



## **Landbased aquaculture development guidelines**

Aquaculture SA of Primary Industries and Resources South Australia (PIRSA) receives numerous enquiries from people wishing to undertake aquaculture venture. This fact sheet covers the common factors, which should be considered by prospective aquaculturists utilising land-based systems.

Before investing initial or additional money in fish farming, do your research thoroughly. What may be good for one person or at a certain location may not necessarily be good for another. Use reliable, current information when determining the feasibility of entering an aquaculture venture and preparing a financial analysis of your plan. Read as widely as possible, visit commercial farms and study 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 likely to change downward. Remember that experience is an important factor in obtaining high production levels. These levels should not be used for economic analysis for the first ten years of your operation because of the greater associated risks during that period.

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

As most forms of aquaculture are capital intensive some financing may be necessary for many prospective producers. Knowledge of 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 you plans.

### **Regulations**

A number of government agencies have regulation, which relate directly to landbased aquaculture operations in South Australia.

### ***Primary Industries and Resources South Australia (PIRSA)***

Primary Industries and Resources South Australia has responsibility for all fish in waterways of the state. Regulations relate to preventing the escape of animals with the associated risk of introducing diseases into natural populations. The transfer of live animals from one waterway to another without permit is forbidden. Fish farms must ensure that animals cannot escape from their farm into natural waterways. Animals exotic to South Australia can only be farmed after receiving a permit from the Director of Fisheries. Live fish can only be brought into South Australia if they have been certified free of disease. It is illegal to sell fish in South Australia unless you are professional fisherman or a registered fish farmer. Registration forms are available from Primary Industries and Resources South Australia.

## ***Department of Environment and Natural Resources – Water Resources Board***

The Water Resources Board has responsibility for the quality of water in natural water bodies within the state. This department also controls access to and use of underground water. In many regions access to this resource is limited.

### ***Local Government***

Some local councils have placed limits on aquaculture developments within their district. This is certainly the situation in the Mt. Lofty Ranges council areas. Some councils may require development approval for construction of tanks, ponds or dams within their region.

Approval is required for construction of buildings, undertaking associated activities such as processing and for a change of land use.

### **Site selection**

The most critical factor to the success of an aquaculture operation is the selection of a suitable site and its relationship to water quantity and quality, topography, soil characteristics, geographic location and climate.

The majority of fish farmers in South Australia are operating on land they already own and utilise for some other farming activity. Purchasing land specifically for an aquaculture development has very different economic consequences.

The volume, quality and availability of water is the key to success in land based aquaculture. It is important that the water available meets the requirements of the selected species. In most regions of South Australia the annual evaporation rate is in excess of a metre. This must be taken into account when estimating the total volume of water required for your operation. It is important that the soil type on the selected site holds water and is suitable for the type of production system to be constructed.

Competent development planning will make optimum use of the site and avoid the incorporation of bad design features which may affect the economy and viability of the venture permanently. Don't hesitate to change your plans if your investigations suggest different more viable alternatives for the use of your land.

### **Production**

It is critical that you determine the current accepted production level for the industry you intend to enter. Do not use the highest rate but work on a conservative figure remembering that it may take some time to reach full production and that large fluctuations in this rate may occur. As with any primary industry, prospective aquaculturists should budget for an initial period of low or no cash return.

### ***Pond construction***

Ensure that ponds are constructed in line with current industry recommendations and in such a way as to avoid catchment water running into them, which may result in flooding. The size and shape of ponds will be determined by the topography of the site and the proposed method of management. Ponds should be designed to be both filled and drained quickly and easily. It is important to have access around ponds and along levee banks in all weather conditions.

### ***Predation***

Most aquaculture species have a range of natural predators. These must be excluded cheaply, effectively and legally. Security may also be a problem in some areas.

## **Keeping records**

Good management includes keeping accurate records of stock growth, mortality, feeding rates and production levels. Aquaculturists are required by law to submit returns twice each year, detailing production, sales and other farm activities. Accurate records will assist in completion of these returns and enable future predictions to be made, if you need to access finance from lending institutions. This information is also used to compile accurate data regarding the growth of aquaculture in the state and assist in making management decisions regarding the industry.

## **Marketing**

Selling your product will be a prime concern. Make sure you have researched the markets thoroughly prior to initiating any aquaculture operation. Pay careful attention to the size and quality of product required by the market. Determine the market price for your product but remember that this may be different to the farm gate price that you will receive. Having identified a price, determine whether you will be able to produce your product viably.

## **Distribution**

The distribution of your product to market may be a costly exercise. Find out who else operates in your region and what are the established methods of distribution. An industry based marketing company exists in South Australia for yabbie farmer, enabling even small-scale growers to sell their produce. As markets require consistent, regular supply of quality product, many farmers prefer to distribute through a central coordinator rather than do their own marketing.

## **Information resources**

Information relating to aquaculture is available via a number of sources. Aquaculture SA of Primary Industries South Australia can provide advice based on research and international experience. Regional Development Boards can provide business advice.

The South Australian Aquatic Science Centre's library is situated at Hamra Avenue, West Beach. The library has an extensive collection of books and journals covering all aspects of aquaculture. The public can access this information by telephoning the librarian on 8200 2423 for an appointment.

There are a number of industry associations in South Australia. These include:

The Australian Freshwater  
Crayfish Growers Association  
of SA  
John Luckens (Secretary)  
PO Box 89  
KANGARILLA SA 5157

The Inland Aquaculture  
Association of South Australia  
Ph: 8362 8042

The Farmed Yabby Company  
PO Box 61  
INMAN VALLEY SA 5211

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