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Title:	Assessing aquaculture feasibility: technical, economic, and social factors
Author(s):	Julie-Anne Kerandel, Carolina Garcia-Imhof, and Jamie Whitford

Summary/short description/key points:

- A feasibility assessment is a multi-disciplinary approach to improve a project's technical viability and its economic and social sustainability.
- Various tools and consultative processes are available to assess economic and social factors in addition to technical analyses of aquaculture projects.
- This working paper presents three case studies that illustrate Pacific Island countries' and territories' (PICTs') experiences and learnings from aquaculture feasibility assessments, highlighting the benefit of feasibility assessments in the context of aquaculture development in the Pacific region.

Recommendations:

Members are invited to:

- a. Note the benefit of feasibility assessments in the context of aquaculture development in PICTs.
- b. Note the available tools for assessment of technical, economic, and social factors for success in aquaculture projects.
- c. Exchange experiences and considerations on how to improve capacity to assess the feasibility of aquaculture proposals.
- d. Identify priority areas and needs for further actions to increase capacity for aquaculture feasibility assessment among PICTs.

Assessing aquaculture feasibility: technical, economic, and social factors

How can feasibility studies improve development of aquaculture in PICTs?

1. The feasibility assessment in aquaculture assists in identifying and reducing risks that may impede the success of aquatic projects. This multi-disciplinary approach assesses the economic and social sustainability of projects in addition to its technical viability.
2. There is ongoing interest from PICT governments, administrations, private-sector and communities for improved capacity to assess the feasibility of aquaculture proposals, in order to increase their chances of success and ensure that investments are justified.
3. Technical, economic, and social factors are three pillars to be considered in a feasibility assessment to properly measure the viability and the sustainability of an aquaculture project:
 - a. The **technical factors** involve the evaluation of environmental conditions, water quality, infrastructure requirements, and species suitability necessary to choose the aquaculture system that aligns best with local conditions.
 - b. The **economic factors** include cost projections, revenue expectations, financial risks, and investment needs to provide a clear picture of the project profitability. They help in budgeting the investment, determining the right stakeholder to involve, implementing a pricing strategy and can influence the choice of the production plan (which technique and financing is most suited to ensure a positive return on investment).
 - c. The **social dimension** involves understanding the potential impact of the project on local communities (employment opportunities, social acceptance, cultural considerations, gender, and social inclusion opportunities). It can also support capacity-building prioritisation and is well suited to current stakeholder engagement methods. Appropriate engagement of key stakeholders, addressing potential issues and concerns, and ensuring that a project aligns with the interests and well-being of populations is essential for successful development of aquaculture.

Case studies to illustrate the benefit of using feasibility assessments including technical, economic, and social factors for aquaculture development.

4. Three case studies highlighting the benefit of using a wholistic approach for an aquaculture project feasibility assessment are detailed in Information paper 6. These examples provide insight on how economic and social information can complement technical considerations in assessing the feasibility of an aquaculture project.
5. The first case study concerns the use of economic modelling for the establishment of an oyster farm in New Caledonia. The profitability and return on investment of different facilities and production options were simulated to find the most viable farming and marketing conditions according to the context and constraints of the project, for example the location of the farm, technical feasibility, oyster market in the country.

6. The second case study presents work done to find the best conditions and species for finfish sea cage farming in Fiji. A technical and economic analysis allowed recommendation of suitable equipment for the production conditions of the site and to evaluate investment needs. Costs of production for each species were estimated according to their biological cycle and their feed requirement. This allowed us to compare the profitability of a sea cage farming activity for each species and identify the most appropriate species for the farming conditions.
7. The third case study is a socioeconomic assessment of oyster harvesting in the Rewa River delta area in Fiji, including gender aspects, which provided key information to the Ministry of Fisheries (MoF) to support the development of an oyster aquaculture programme¹. Social, economic and market aspects were explored to identify key optimisation pathways of the value chain².

How can the capacity of PICTs to assess the feasibility of aquaculture proposals be improved?

8. In addition to the technical expertise, various tools and consultative processes exist to include social and economic aspects in feasibility assessments of aquaculture proposals. The data needed for this type of analysis are mainly collected through interviews or discussions with key stakeholders (see Information paper 11).
9. Capacity of PICTs to assess feasibility of aquaculture proposals could be improved through the provision of documentation on how to conduct feasibility assessments, templates for socioeconomic surveys, sampling protocols, and the organisation of trainings. SPC can also support PICTs on the development of appropriate tools tailored to the need (e.g., economic modelling).
10. The [IKASAVEA application](#)³ provides an efficient way of collecting basic socioeconomic information. This module could be completed by an economic module, to allow data collection on a regular basis that can provide useful feedback for feasibility assessment of future projects.

Recommendations:

Members are invited to:

- a. Note the benefit of feasibility assessments in the context of aquaculture development in PICTs.
- b. Note the available tools for assessment of technical, economic, and social factors for success in aquaculture projects.
- c. Exchange experiences and considerations on how to improve capacity to assess the feasibility of aquaculture proposals.

¹ [SPC Fisheries Newsletter #159](#) (pages 12 and 45)

² [SPC Fisheries Newsletter #160](#) (page 48)

³ Magron F., Halford A., Shedrawi G., Vigga B.. 2022. Suite of tools for coastal fisheries and aquaculture: access, usage and support Working paper 5. Fifth Regional Technical Meeting on Coastal Fisheries and Aquaculture. Noumea, New Caledonia: Pacific Community. 8 p. <https://purl.org/spc/digilib/doc/vqtj6>

- d. Identify priority areas and needs for further actions to increase capacity for aquaculture feasibility assessment among PICTs.