



Aquaculture – getting started

Many people contact Aquaculture SA to gather information regarding the establishment of aquaculture ventures. Following are common factors which should be considered by all prospective aquaculturalists. Much of this information has been adapted from a booklet titled 'Commercial Production of Farm-Raised Catfish' produced by the Louisiana (USA) Cooperative Extension Service.

Before investing initial or additional money in fish farming, do your homework. What may be good for one person at one location may not necessarily be good for another. Use reliable, updated information when determining the feasibility of entering an aquaculture venture and when preparing a financial analysis of a plan. Read as widely as possible, visit commercial farms and learn about the industry from several perspectives and experiences. When preparing a financial analysis use values that are realistic for the past five years rather than the best figures which are more apt to change downward. Also remember that experience is an important factor in obtaining high production levels. These higher production levels should not be used for the economic analysis for the first ten years of operation because of the greater associated risks at this time.

Marketing is essential, and production capacity should be compatible with the marketing plan or strategy. Marketing alternatives and opportunities should be evaluated for your area. Know what is required for each component of a plan: management, labour, capital, supplies, financing, assistance, equipment, permits and licenses, land, water, power and markets.

As most forms of aquaculture are capital intensive, financing may need to be obtained by many prospective producers. Knowledge about the type of aquaculture to be undertaken, and the proper preparation of financial statements are important factors in obtaining a loan. Loan limits may also influence your plans. Don't necessarily rely on banks for loans. Investigate alternatives such as equity partnerships, which may lessen your risks and improve your profits.

The following checklist identifies factors that can determine your decision or improve your capability to undertake a commercial aquaculture venture. This information should be considered when evaluating a plan and preparing a feasibility analysis. Try and answer each of the following questions and do more homework if required.

Management Factors

- Are you aware that a permit / license is required to undertake aquaculture in South Australia? This can be obtained from Aquaculture SA.
- Are you aware of agencies that can provide educational and technical assistance?
- Do you have the approval of your local council to erect buildings if necessary, as well as a proposed change in land use?
- Do you need approval from SA Water, Department of Environment, Heritage and Aboriginal Affairs (DEHAA), and/or the Development Assessment Commission (DAC) for accessing or disposing of the water you propose to use?

- What equipment will you need to purchase?
- Do you have the necessary financial resources for facility construction and aquaculture crop production?
- Is the profit potential in the type of aquaculture to be undertaken higher than that for other alternative uses?
- Have you evaluated the investment and production costs to estimate the rate of return for you situation?
- Will current interest rates and interest costs on investment and operating capital permit a reasonable profit? How much will changes in interest rates affect profitability? Are they likely to change?
- Can sufficient capital be borrowed or obtained to complete your plan without being undercapitalised?
- Will the expected profit provide an adequate return for your labour, management and risk?
- Are you using industry sourced expected production and mortality values that are realistic for your own situation?
- Can your afford to delay income from the time the aquaculture facility is constructed until you sell your first crop of fish?
- Have your decided on a record keeping system for management and future borrowing purposes?
- Can you afford occasional losses because of higher than expected mortality of the aquaculture species, or if sale price declines?
- Are you willing to provide the time and effort required to grow an aquaculture crop?
- Do you think that you will like the work and skills needed to produce an aquaculture crop?
- Do you know how to keep fish alive, as well as healthy enough to grow quickly?

Physical Factors

- Does your aquaculture site permit safe travel to, from and around the area?
- Can vehicles (boats and car) access the site in varying weather conditions?
- Do you already own a site or do you have to apply or purchase a site suitable for the aquaculture venture?
- In the case of pond culture, will the subsoils on your land hold water economically?
- Is the topography of the land or marine site suitable for the construction of an aquaculture facility of the desired size?
- Do you have enough water and is it of suitable quality?
- Is the aquaculture area protected from damage from flooding (landbased sites), high tides (marine sites), and strong winds?
- In the case for landbased aquaculture, are there suitable drainage facilities and can water discharge be kept isolated from any adjacent water courses?

- Can you prevent wild predatory animals from entering the site, and the aquaculture stock from escaping the site?
- Are you in an area where fish, crustacean or mollusc eating birds congregate or visit in large numbers?
- Can you reach the aquaculture site regardless of weather for feeding, treating and harvesting?
- Is the site suitable for harvesting the aquaculture species without difficulty?
- Will someone live close to your aquaculture site to permit frequent observation and necessary management action?
- Is there enough area available to allow for expansion in the future if you desire?

