

Chapter 5—Inclusion of social and economic considerations into decision-making

The third term of reference for the BAP sought recommendations for improving the inclusion of social and economic considerations into decision-making for marine reserves, with particular regard to their future management.

Introduction

The inclusion of social and economic considerations into decision-making on reserve design and zoning attracted commentary from almost all stakeholders, often invoking different value systems, perspectives, priorities and time frames (for example, current versus future benefits).

Some argued that insufficient account was taken of socio-economic factors in the design and zoning of reserves; others argued too much account was taken of these factors to the detriment of conservation outcomes. Some argued for greater prominence of and focus on social and economic outcomes over biodiversity conservation objectives. Others asserted that biodiversity conservation, as well as being a primary objective of marine reserves, delivered significant social and economic benefits. Even in situations where individual businesses operated entirely in marine reserves, the social and economic impacts and benefits of particular reserve configurations were difficult to estimate.

Commentary in the scientific literature maintained that the estate failed to achieve the objective of being comprehensive and representative because of the weight placed on socio-economic factors.^{18,19,20} A number of submissions to the CMR Review also made reference to these criticisms, and the comprehensiveness of the CMR estate is discussed in the ESP report.

Primary concerns relating to socio-economic impact have included:

- Adequately assessing the benefits or costs of a specific decision to include or exclude an activity in a zone
- Establishing and promoting the value of marine reserves for future wellbeing
- Protecting and fostering regional businesses and communities.

In addition to the issues raised about direct economic impacts on existing users of reserves, community representatives and non-government organisations raised related issues, often with a broader or indirect context, including community concern about ocean health, the value for future generations of conserving ocean resources, and the sustainability of extractive activities in the ocean. These concerns were reflected in stakeholder meetings, written submissions and the responses in the online survey. The

¹⁸ L. M. Barr and H. P. Possingham. (2013). Are outcomes matching policy commitments in Australian marine conservation planning? *Marine Policy* 42, 39–48.

¹⁹ R. Devillers, R. L. Pressey, A. Grech, J. N. Kittinger, G. J. Edgar, T. Ward and R. Watson. (2014). Reinventing residual reserves in the sea: are we favouring ease of establishment over need for protection? *Aquatic Conservation: Marine and Freshwater Ecosystems* 25(4), 480–504.

²⁰ R. Pressey. (2013). 'Australia's new marine protected areas: why they won't work.' Available at <http://theconversation.com/australias-new-marine-protected-areas-why-they-wont-work-11469> [accessed 1 July 2015].

need for greater common ground, and the value of providing a platform towards this objective, was demonstrated to the BAP at each of the eight multi-sector forums held during the consultation phase of the review. Post-meeting feedback indicated that these forums were well regarded, as for some they were the first opportunity to hear and appreciate the different concerns, expectations and aspirations of other stakeholders.

Regional engagement of stakeholders is discussed further in Chapter 6. The potential social and economic implications of alternative zoning options were major considerations in the CMR Review. Every existing zone (and its associated set of allowed, allowable and prohibited activities) impacts one or more existing or potential interests, and virtually no alternative possible zoning option is without some positive or negative environmental, social and economic consequence.

Commercial fishing

The commercial fishing sector was most directly impacted by zoning arrangements that exclude or constrain fishing gear types. The primary source of advice for government in assessing the potential economic consequences of zoning decisions on this sector was the ABARES, which assessed the displacement of catch and gross value of production (GVP) for each fishery group in each of the CMRs in the lead-up to the 2012 proclamation.

The BAP drew on the input from consultations and submissions in conjunction with updated ABARES assessments of GVP impacts on commercial fisheries as an important input in considering potential zoning options. The ABARES assessments were based on operators' catch data over many years, and were comprehensive and relatively consistent within a jurisdiction.

