

SHORT SUMMARY

5.20.007 Mapping and Analysis of Blue Economy Policy and Legislative Arrangements

KEY POINTS

- △ We developed a searchable online database of international, federal, and state blue economy policy and legislative arrangements (available at <https://ausbluepolicy.net>).
- △ Based on arrangements included in the database, we developed network arrangement graphs to facilitate analysis and visualisation of relevant arrangements for aquaculture and renewable energy and their corresponding responsible authorities.
- △ Our semi-quantitative approach allowed the identification of potential gaps and overlaps that may hinder the deployment of integrated and renewable energy production systems.

THE CHALLENGE

Blue economy uses, activities and resources are traditionally managed on a sectoral basis involving independent entities pertaining to different jurisdictions. In this sense, current efforts towards seafood and renewable energy production systems and other integrated blue economy activities will need to contend with a complex and fragmented policy and legislative environment, which may not be entirely fit-for-purpose.

THE OPPORTUNITY

Policy research has predominantly used qualitative methods, which are generally time-consuming and conducted on a small-scale, ad-hoc basis; therefore, challenges may arise when large-scale and holistic evaluations of complex and dynamic policy and legislative systems are required. Quantitative and semiquantitative methods may complement such traditional approaches by offering a broad and integrated view of institutional landscapes, particularly at the initial stages of the policy and legislative analysis process.

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OUR RESEARCH

OBJECTIVES

The objectives of this project were to:

- i. map the existing policy and legislative environment (i.e., policies and legislation and responsible agencies) as they relate to blue economy uses, activities and resources across multiple sectors and jurisdictions;
- ii. undertake cross-sector analyses to identify gaps and overlaps that may hinder the development and operation of blue economy activities with a focus on those relating to integrated seafood and energy production systems; and
- iii. develop a searchable online database of the policy and regulatory environment mapped in objective (i).

MATERIALS & METHODS

The database develop consisted of arrangements pertaining to coastal and marine areas within the seaward boundaries of the continental shelf around Tasmania. We collected international treaties, federal and state acts, subordinate legislation, and policies from official government websites and legislation databases as they related to aquaculture and renewable energy. Data analysis was performed using the software MINOE v1.10 and NodeXL and involved text mining based on key terms defined for aquaculture and renewable energy, as well as the development and analysis of network graphs.

RESULTS

We identified 1,915 references to aquaculture in 137 arrangements as follows: (i) international level: 12 arrangements and 23 references; (ii) federal level: 73 arrangements and 1,006 references; (iii) state level: 52 arrangements and 886 references.