Production Factors

- Are good quality feeds available either bagged or in bulk at competitive prices? Do you need to grow your own feeds?
- Do you have a local or nearby source for medicated feed and aquaculture chemical supplies? Are you aware of those approved for use with organisms being grown for food and the necessary delay in time between the chemicals application and the marketing of the product?
- Are quality breeding stock or juveniles available for stocking purposes at competitive prices?
- Can you make or purchase necessary aeration, harvesting, feeding, feed storage, culture and transporting equipment?
- Is skilled and reliable labour available when required?
- Are dependable disease diagnostic services available and are you aware of their contact number and address?
- What sizes and what quantities of aquaculture species do you desire to produce to maximise profitability?
- Will you produce or purchase seed stock? If purchasing, what sizes are most economical for your situation?
- What power sources are available for running culture equipment? What are the estimated installation and operating costs? Do you have a back-up power source?
- Will you have adequate aeration for your anticipated level of production?
- Is the aquaculture produce susceptible to contamination from aerial spraying of agricultural chemicals, pesticide residues in the soil or surface runoff from agricultural fields or feedlots (landbased)?
- Is your aquaculture site susceptible to toxic algal blooms (marine based)?
- How many favourable growing season days are there in a year, and what is the length of the expected production cycle?
- Will you produce single batches of the species being cultured or will you multiple harvest with continual replacement stocking?

- Is your production goal reasonable for your water supply, location, experience, expected feeding rates, and available aeration?
- Do you anticipate a positive cash flow with your production strategy? How long after starting will this be?
- Are you familiar with the production cycle of your chosen species and will you be able to replicate optimal conditions to maximise your production capacities?
- Do you want to farm fish for commercial purposes, or rather as a hobby?

Marketing Factors

- Do you know of any established markets for your aquaculture produce?
- Can you compete at the production and marketing levels with other aquaculturalists in South Australia, interstate and overseas? Are you competing with wild caught product?
- How far are suitable markets from you, and how long will it take to supply product to them? Do these markets want large or small quantities, and is it viable to sell small quantities?
- Is your prospective aquaculture produce buyer dependable for payment and are the terms of payment reasonable?
- Do you understand how off flavours can affect the market ability of your aquaculture produce?
- Do you have suitable purging facilities? Do you know how to purge fish?
- How profitable is it for you to produce the sizes of aquaculture product your market customer requires?
- Is there a market for your aquaculture product when you plan to sell it?
- Will you receive a suitable price for your product and what price fluctuations does your product experience throughout the season? Will this affect the profitability of your venture?
- What are the demands and relative price trends of your aquaculture product during the time you plan to sell them?
- Are you willing to guarantee that the needed sizes and total weight of the product exists in your culture facility for marketing purposes?
- How will you harvest the aquaculture product and transport it to your market location?
- Will you be able to harvest the aquaculture product all year round? If not, will this effect your markets?
- Do you have an alternative marketing strategy in case it is required?
- Will you wholesale the aquaculture product or retail it?
- How will the price of your aquaculture product be affected by wild caught product?
- If you retail your aquaculture product, how will you sell it (live, processed, pick up, delivery, pay later)?
- If you are planning to process your aquaculture product will your facility meet the sanitation requirements of the relevant government regulatory agency and pass a site inspection?

- Do you have the required permits for your marketing strategies?
- What forms of aquaculture produce will you market: for human consumption or for other people to stock – fingerlings, broodfish, eggs or fry?
- What is the marketing competition in your area, and how established and successful is it?
- Do you have a budget for advertising and an advertising strategy if required?
- Are there opportunities for value adding?
- Can you supply a good quality product consistently throughout the year?
- Will you focus on domestic or export markets?
- Do you have a recognised quality assurance program?

Risk Factors

- Are you prepared to handle the possible problems?
- Poor water quality?
- Fish disease and parasites?
- Pesticide and/or algal bloom contaminations?
- Off flavours in the product?
- Predation of your aquaculture stock by birds, water rats, and other animals?
- Undesirable wild fish or other aquatic predators?
- Aquatic weeds and algae?
- Poachers and vandals?
- Low aquaculture produce prices and high feed and production costs?
- Equipment failure or breakdown?
- Sometimes working long hours during both day and night?
- Personal stress resulting from risk management?

Summary

Aquaculture in South Australia, like the rest of the world is expanding rapidly. As wild fish stocks diminish, there will be greater demand for cultured product. The future for the aquaculture industry is therefore very bright, however, all participants in the industry should invest cautiously.

Aquaculture is not an easy industry to succeed in, but the rewards may be there for those who investigate investment options wisely.

Financial analysis models are now available to assist you with your business planning, and Aquaculture SA staff can help point you in the right direction.

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Last update: January, 2003

Agdex: 472/10

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