The BAP heard and recognised that this approach was heavily criticised by the fishing industry, which maintained that GVP figures for Australia's fishing industry under-represented the true value of Australia's commercial fisheries and failed to capture downstream value-adding activities and other contributions from associated fishing industry activities (for example, onshore processing, repairs and maintenance, retail and restaurant sales). The use of estimated income measures to define economic impacts of zoning was seen by many commercial fishing representatives as an inadequate basis on which to make decisions that affect their future. These concerns were set out in industry submissions and raised in stakeholder meetings.

More specific criticisms of the use of GVP included the time period used to estimate average GVP, perceived either to be too short, or to cover a period when a fishery was operating or behaving in a unique or unusual way; the reliability of catch data (notwithstanding that these were derived from fishery logbook reporting); and the natural variability of catch across the geographic range of a fishery or a business, which could significantly alter the estimated impacts on a particular spatial area within that broader region.

Business costs were another major concern, including increased fuel costs if fishers were displaced and had to travel further to fish, and fixed costs such as licence fees which would fall more heavily on remaining operators as others left the industry. It was further noted that the progressive changes in fishing gear technology and the associated cost of implementing these and other compliance measures, particularly to reduce bycatch and mitigate other environmental impacts, were not included in assessments of economic impact of the establishment of and constraints created by marine reserves.

Many fishers and their representatives raised concerns and issues with the past structural adjustment policy associated with the proclamation of the reserves. These were outside the review's terms of reference.

Despite the criticisms described above, and lacking an alternative approach, the BAP relied on recently updated ABARES assessments of catch and GVP impacts on commercial fisheries in its consideration of proposed zoning options. These assessments were a vital input into BAP decisions to retain, discard or modify zoning options.

Recreational fishing

Many assertions were made about the social and economic benefits of including, and impacts of excluding, recreational fishing. This is an area where data on effort, impact and value, especially in Commonwealth waters, is clearly deficient. The vast majority of recreational fishing occurs in state waters, and much of the available information on recreational fishing is based on experience and activity from coastal and nearshore environments. It is not clear to what extent this can be translated to the more remote areas that comprise much of the CMR estate.

Lessons from coastal experience, however, may be an important guide to how recreational fishing is assessed and managed in the future. A number of reports identify recreational fishing catch as comparable to or exceeding commercial catch in coastal systems.²¹ One study reported similar findings for the impacts of offshore pelagic sports fishing.²² The ESP considered recent scientific publications on the impacts of recreational fishing and provided its findings to the BAP for its consideration in potential zoning options. The BAP considers the information gap on the effort, impact and socio-economic value of recreational fishing in CMRs to be significant and a matter that needs to be addressed as a priority.

Prospective fisheries

The Regional Panels were made aware of a number of prospective fisheries that were in varying stages of development, from early exploration to testing of gear types and stock assessment, and potential expansion of existing fisheries into new areas. The issue of assessing the opportunity cost of excluding a prospective fishery from a zone is complex, given that catch quantity, quality and distribution, prices and costs are largely speculative. Mindful of these uncertainties, fisheries prospectivity was not discounted in the consideration of zoning options by Regional Panels and in the later refinement of options.

Oil and gas prospectivity

While information on the location of mining, oil and gas prospectivity was available, its potential economic value cannot be reliably estimated for the purposes of the CMR Review and was therefore not considered by the review. No direct existing mining, oil or gas industry interest is displaced by recommended zoning options. Some recommended

²¹ J. Ford and P. Gilmour. (2013). *The state of recreational fishing in Victoria: a review of ecological sustainability and management options*. Report to the Victorian National Parks Association, Melbourne.

²² M. Zischke, S. P. Griffiths and I. R. Tibbetts. (2012). Catch and effort from a specialized recreational pelagic sport fishery off eastern Australia. *Fisheries Research* 127–128, 61–72.

zones, including MNPZ and HPZs, which exclude oil and gas and mining activities and a range of other commercial activities, do cover areas of known petroleum prospectivity.