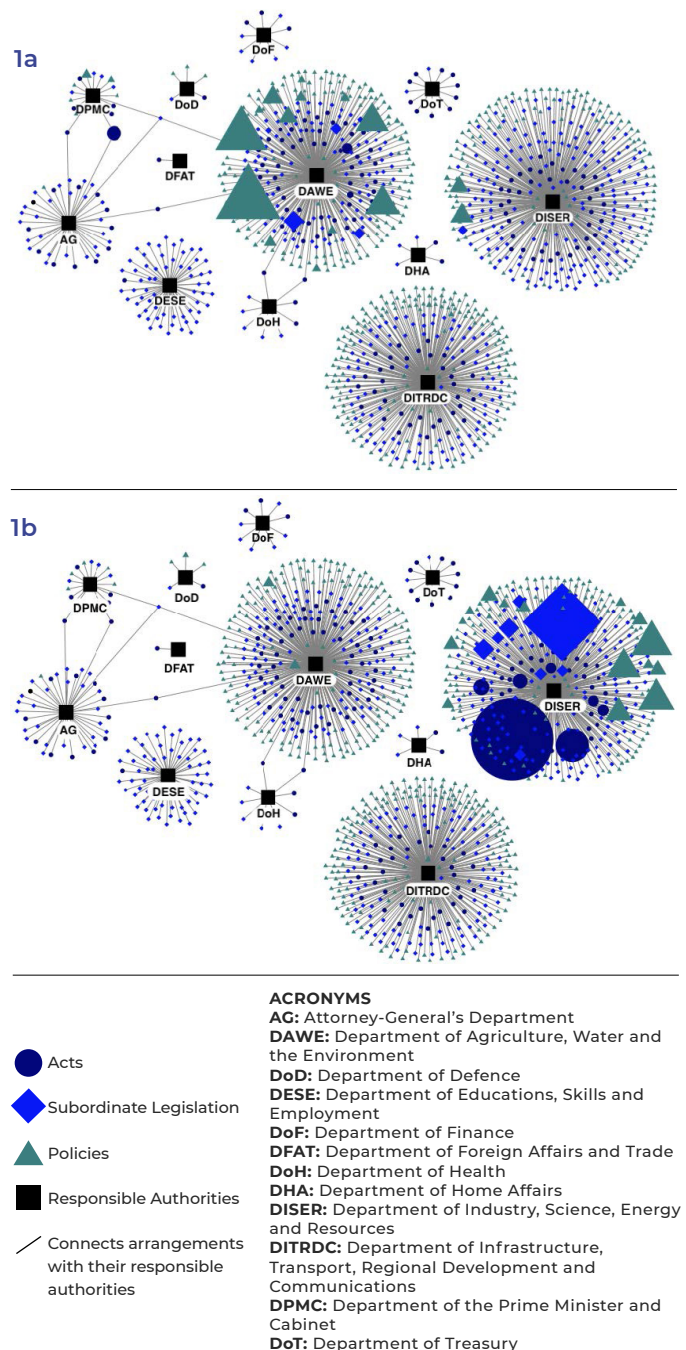
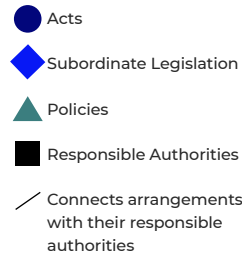


Figure 1. Network graph of federal arrangements for aquaculture (1a) and renewable energy (1b). Arrangement sizes vary according to the frequency of defined terms.

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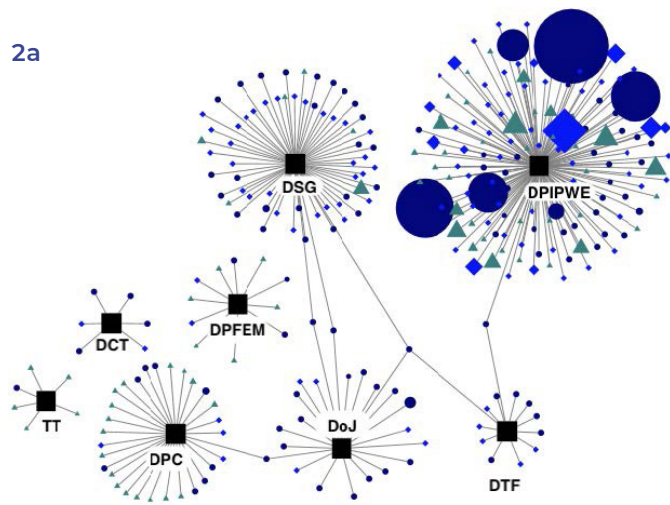
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Aquaculture arrangements were linked to 12 government departments. The Australian Department of Agriculture, Water and the Environment (DAWE) and the Tasmanian Department of Primary Industries, Parks, Water and Environment (DPIPWE) emerged as the potentially most relevant responsible authorities. Results showed that most federal arrangements relating to aquaculture were policies (approximately 75%). They also revealed that the regulatory framework in Tasmania has a higher number of aquaculture arrangements classified as acts when compared to the federal level (see Figures 1a and 2a).

