

Justification Report Template (Maximum 2 pages)

1. Combination: Aquaculture and Oil & Gas
2. Basin selected: Caribbean / Gulf of Mexico: Engaged-Married (At least in the past)
3. Description

This synergy needs to be carefully managed since there is continuous leakage of water and also some contaminants. In most EEZ's this is regulated in order to ensure that the leakage does not contain toxic materials, however with these regulations in place one needs to assess the impact that chemicals would leave on the aquaculture species.

Although it would be difficult to introduce aquaculture close to the oil and gas platforms due to contaminants entering the water, the pipelines that run from the platforms to the shore could be used for the farming of bottom dwelling species, such as lobsters. Further, the pipelines themselves could act as anchoring points for above water aquaculture structures. Alongside with this, the idea behind this combination is to eventually use retired oil and gas platforms is turned over into an aquaculture platform.

There have been several attempts to combine aquaculture with Oil & Gas platforms in the US part of the Gulf of Mexico. In the cases in which aquaculture has been combined with active Oil & Gas platforms, the combination has not been successful (prevailing interests of Oil and Gas companies; owners of platforms). It seems logical that although companies willing to open up to new options may exist, the interest in their main sources of income will prevail (i.e., the oil industry itself). On the other hand, GMIT project considers the use of abandoned platforms for the development of aquaculture. Given their previous experience in the combination with aquaculture and wide presence in the Gulf of Mexico Shell might be a good option. In addition the construction of the Eastern Caribbean Gas Pipeline connecting Trinidad and Tobago with the Eastern Caribbean islands may provide some useful opportunity

Project	Companies	Type of combination	Status
Texas Sea Grant Project (CRL2-3)	Texas Sea Grant + Occidental Petroleum	Base for operations	Ceased (Storm damaged cages, high cost of fishes)
Seafish Mariculture LLC. (CRL2-3)	Seafish Mariculture + Shell	Base for operations	Ceased (Cage losses, increased needs of Oil and Gas operator)
Grace Platform Project (CRL1)	Hubbs-Sea World Research Institute + Chevron	Base for operations	Abandoned (plans to develop LNG facilities)
GMIT project (CRL1)	GMIT + Biomarine Technologies+ Biomarine Fuel	Base for operations (Decommissioned platforms)	Financing (Not fishes in water yet)
OAC project (CRL1)	Ocean Spar Technologies + Chevron	Share of space	Abandoned (not worked as well as expected)

3.1 Technical

- Because of the leakage problems, aquaculture production in larger distance from the active platforms but still within a reach where the platform can provide

something for the farm can be one of the focus. To use the area of the platforms to produce fish for restocking also can be an option.

- Oil and gas platforms are durable and retired platforms can be even retrofitted to facilitate an aquaculture hub. The platform itself can also be used for recreational purposes and can be converted into fishing and diving hotel. The advantage of an oil and rig platform is that it can be easily accessed by a helicopter, this saves time and money on fuel of boats.

3.2 Socio-economic

- Skilled labour availability
- Creation of jobs
- Create new opportunities also for sports such as fishing and diving
- Estimated Gross value added
- Increased food production

3.3 Environmental

- Joint logistics reduce environmental footprint
- Floating structures have less impact on the sea floor
- Offshore aquaculture has less impact on the coast
- Offshore platforms support one of the most prolific ecosystems

3.4 Financial

- Joint logistics for erection, supply and maintenance save costs
- Introduction of new revenue
- Boost EU's aquaculture industry
- Oil and gas production declining, therefore using platforms for other initiatives will boost the investment coast in oil platforms
- Strong interest by stakeholders/businesses in the concept

4. Multi-use platform concept

A combination of aquaculture and oil and gas can be considered as multi-use of space even if they don't use exactly the same space in the same time. The scale of the concept should kick off with on a small scale project to test the impacts of both industries on each other

5. Key threats/challenges to be solved

- Lack of interest of oil and gas companies in an investment which would add risk to their operations without receiving benefits
- Risk of contamination of aquaculture products for human consumption
- Interaction between aquaculture and oil and gas platform not yet known
- Safety concerns of workers
- Operational problems caused by the combinations are not researched
- Impacts insurance opportunities
- Decline of Oil and Gas industry: net job creation vs. transference of workers between exploitation fields (creation vs. maintenance/lost)
- Retired platforms: Decommissioning regulation

- Spatial distribution of aquaculture driven by location of oil and gas platform:
Suitability of environmental conditions

- 6.** Customer/societal problem that can be solved by combining the sector
- Ease aquaculture pressure from the coastline
 - Better image for both industries