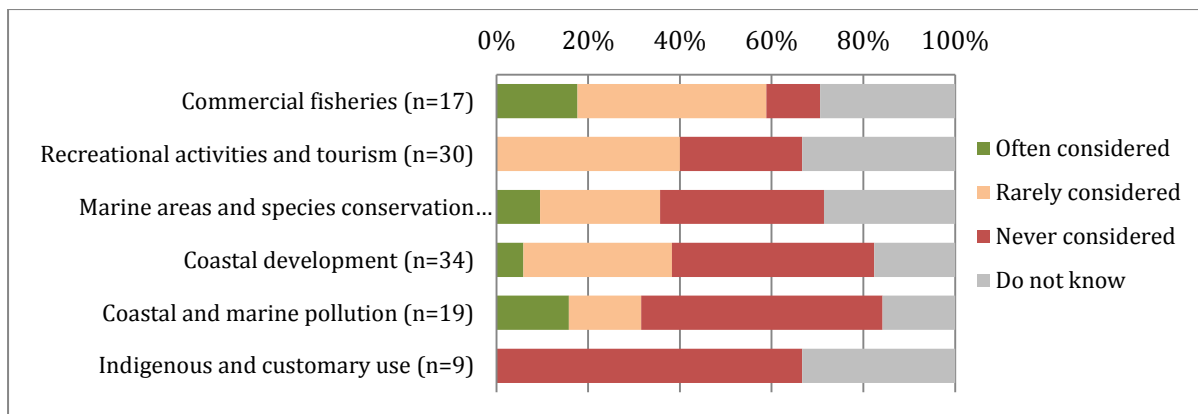


Figure 4 Use of ESV in establishing taxes, subsidies, fees or damage compensation

- Even though ESV has been considered in decision-making processes, it was not often perceived as having a significant impact on policy or management.

Conclusion

- ESV was globally perceived as being useful by decision-makers involved in coastal and marine management in Australia, and as such was considered in various ways depending on management contexts, sometimes with significant impact on policy or decision-making.
- There is still a need to make ESV more accessible, reliable and trustworthy, especially in the case of regulating services such as storm protection, water quality regulation, or the role of habitats.
- More work is required that focuses on the use of ESV in coastal and marine management decision-making for various ecosystem services, worldwide and at different scales. This requires continued development of decision frameworks and guidelines that would allow ESV to be more widely used.
- Communicating and informing the general public about ESV objectives and results is essential to both guarantee a successful and informed participation of the general public in the decision-making process whenever necessary and a better transparency in decisions.
- Our results raise the issue of the differences between the systems of knowledge of the academic and the decision-making worlds in terms of language and understanding of management issues, and in our case, between their understanding of valuation techniques and the associated theoretical background. This emphasises the importance of strategies and practices to enhance collaborations between researchers and decision-makers, as well as research transfer, uptake and impact within policy contexts.



Further information:

Sarah Jennings

Tasmanian School of Business and Economics

University of Tasmania

Sarah.Jennings@utas.edu.au

The NERP Marine Biodiversity Hub is supported through funding from the Australian Government's National Environmental Research Program, administered by the Department of the Environment. Our goal is to support marine stakeholders in evidence-based decision making for marine biodiversity management. Stakeholders include the Department of the Environment, the Australian Fisheries Management Authority (AFMA), the Australian Petroleum Production and Exploration Association (APPEA) and the Integrated Marine Observing System (IMOS). (February 2014)