Non-extractive economic value

A number of stakeholders made reference to the social and economic benefits that could arise from the exclusion of extractive activities from MNPZs and SZs. The direct economic benefits associated with non-extractive tourism were highlighted. A number of stakeholders provided data and analysis on the current and potential value of non-extractive economic activities such as dive tourism. Broader benefits from the provision of ecosystem services such as production of oxygen, carbon dioxide storage, and buffering of climate change impacts were also raised in support of excluding extractive activities.

A number of submissions made the point that the benefits of marine reserves do not arise purely from direct economic uses and activities such as commercial fishing and oil and gas extraction (that is, market values). Several submissions and stakeholders referred to studies that estimated the non-visible economic benefits of marine reserves arising from provisioning, regulating, habitat and cultural services.^{23,24} Estimates for the annual non-market value of the proposed South-west CMR Network,²³ and for the Marine National Park component of the CMR estate²⁵ were comparable to or exceeded the market value of existing commercial activities.

Socio-economic considerations in future decision-making

The CMR Review makes a number of further observations and recommendations that could improve how social and economic factors can be better included in future decision-making.

Every management decision has a socio-economic impact. Every decision-maker should be aware of this dimension. Decisions about prohibiting, allowing or constraining uses and activities requires careful judgment. Relevant data may be lacking or inadequate.

Clear management objectives for a reserve and for each zone will be essential to guide and inform future decisions about uses and activities in reserves. Building stakeholder trust and confidence and employing a transparent decision-making framework that draws on available data and engages affected parties are also essential.

Impacts, costs and benefits cannot be adequately assessed (for example, the impact of excluding an activity or the benefits of its inclusion) if adequate baseline data is not available. The social and economic dimensions of recreational fishing are an example of where better baseline data would be useful. The definitions and methodologies for collecting baseline data must be broadly accepted by managers and those affected. Data needs and priorities should be clearly linked to reserve objectives and desired outcomes, and developed in consultation with affected stakeholders and their communities. Some of

²³ The Allen Consulting Group. (2009). *The economics of marine protected areas: Application of principles to Australia's South West Marine Region. Report to the Conservation Council of Western Australia.* The Allen Consulting Group, Melbourne.

²⁴ L. Eadie and C. Hoisington. (2011). *Stocking up: securing our marine economy.* Centre for Policy Development.

²⁵ C. Hoisington and L. Eadie. (2012). *Preserving our marine wealth: an economic evaluation of the proposed Commonwealth marine reserves network.* Centre for Policy Development.

this data will come from specific monitoring activities and research projects, and some is likely to be provided by or obtained from other sources including users. Business information collected by stakeholders is vital, as is data collected through approaches such as citizen science, government agencies, and other independent sources. More consistent approaches to data collection, especially between jurisdictions, would assist more consistent decision-making.

Industries that are based on natural resources that are highly variable in space and time pose particular challenges in this regard. Data that is averaged over long time frames (that is, more than a decade), is preferable to that from shorter time frames, as long as natural variability and underlying trends at a location, and in quantity and quality of the resource base, can be accounted for in a transparent and generally understood and accepted way. Often the potential resource base (prospectivity) that creates opportunity for growth and development is unknown or not well known.

The development of reliable models that predict how components and dependencies of marine and human systems intersect and interact would help managers deal with the complexity that arises from the variability and possible trends in natural resource distribution and abundance, the interdependencies of different species and trophic levels, and the array of economic and social interests that depend to some degree on these resources. Such bio-economic modelling could assist in the design and testing of hypotheses that consider potential impacts, costs and benefits and aid future decision-making processes.

Economic and social activities and the benefits and impacts of operating in marine reserves will change over time. Businesses and consumer interests will evolve; knowledge about the impacts, threats and pressures on a reserve will improve; new technologies and more efficient processes will be developed; and management of the reserve estate will need to maintain a degree of flexibility to consider and accommodate new uses and users, as well as to decide whether a use could be, or is no longer, appropriately undertaken in a reserve. Apart from any impacts on biodiversity and the conservation values of a reserve, such decisions must take account of relevant social and economic data.

