

Strategic plan report C8: the combination of aquaculture and tourism in the Mediterranean and Black Sea area

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1. Introduction

Aquaculture and tourism are in many cases well connected to each other. Fish markets, auctions, and fish processing plants in (Southern) Europe are generally frequently visited by tourists, often supported by local tourist offices. Likewise, guided tours along the coast, or on water are common practice and are frequently combined with seafood-related catering. Considering the FLAG projects subsidised by the European Commission¹, additional links between tourism and aquaculture appear, which include the development of local ports, restaurants, 'fish days' and farm visits.²

Aquaculture products are considered relevant to support the European seafood consumption. The EC has invested in the development of aquaculture products and production to promote awareness, increase consumer acceptance and grow demand of the products and the sector. This demonstrated that local and regional approaches resulted in the highest outreach.

These developments result in a suitable business case to combine aquaculture and tourism activities, which is not yet done on a full scale. Often aquaculture activities are mainly promoted in land-based programs, which do not fully integrate the experience of aquaculture. Therefore, a program is developed to offer accessibility to aquaculture sites, with inclusion of a dedicated experience program.

The combination resulting in an aquaculture experience entails:

- An offshore floating platform with boat mooring facilities supporting site activities nearby aquaculture sites, including options for live cooking, diving and education facilities. The boat and platform serves as basis for an aquaculture experience.
- Aquaculture site, with remote aquaculture experience site (demonstration site) to avoid contamination and reduce risks for the aquaculture site.

This Strategic Plan Report describes a plan for combining aquaculture and tourism in the Mediterranean and Black Sea region.

The region already has a full scale aquaculture sector, which is still developing. With increasing public awareness in food security and sustainability the industry is looking for ways to promote the least environmental impacting methods of aquaculture. The whole sector benefits by inviting and educating the public to see firsthand how aquaculture in the Mediterranean and Black Sea can produce good quality consumer products with minimal impact on the environment. Further, the sector profits from potentially improved ecosystem services through bio-remediation of other activities.

Focussing on the Mediterranean region, Figure 1 gives an overview of the aquaculture site in this area. Given the envisioned combination, a tourism/aquaculture combination requires the presence of offshore cages aggregates.

¹ <https://webgate.ec.europa.eu/fpfis/cms/farnet/fr/tourism-projects-flag-fair-sardinia>

² <http://www.nordnorge.com/other-scenic-routes/?News=391>

Figure 1 Aquaculture sites in the Mediterranean



Source: <http://www.fao.org/fishery/naso-maps/selected-aquaculture-sites/mediterranean-basin/en/> (accessed on January 13th 2016).

2. Market analysis

Sizing

It may be assumed that the general public would not travel to a country for aquaculture tourism alone. However, we do foresee a market segment for day tourism of locally interested people, and as a part of cultural or gastronomic holidays. Aquaculture experiences (land-based) in other countries result in visitor numbers ranging from several hundreds to tens of thousands (Galicia, Norway, France, Netherlands) ^{1, 2, 3, 4}. Specific, standalone aquaculture experiences may operate with 20-40 people on a daily basis at daily rates of typical experiences ranging from 30-150 euro for a tour, depending on the area, activity, scale and quality of the provided service. However, in certain areas the potential may be higher than others, depending on location specific issues such as competing activities, tourism characteristics (age groups, volumes), supporting activities (fisheries and aquaculture activities).

3. Products

The main product, which is applied in the business case are:

- An aquaculture experience to promote aquaculture, and aquaculture products and providing an attractive touristic activity. This is achieved by the development of an offshore floating platform with boat mooring facilities supporting site activities nearby aquaculture sites, including options for live cooking, diving and education facilities. The boat and platform serves as basis for an aquaculture experience.

Depending on the major tourist composition and thus consumer demand in the region the activities may be combined with diving, RIB (fast boat) activities, culinary experiences, relax vessels etc.

The development of the program is a standalone goal. The program targets a sales unit for attraction of costumers (either via tourist office or active from local facilitates), a boat including facilitates for cooking and leisure, an aquaculture site with adjacent demonstration site at which an offshore platform is realised. In principle it can be realised on a rapid basis depending on the time-line for licensing.

Value proposition: a profitable aquaculture experience that educates citizens about aquaculture

4. Customers

Key customers

The following three groups of key customers are identified:

1. Visitors to the aquaculture experience are;
 - tourists with specified groups such as;
 - local/regional residents
 - day tourism (differentiated groups)
 - scuba divers
 - schools, and company networks
2. Aquaculture professionals who can benefit by the improvement of their own and products image
3. (Local) government can benefit from knowledge dissemination/societal support for aquaculture

Actual activities

Many countries and regions use aquaculture practices for the development of touristic activities. Several European regions use onshore or near-shore aquaculture practices, mainly in combination with land-based activities, such as restaurants, visual hotspots and processing demonstrations. However, combinations which genuinely integrate (touchable) aquaculture and tourism to a high extent are scarce. Many touristic activities lead to a remote view of aquaculture, where a view from a distance is usually presented, or a boat tour (without real aquaculture experience) is presented. In many occasions gastronomic or seafood consumption is combined with tours.

