



How to construct and maintain ponds for fish farming



RESEARCH PROGRAM ON Aquatic Agricultural Systems

This sheet provides basic information on how to construct and maintain ponds for fish farming in Solomon Islands. Fish that can be farmed in these ponds are tilapia and milkfish. Other information sheets provide details on milkfish farming, feeding and harvesting.

1. Where to locate your pond

The first thing to think about before digging your pond is the best place to locate your pond. It is worth taking some time to think about this before you begin. It is important to dig your pond close to where you live for security reasons. The site you choose should have the following:

- Easy access to a lot of clean water that flows all year round.
- Clay soil that can hold water.
- Enough space for the pond.
- An area that has no risk of flooding.
- An open, sunlit area.

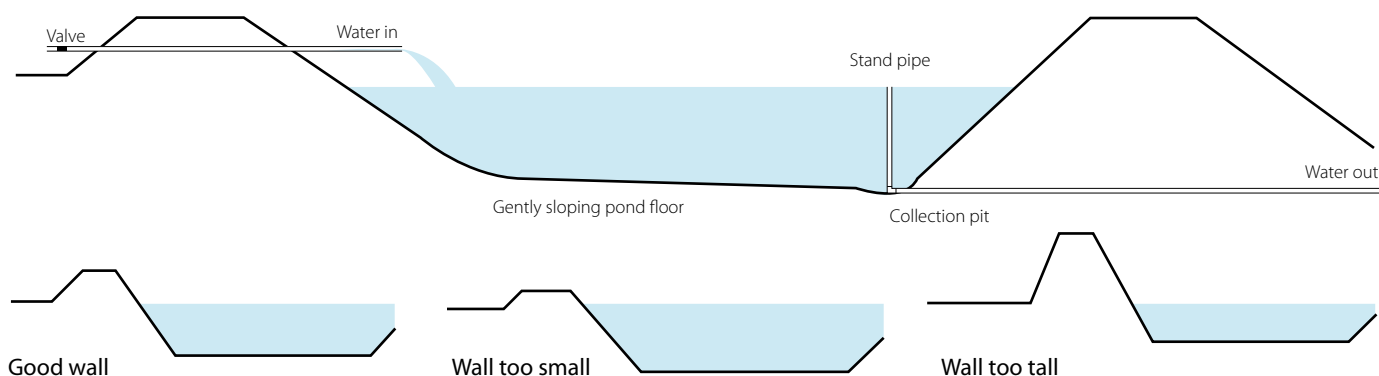
2. Pond Design

Ponds should be built as large as the space allows but should be a manageable size. A good size pond to start with is 6 m by 4 m. You can build a bigger pond later once you have had good experience with a smaller one. When building your pond, be sure you do the following:

- The pond walls are sloped and the bottom has one deep end for draining.
- Slopes and the bottom of the pond should be well packed by beating down the soil with timber during construction. This is to avoid erosion and seepage.
- Pond depth should be 0.5-1.0 m at shallow end, sloping to 1.5-2.0 m at the drainage end.
- At the deeper drainage end, you can construct a collection pit where water collects before flowing out. A collection pit is also useful when you drain the pond to harvest the fish.

You should also think about how high to build the walls of the pond. The walls of your pond should be high enough to stop water from overflowing over the edges. If the pond overflows, fish can escape. So the walls should be high enough to stop fish from escaping. However, the walls should not be too high. If they are too high they will slowly get eroded (washed away) and will fall into the pond.

This diagram shows an ideal pond design.



3. Water Flow

You need to be able to control the flow of water in and out of your pond and the level in the pond.

To control water coming in, you can use a water inlet valve, or have a pipe or hose that you can move in and out of the pond.

To control the water level and the flow of water in and out of the pond, it is recommended that you use a stand pipe system as shown in the first diagram.

When you design the stand pipe, make it so that it can be pulled out when you want to drain the pond.

You might also have some good ideas on how to control the flow of water coming in and out of your pond.



Not Green Enough



Good Green



Too Green

- If the water is too green, remove the manure bag and add new water.
- If the water is not green enough put fresh manure into the bag and put the bag back into the pond.

4. Greening your pond

Fish that are farmed in ponds normally eat green algae (lumlum) which grows in the water. Before you put fish in the pond you must make sure your pond is green in color. You can do this by fertilizing it using dry animal manure (e.g. chicken, pig or cow manure).

To fertilize your pond, you should start by measuring how much manure is needed. To do this:

- Begin by measuring the length and width of your pond with large steps.
- Add one handful of manure into a bag for every large step (1 m) of the pond's length and one handful per step for the pond's width. For example, if the length of your pond is 6 large steps and the width of your pond is 4 large steps (6+4=10), add 10 handfuls of manure to the bag and tie it closed.
- Put the bag of manure into your pond just below the surface of the water. It is best to place the bag of manure where the water comes into your pond so that the fertilizer from the bag is spread evenly around the pond by the water flow.
- You can then control how green you want your pond to be by adding and removing the bag of manure. You will need to replace the manure in the bag every month.



How will you know when your pond is green enough?

One way to test if your pond is green enough is to put your hand into the water elbow deep. If you can just see the palm of your hand then the pond is just the right green color. If you cannot see the palm of your hand then the pond is too green.



For further information, please contact:

If after reading the information sheets in this series and you want further information please contact WorldFish office in Honiara (phone 25080), Auki (phone 40633), Gizo (phone 60022) or the aquaculture section of the Ministry of Fisheries and Marine Resources (phone 39143).