

RIGS-TO-REEFS: PROSPECTS FOR LARGE SCALE ARTIFICIAL REEFS IN TROPICAL SOUTHEAST ASIA

Outline of Discussion Points

Session 1: The Ecological Argument

- 1.1 The extent of reef habitat and biodiversity losses in Southeast Asia and the current status of wild catch fisheries.
- 1.2 Merits of the argument that rigs-to-reefs can enhance fisheries and biodiversity, including the aggregation vs. production debate. Are fish attracted by artificial structures or are new fish communities created thanks to this structure? To what extent are artificial reefs pathways for coral and fisheries export?
- 1.3 Explanations of what the 'sea growth' observed on jackets (legs of platforms) can be composed of at different depths and the varying rates of growth; in the SCS, sea growth includes reef making coral.
- 1.4 Presentation of the marine community living on and around specific platforms inspected by the speakers. Are steel jackets well suited for reuse as artificial reefs 'as is'? Rate of growth of hard coral.
- 1.5 A common criticism by NGOs is that offshore platforms do not reproduce the ecosystem functions of a natural reef. They do not offer a nursery ground. What is the response to this?
- 1.6 Review of differences between the comparative advantages presented by jackets located in deep and shallow waters. Presentation of the region's bathymetry and location of offshore installations.
- 1.7 Merits, from an ecological perspective, of leaving a jacket in place rather than removing and toppling it on site or after carrying it elsewhere. Is there an ecological reason for the placement of obsolete rigs in designated areas in the Gulf of Mexico?
- 1.8 Discussion of site selection parameters and proximity to natural reefs. Identification of a checklist of points to be documented prior to determining whether rigs-to-reef is a suitable option. Connection between the intended purpose and the rigs-to-reefs proposal.
- 1.9 Endangered species argument: What species are concerned? What percentage coverage of any sessile species should be significant enough to defend that it must be preserved? Other criteria? Where endangered nektons (including sea turtles) graze on organisms living on the platform, what criteria should be used and factors considered to determine how important a particular platform may be to the life cycle of that species?

1.10 On-going monitoring: Why is this important? Purpose?

1.11 Progress in and status of current use of large artificial reefs in Southeast Asia.

Session 2: Technical Feasibility and Practical Considerations of Reefing of Obsolete Offshore Structures

2.1 Overview of the decommissioning context in Southeast Asia: size and types of jackets. Is the steel grade used the same throughout Southeast Asia?

2.2 Different parts of the structure and resilience of these parts. Where are the weak parts where fatigue will be first felt?

2.3 How is the fatigue of a platform monitored? What is the aging time of a platform? What is the impact?

2.4 Decommissioning engineers say that decommissioning is not 'reverse engineering' but is a different type of engineering, especially when dismantling was not anticipated in the building plans. Is the expertise available in Singapore? Should different expertise be developed for the region?

2.5 What is the degree of oxidation in the region? How does oxidation vary with pressure, dissolved oxygen in the water, salinity, friction from water current or surrounding sediments?

2.6 How is the sea growth monitored? Could hard coral take over and prevent hazardous deterioration of the jacket?

2.7 What are the risks (including safety) attached to the dismantling of an old jacket? What are the factors and criteria to assess this risk.

2.8 Review of the difficulties inherent to any underwater dismantling at different depth.

2.9 How difficult is it to place a jacket in a given location? What is the impact of depth on this?

2.10 How were the Two Fathom Rock and Baram 8 rigs-to-reefs site chosen?

2.11 Underlying reasons to the decision to entirely remove disused jackets in Brunei and Malaysia.

2.12 Perspective of the classification societies, accountants, financiers and insurers on rigs-to-reefs as a solution to decommissioning?

Session 3: Institutional and Legal Challenges

3.1 The current paradigm is still based on the Brent Spar Incident in the North Sea and the perception that full removal is the only acceptable solution as all other solutions are disguised dumping at sea.

3.2 Applicable legal regime depending on the location of offshore installations: in the territorial sea, exclusive economic zone, continental shelf, archipelagic waters or internal waters.

3.3 Can the placement of an offshore platform as an artificial reef be considered as illegal dumping at sea? To what extent do the international rules of the London Convention against dumping at sea apply to non-signatory to the Convention.

3.4 International vs. regional rules on decommissioning.

3.5 When is an Environmental Impact Assessment required under international law? What is the scope?

3.6 Condition for rigs to reefs projects to be lawful under international law, i.e. not qualify as 'disguised' dumping.

3.7 Different purposes for artificial reefs and consequence on the legal regime.

3.8 Impact of the presence of endangered species living on or around the legs of platforms.

3.9 Identification of different government entities potentially concerned by rigs-to-reefs operations.

3.10 Institutional mechanism for transfer of governmental purview on disused platforms transformed in artificial reefs from the Ministry/Department/Authority of Energy to the Ministry in charge of fisheries/tourism/environment. Review of the example of the Gulf of Mexico.

3.11 What entity bears the residual liability in case of an accident caused by an artificial reef? How different is it from the liability for an incident caused by an abandoned well (due do capping failure for instance).

Session 4: Is it an Opportunity for the Offshore Industry?

4.1 Identification of stakeholders in decommissioning operations, including rig-to-reefs projects.

4.2 What is the reality of the potential benefits to the offshore industry? Can rigs-to-reefs induce savings to oil and gas operators? Compare costs exposed in different Rigs-to-Reefs scenarios (on-site/off-site, etc.)

4.3 What entity decides on the decommissioning option and whether to choose rigs-to-reefs?

4.4 What are the models available to analyze and weigh decommissioning options and various costs and benefits?

4.5 Assessing marine ecosystem services in Rigs-to-Reef project: tangible vs. intangible services

4.6 Potential value of rigs refitted in artificial reefs including as a means for risk and reputation management and for the ecosystem services provided.

4.7 How developed is the decommissioning industry in Singapore? What additional skills are needed if any?

4.8 What expertise is needed for rigs-to-reefs operation?

4.9 Potential uses by other stakeholders such as diving tour operators or other marine tourism operators.

Workshop Goals and Outputs

1. Developing a network of regional experts for knowledge sharing including pathways with research in fisheries, biodiversity, offshore engineering, environmental economics and law and policy;
2. Identifying the main issues raised by the placement of Rigs-to-Reefs in Southeast Asia
3. Publishing a workshop report summarizing the thrust of the main discussions and presenting recommendations highlighting:
 - What should be done at regional level (including research topic recommendations)?
 - Who can take the lead at domestic and regional level?
 - A checklist of issues to be considered in the context of a Rigs-to-Reefs project
4. Compiling papers on key issues for publication in a special edition of a journal on marine policy.