Estimated outreach

The business case can only be made for one site at a time, although a network of sites can be developed in a region. The site can be operated for 2 months at high exposure (summer season), while the rest of the year is less active. On average an operation of 5 days per months is estimated to be realistic. This results in a total of 160 days of operation (table 1) On average 30 persons a day can be operated on in the summer season, and 20 during winter season. This totals 2.800 visitors a year on one site. Given the potential of several sites in the Mediterranean total numbers of 30-40 thousand of paying visitors a year can be achieved. Depending on the site the number may vary.

Location and basin specifics

The Mediterranean is the ultimate region to facilitate an all year offshore experience. Infrastructure for tourists is available, such as accommodation, touristic activities, tourist logistics and costumer attractions.

The key characteristics of the location are:

Aquaculture site accessible within approximately one hour of sailing from touristic areas (harbour).

Availability of aquaculture and fisheries culture in the region (for effective promotions, and increased outreach, and combination with other programs)

5. Competition

Competitors are mainly found in other touristic activities. In typical tourism areas the competition is higher than in others. Regions with a higher abundance of aquaculture activities and a less tourism benefit from the scarcity of competing activities. Intensive tourist regions have a high potential to attract people, however competition with a high offer of competing activities require adequate market strategies and networks to compete with the others.

The key differentiator for combining aquaculture and touristic activities is found in the combination of the aquaculture experience targeted to the client group. Specific diver oriented programs, youth targets, and local targets require specifications in offers.

6. Revenue

•Tariffs

Specific aquaculture experiences (standalone) may operate with 20-40 people on a daily basis at daily rates of typical experiences ranging from 20-150 euro for a tour, depending on the area, activity, scale and quality of the provided service. However, in certain areas the potential may be higher than in others, depending on location specific issues such as; competing activities, tourism characteristics (age groups, volumes), supporting activities (fisheries and aquaculture activities).

Table 1. Turnover characteristics of an aquaculture – tourist combination in one specific location.

Operating months	Activity days per month	Persons per day	Active days	Price potential per head per day	Total income (euro)	Total passengers
2	30	30	60	80	144.000	1.800
10	10	20	100	60	60.000	1.000

OECD (2014), OECD Competition Assessment Reviews: Greece, OECD Publishing.
<http://dx.doi.org/10.1787/9789264206090-en>

Besides the income of vessel operation, the spin-off in terms of seafood consumption should be taken into account, as well as the effects of increased seafood consumption generally by the promotion of the sector. Although this cannot be estimated in exact numbers the spin-off may

be significant. The improvement will be seen if a network of aquaculture experience will be developed.

Subsidy

Subsidies may be derived from European programs for the development and promotion of aquaculture activities, and for the development of interregional tourist activities. In this context the instruments FLAG, INTERREG, and EMFF may contribute in the development. The greatest impact would be achieved if a network of aquaculture experience sites was set up in combination with fisheries and aquaculture programs. This would enable better perspectives for viable business cases and therefore improve access to large scale programs.

Investor

The following investors are foreseen for the business cases;

- The aquaculture sector is likely to be investor for the promotion purposes
- Restaurant and hotel chains may facilitate the development of the activities to stimulate recreational offers, and seafood consumption
- Local and regional tourist offices may invest for regional developments
- Regional authorities can invest for promotion and tourist diversification activities. Improve Blue/Green tourism.
- Diving schools and diving organisations may invest for the development of new diving locations and improvement of the variation of offers.

7. Strategic Roadmap

The Strategic Roadmap plan is to demonstrate how the combination could progress through the Technology Readiness Levels (TRL) based on its current status. This is presented through Technology Readiness Levels (TRL) and the TRL level.

The activities are ready for business plan development and specification. The implementation time may be realistic in less than a year.

TRL	Required to move up	IRL	Required to move up
6	Local and regional business case development	5	Local and regional business case development

Aquaculture is already well established in the region and to make these types of facilities suitable for tourism activities would take some consideration in trying to promote a safe, positive and enriching visitor experience. Biosecurity would need to be incorporated into the design of the site to try and reduce the risk of external pathogens being brought onto the site.

To make the experience as attractive to tourists as possible would need to be given some careful planning and imaginative design. Though fish are often popular with the public, holding large numbers of a single or relatively few species may not be so appealing or even terribly easy to access. Ways of allowing visitors to see the various aspects of the site easily, even in poor weather, would need to be developed. . Other possibilities including visitor centre, pesca/angling –tourism, open-water swimming, sailing, scuba diving etc.

1. Suggested companies

Not identified. Dependent on specific regions.

References

1. http://www.turgalicia.es/arousa-turismo-marineiro?langId=en_US (Accessed January 19th 2016) <http://www.marstrand.nl/>
2. <http://www.kenniscentrumtoerisme.nl/en/publicaties-kckt>
3. <http://visitcoastalnorway.com/2014/06/18/visit-a-modern-aquaculture-farm-at-hitra/> (<http://www.visitnorway.nl/>)
- 4.