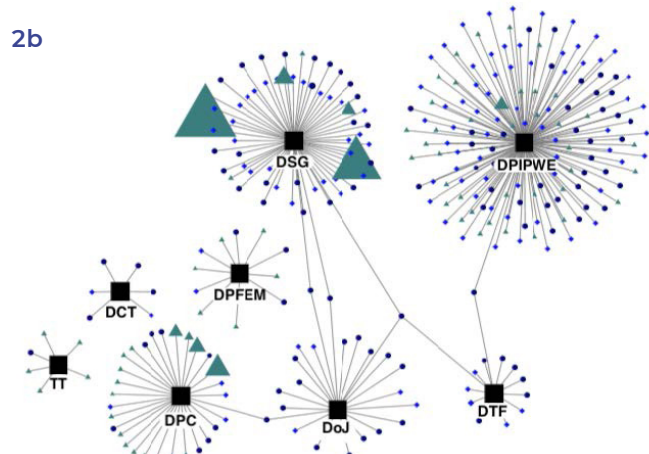


ACRONYMS
DCT: Department of Communities Tasmania
DoJ: Department of Justice
DPFEM: Department of Police, Fire and Emergency Management
DPC: Department of Premier and Cabinet
DPIPWE: Department of Primary Industries, Water and Environment
DSG: Department of State Growth
DTF: Department of Treasury and Finance
TT: Tourism Tasmania

Figure 2. Network graph of state arrangements for aquaculture (2a) and renewable energy (2b). Arrangement nodes sizes vary according to the frequency of defined terms.



In relation to renewable energy, we identified 2,163 references in 94 arrangements divided as follows: (i) international level: 6 arrangements and 29 references; (ii) federal level: 71 arrangements and 1,766 references; and (iii) state level: 17 arrangements and 368 references.



Renewable energy arrangements were linked to 11 government departments. The Australian Department of Industry, Science, Energy and Resources (DISER) and the Tasmanian Department of State Growth (DSG) emerged as the potentially most relevant responsible authorities (see Figures 1b and 2b). Ninety four percent of all references were made to the term “renewable energy”, while the terms “offshore energy” and “offshore renewable energy” accounted for only six references. We only identified 23 arrangements that made reference to both aquaculture and renewable energy topics (15 federal arrangements and eight state arrangements), of which 20 were policies.

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OUTCOMES

Our network arrangement graphs identify overlap of responsibilities between government departments. On the one hand, DAWE and DPIPWE emerged as the most relevant government departments for aquaculture activities. On the other hand, DISER and DSG were identified as the most important responsible authorities in the field of renewable energy. In addition, a gap exists in the blue economy regulatory framework of arrangements that cover aquaculture and renewable energy in an integrated manner. Findings indicate that the creation of the Blue Economy CRC has helped to inform policy in this area.

NEXT STEPS

The next steps of this research project include (i) the development of qualitative studies to further investigate policy and legislative gaps and overlaps hindering integrated seafood and renewable energy productions systems with the aim of streamlining regulatory processes and improving coordination among government departments and other blue economy stakeholders; (ii) the identification of new blue economy topics of interest that could be explored with our text mining and network mapping approaches; (iii) the identification of priorities relating to the expansion of our database; and (iv) the exploration of options to allow regular maintenance and update of the database, as well as strategies for its improvement.

PROJECT TEAM

- △ Pedro Fidelman (The University of Queensland)
- △ Miguel Frohlich (The University of Queensland)
- △ Brian W. Head (The University of Queensland)
- △ Marcus Haward (University of Tasmania)
- △ Joanna Vince (University of Tasmania)
- △ David Rissik (BMT Commercial Australia Pty Ltd)
- △ Ian Dutton (DPIPWE)
- △ Rachael Hazell (The University of Queensland) – Admin. Support

PROJECT REPORTS/PUBLICATIONS

Frohlich, M., Fidelman, P., Dutton, I., Haward, M., Head, B.W., Rissik, D. & Vince, J. (2021). Mapping and analysis of blue economy policy and legislative arrangements 5.20.007 – Final Project Report. Hobart: Blue Economy Cooperative Research Centre.