The non-market benefits of the CMR estate should be more systematically and rigorously quantified. General models of ecosystem product and service provision, and overseas studies and experience, may be useful in this regard; however, it is likely that more accurate estimates will need specific surveys, data and research based on the particular circumstances of the CMR estate and Australia's marine environment. These benefits should be communicated to users and the general public interested in the overall value of the CMR estate.

Estimation of non-market value and the potential for new or additional non-extractive economic activities such as marine tourism in the CMR estate need to be based on a more robust basis than extrapolation from coastal and inshore experience, which should be regarded with caution. For example, the relatively calmer and more accessible coastal waters do not always compare well to the open ocean conditions of the vast majority of the CMR estate. Several of the tourism operators working in the Coral Sea referred to the limited number of days when weather and wave conditions were favourable enough to operate—advising that they only experienced these conditions on 100 to 120 days a year. Part of the attraction of their products and services was environment quality and

remoteness and the low likelihood of encountering others. These values could be at risk if the scale and scope of these activities substantially increases.

Community and consumer views and broader social and economic dynamics are relevant to the management of such a large estate for the public good. With rising public and consumer concern about food safety and quality, and the impacts of food production and other economic activities on the environment, there is value and considerable benefit in encouraging businesses that obtain products and services from marine reserves to seek appropriate certification for their products and services, and to promote these products and services as being derived from well-managed reserves.

There is wider social and regional benefit to be gained from the marketing and promotion of high-quality, locally caught, sustainably harvested seafood. This can contribute to and support local, regional and national branding of Australia's destinations and food offerings, and can complement other tourism offerings in regions adjacent to CMRs. The BAP encountered a number of excellent and inspiring examples of local, regional and national businesses committed to sustainable harvesting and local and regional employment that were delivering quality products to local and international markets. Wider regional, social and economic benefits from the operation of these businesses (such as contributing to a region's attractions and brand or increasing visitor numbers), in addition to direct benefits such as employment, were evident.

As discussed in the next chapter, proposed management actions that are raised in consultative forums in sufficient time and detail to allow for effective stakeholder consideration and input can better inform decision-makers and reduce the risk of an action unknowingly and adversely affecting a socio-economic interest, and increase the likelihood of a positive socio-economic outcome.

Assessment of the long-term socio-economic benefits and impacts of the zoning and management arrangements across the CMR estate will be essential to ensure that future management and zoning decisions are well founded. Socio-economic data must be collected as an integral part of the ongoing monitoring of the reserves.

Recommendations

BAP Recommendation 5.1: Given the multiple and sometimes disparate perspectives on the influence and importance of socio-economic factors in CMR design, the DNP should foster and support an ongoing dialogue with stakeholders to build a greater and shared understanding of their concerns and aspirations.

BAP Recommendation 5.2: The Australian Government, in collaboration with the recreational fishing sector, should invest in building a better understanding of impacts of recreational fishing (including the charter fishing sector), in CMRs and Commonwealth waters more generally to better inform future management decisions.

BAP Recommendation 5.3: Good baseline social and economic data is vital, and must be acquired systematically with wide and transparent stakeholder engagement as part of an ongoing program of monitoring and evaluation for the CMR estate.

BAP Recommendation 5.4: Recognising the statutory primacy of biodiversity conservation in management priorities, the DNP should nonetheless ensure that socio-economic considerations are included as key inputs to decision-making for CMR management.

BAP Recommendation 5.5: The benefits of market activities in, and non-market values of, the CMR estate should be evaluated to develop more reliable estimates on which future management decisions can be based. These market and non-market benefits of the estate must be communicated to stakeholders and the general public.

BAP Recommendation 5.6: The DNP should engage with national and regional tourism bodies and the commercial fishing sector to build a shared understanding of the value of a well-managed marine environment and opportunities for promoting locally caught, sustainably harvested seafood in the context of national and regional tourism branding (see also BAP Recommendation 8.5).