BLUE ECONOMY
COOPERATIVE RESEARCH CENTRE

Australian Government
Department of Industry, Science, Energy and Resources

AusIndustry
Cooperative Research Centres Program

SHORT SUMMARY

1.20.001 Aquaculture Vessel Requirement Scoping Study

INTRODUCTION

This project conducted a comprehensive review of the existing Australian and international maritime classification standards and Human Factors (HF) guidelines from the design, building, construction, and survey perspective of the offshore aquaculture platforms and vessels.

KEY POINTS

- There is a possibility of regulating offshore aquaculture vessels and platforms through current AMSA National Standard for Commercial Vessels (NSCV) rules and regulations.
- An opportunity exists for BE CRC to jointly develop a new set of regulations specific for offshore aquaculture platforms and vessels with AMSA.
- Human Factor (HF) principles are beneficial for the design of future offshore aquaculture vessels and platforms and they should be applied for the comfort and safety of workers in vessels and platforms.
- It is essential to develop green vessels and platforms to support the development and operation of the aquaculture industry and the offshore renewable energy industry.

THE CHALLENGE

Some of the international offshore aquaculture projects took many years to obtain regulatory approvals for their vessels. It is important for Australia also to have a clear regulatory system in hand before proceeding with offshore aquaculture vessel and platform designs, building and acquisition process. Thus, it is timely to explore the current Australian regulatory system with the view to formulate rules and regulations for offshore aquaculture platforms and vessels for design, construction, operation, monitoring and maintenance during their life cycles.

THE OPPORTUNITY

The scoping study project provided a platform to discuss with the major aquaculture companies, regulatory authorities, and research organisations involved in offshore aquaculture and identify the problems they would face while operating future offshore aquaculture vessels that are larger, armed with advanced equipment and powered by green energy. Also, it identified the possibility of utilising the existing regulatory framework and the opportunity to develop a code of conduct for future offshore aquaculture vessel operations.

The Blue Economy CRC is funded in part under the Australian Government's CRC program administered by the Department of Industry, Science, Energy and Resources.

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OUR RESEARCH

Core Of The Study

This project conducted a comprehensive review of the existing Australian and international maritime classification standards and Human Factors guidelines from design, building, and survey perspectives of the offshore aquaculture platforms and vessels. The study identified the gaps to be addressed within the existing regulations and infrastructure requirements for future offshore aquaculture platforms and vessels in Australian waters.

Categories Of Vessels In Operation

The scoping study analysed the regulations required for various types of offshore aquaculture vessels, as shown in Figure 1.

Major Areas Of Study

The following subjects were discussed: design and construction standards of offshore aquaculture vessels; human factor design guidelines; survey regimes of vessels; emerging trends in vessel designs; and the availability of infrastructure facilities to maintain the vessels. Online interviews were conducted with industry partners, research organisations, and regulatory authorities to identify problems at the ground level and to find avenues for solutions.

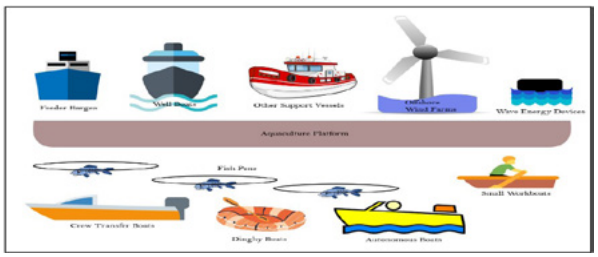

Figure 1. Vessels operating in offshore aquaculture sites.

OUTCOMES

The scoping study confirms that the existing NSCV rules and regulations of AMSA for fishing vessel and non-passenger vessel can be adopted for regulating offshore aquaculture vessels and platforms. In addition, guidance documents related to HF (beneficial for the design of future offshore aquaculture vessels and platforms) are presented.

The study also assessed the infrastructure facilities in Tasmania and Victoria for the refit and repair of large aquaculture vessels. It was concluded that it may be essential to develop infrastructure facilities commensurate with the development of offshore aquaculture industry. Further, a list of national and international organisations working in the research area of offshore aquaculture vessels and platforms are presented.

NEXT STEPS

- There is ambiguity in defining the word “offshore” as it identifies differently within the aquaculture community and the NSCV rules. Therefore, it is recommended that a common definition for the word “offshore” be used within the aquaculture industry.
- An opportunity exists for BE CRC to propose a new set of regulations specific for the offshore aquaculture platforms and vessels together with AMSA. Therefore, it is recommended to continue this initiative through future BE CRC general projects.
- The use of specially tailored vessels would be beneficial for offshore aquaculture. Therefore, vessel types suitable for specific operations such as harvesting, fish and crew transportation, and cargo movements should be further investigated.
- A general project can be initiated to investigate and report on the status of hydrogen for use as a fuel for vessel propulsion. It would then investigate the market needs for using hydrogen to power vessel fleets in Australia, in such industries as aquaculture, ferries, and passenger’s vessels. Also, the port infrastructure for fuelling hydrogen vessels would be investigated.

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PROJECT REPORTS/PUBLICATIONS

Amarawardhana, A., Shearer, C., Jayarathne, N., Jayasinghe, S., Abeysiriwardhane, A., Abdussamie, N., Chin, C., Bjelland, H., Abraham, J., Dove, T., Tomlinson, N., & Corden-McKinley, B. (2020). Aquaculture Vessel Requirement Scoping Study, P.1.20.001 – Final Project Report. Launceston, Australia: Blue Economy Cooperative Research Centre.

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