

Create an explicit focus on the blue economy throughout the marine science system



Introduction

The National marine Science Plan states that its aspirations “will not be realised with ‘business as usual’ marine science”, and that “Creating an explicit focus on the blue economy throughout the marine science system will be key to our success”. It goes on to say that in order to do this we will need to:

- *increase the collection and analysis of social and economic data, and develop the methods to allow the full integration of social, economic, biological and physical data on marine systems into decision-making by governments and industry as part of a fully integrated approach*
- *accelerate the innovation cycle by increasing government investment in developing and applying diverse, non-traditional science to marine problems and spawning new technological solutions, services and products, such as bio-prospecting and bioproducts, eco-engineering and geoengineering, and eco-restoration*
- *facilitate placements of scientists in business, and managers in research, as part of their education and training*
- *plan large, long-term research, with end users involved from concept to delivery*
- *focus marine science effort at the front end of regional development cycles, like those we are about to see in northern Australia.*

All eight high-level recommendations in the Plan are aimed in some way at driving the development of Australia’s blue economy. So we need to be clear about what needs to be addressed under this specific recommendation i.e. that will not be addressed through the other seven in combination.

For the purposes of starting the discussion at NMSC, it is suggested there are three things to be addressed here:

1. full integration of socio-economics
2. accelerating the innovation cycle, and
3. indigenous engagement (with emphasis on northern Australia).

Discussion

1. Full integration of socio-economics

Australia’s Blue Economy encompasses all aspects of the marine, maritime and coastal regions that have a direct or indirect impact on the economy.¹ The National Marine Science Plan (NMSP) included the by-line ‘driving the development of Australia’s blue economy’, and highlighted the role of marine science in balancing the economic potential of Australia’s vast marine estate with the equitable use and sustainability of our precious marine environment.

Without further initiatives, however, the place of marine science in the growth and innovation of the Australian Blue Economy could be seen as only reactive or piecemeal, and potentially dismissed as merely incidental to other drivers.

¹ CSIRO & DFAT, Innovation for the Blue Economy, 2015, 1

Since the NMSP was launched, there has been a convergence of policies and agendas centred around the National Innovation and Science Agenda (2016). Its broader agenda encompasses other policies including the National Research Infrastructure Roadmap (2017), Research Engagement for Australia (2016), and Australia's National Science Statement (2017). With such policy drivers gaining momentum, comes a responsibility for leaders of marine science to take advantage of the energy, and to further develop the National Marine Science Plan and its broader economic promise with a coherent strategy.

The National Marine Science Plan acknowledges that marine science does not exist within a silo; nor should conversations regarding the advance of, and benefits derived from, Australian marine science be heard only within the echo chambers of well-known scientific institutions. The engagement and impact of scholarly and institutional activities is increasingly judged upon the societal benefit of those activities (National Innovation and Science Agenda et al). With a broader engagement from Australia's marine policy, law, social, economic, demographic and other 'non-scientific' experts and practitioners, the NMSC can progress the Plan into the advancing policy agenda.

A call for broader disciplinary engagement is often met in broad terms, however little attention is given to what disciplines outside of science should be engaged. The Australian Academy of Social Sciences, for example, consists of no one called a 'social scientist', but rather a wide swathe of disciplines, including: Demography, Geography, Sociology, Management, Accounting, Economics, Economic History, Marketing, Statistics, History, Law, and Political Science.² Such a richness of knowledge can only lead to greater uptake and impact of the excellence in marine science. It is recognised the NMSC has representatives of 'other' non-scientific disciplines, however to engage those that can assist more in bringing the NMSP Agenda into the next stage, the next steps and discussion could include:

- Identification of experts within fields relevant to the pursuance of the NMSP Blue Economy Agenda, including policy practitioners already in government. This could be done as a desktop analysis of who is who in the blue economy 'zoo' so that we can better define it.
- The convening of a 'working group' that meets periodically to advance the agenda of the blue economy within, and beyond, marine science.
- A national workshop on the blue economy bringing together Australian practitioners from all disciplines to complement the work already done by the NMSP.
- Engagement at marine-related conferences to open a better dialogue between marine scientists and other disciplines and practices .

It is also important to note that since the Plan was launched, the latest AIMS Index of Marine Industry has come out with a contribution of "more than \$74 billion directly and indirectly to the annual national gross domestic product". This is up from the \$47 billion quoted in the Plan, and well on the way to the \$100 billion by 2025 predicted by the Plan. It will be important to understand AIMS' plans for the index and how NMSC should factor it into its future planning cycles.

2. Accelerating the innovation cycle

As noted above, the National Innovation and Science Agenda (NISA) provides opportunities "for leaders of marine science to take advantage of the energy, and to further develop the National Marine Science Plan and its broader economic promise with a coherent strategy". This is particularly relevant in the innovation space.

² <http://www.assa.edu.au/about-the-academy/>

NMSC did review that NISA at its April 2016 meeting, but this was basically on one-off discussion. There is no ongoing, active consideration of national level opportunities in the innovation space.

This topic is on the agenda at the second Forum for Operational Oceanography (FOO), being held in Fremantle on 25-27 July – see [here](#). The final session on the morning of Thursday 27 July has been shaped to stimulate discussion on this issue – see below.

Final Session - Looking Ahead		
9:00-9:25	Operational ocean observing for offshore carbon capture and storage	Nick Hardman-Mountford, CSIRO
9:25-9:50	Australia has a national advantage in ocean monitoring, with huge requirements and world leading science. Can we add industry and commercialisation to create a virtuous circle?	Neil Hodges, BlueZone Group
9:50-10:15	The National Innovation and Science Agenda meets a growing blue economy – ‘opportunity knocks’	Tim Moltmann, IMOS and National Marine Science Committee
10:15-10:30	Looking Ahead - Q&A Session	

It is proposed that we ‘see how it goes’ at FOO, then report back to NSMC at the next meeting.

One other thing not to lose sight of is the potential to conduct an Ocean Enterprise Study for Australia. This has been done in the UK and was recently undertaken in the US (see [here](#)), with planning underway in Canada. The US methodology is essentially published in their report and so is accessible to us.

3. Indigenous engagement (with emphasis on northern Australia)

At the last NMSC meeting we began to discuss the fact that the committee has no strategy for indigenous engagement. It is however mentioned several times in the Plan e.g. on page 15, where Indigenous Australians are identified as part of the Community with references to increased involvement in marine research & monitoring, recognition of cultural connection with ocean, and collaboration between indigenous and western knowledge.

A workshop on Indigenous Engagement was held in Darwin on Friday 7 July after the AMSA conference, sponsored by the NESP Marine Biodiversity Hub and Parks Australia (both NMSC members). Perhaps a logical place to start would be to get a report back from this workshop. Preliminary discussions were also held with Cass hunter, an Indigenous social-ecological researcher at CSIRO, who is interested in Indigenous Engagement with NMSC.

N.B. An emphasis on Northern Australian is not meant to be exclusive, but as noted in the Introduction, we need to “focus marine science effort at the front end of regional development cycles, like those we are about to see in northern Australia”.

Next Steps

It is recommended that NMSC discuss this paper, and that next steps be determined on the basis.

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