

FACTORS AFFECTING SITE SELECTION AND CULTURE MANAGEMENT IN AQUACULTURE

Site selection is the first and generally most critical step in establishing a sustainable aquaculture facility. In selecting a site for a specific system of culture both technical and non-technical aspects need prime consideration.

The most critical step:

For the long-term sustainability of an aquaculture enterprise, it is good investment sense to select an environmentally sound, low risk site at the outset. Poor site selection can lead to failure. With pond culture, factors such as water supply quality and reliability, soil characteristics and topography can influence all further construction and operational decisions. It must be emphasised that a site that has access to an abundant supply of good quality water is key to a successful aquaculture enterprise.

Water issue:

An abundant supply of good quality water available on a permanent basis is essential for land based aquaculture. In evaluating a potential water supply, seasonal changes in quantity and quality must be considered. The cost of purchasing water as well as supplying it to the site may be a major limiting factor to the economic feasibility of a particular site. Pumping costs can be high and should be minimised. Options for gravity flow on a site should be maximised, as it is efficient and cheap. This should be kept in mind when evaluating a site and layout options.

Geographic location:

Proximity to markets, transport routes and a developed population centre are all important factors to consider, as is the availability of electricity.

Production Calculations:

Production calculations based on the production plan are the core of the planning process. The calculations to prepare for a planned fish farm usually contain the information presented below.

1. Production facility
 - a. Production target.
 - b. Culture method.
 - c. Species cultured.
 - Stocking rate.
 - Initial weight.
 - Harvest weight.
 - Survival rate.
 - d. Requirements for broodstock, fry, fingerlings .
 - e. Seed stock sources.
 - Reliability.
 - Quantity.
 - Quality.

- f. Feed requirements.
 - Types.
 - Storage and delivery.
 - Feed conversion.
 - g. Fertilizer.
 - h. Pond management.
 - Water quality standards.
 - Retreatment needs.
 - Aeration.
 - Treatment of effluent.
 - i. Pond specifications.
 - Types of ponds.
 - Size and number of ponds.
 - Water depths.
 - j. Harvesting specifications.
 - Methods.
 - Schedule.
 - Facilities.
 - k. Operations plan.
 - l. Marketing plan.
2. Hatchery
- a. Production goals.
 - b. Proposed technology.
 - c. Operations plan.
 - d. Facility specifications.
 - e. Management requirements.

Other consideration:

After major factors are consideration, there are still a number of other questions that need to be asked. These questions will determine the type and size of your operation.

- Is predation and theft a problem and can you economically secure your farm?
- Will state, local land and water management agencies provide you with permits to carry out aquaculture in your chosen area?
- Will you need any specialised equipment because of some problem unique to your site?
- What was your farm site used for before and could the soil be contaminated by agricultural chemical residues from previous years?
- Is there a demand for your product, what size, what competition are you up against and is there room for market expansion?