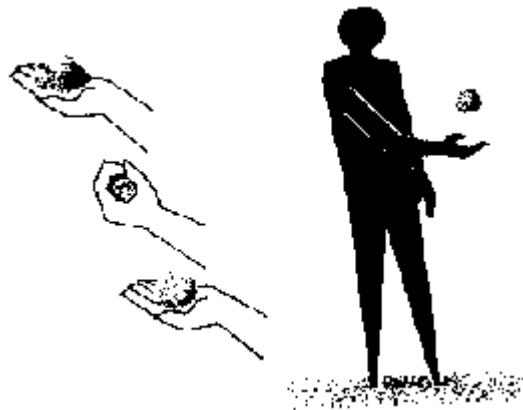


Fish Farming

Adapted from
“Better Farming Series 27 - FreshWater Fish Farming: How to Begin” (FAO,
1979, 43 p.)

Where to put your fish pond

1. You must choose a good place to put your pond.
2. Remember that a pond for fish is only one use for your land. Be careful not to build a pond on land that could be better used for something else.
3. It is best to choose a piece of land that has a gentle slope.
4. Do not build your pond on a steep hill or where it can be flooded in the rainy season.
5. Choose a sunny place for your pond, close to your home so people will not come and take your fish away.
6. The pond should be near water such as a stream or a spring, or in marshy ground where the water in the soil will fill up your pond.
7. The soil in the place you choose must be good for a fish pond.
8. To test if you have good soil, take a handful of soil from the surface and squeeze it into a ball.
9. Throw the ball of soil into the air and catch it.

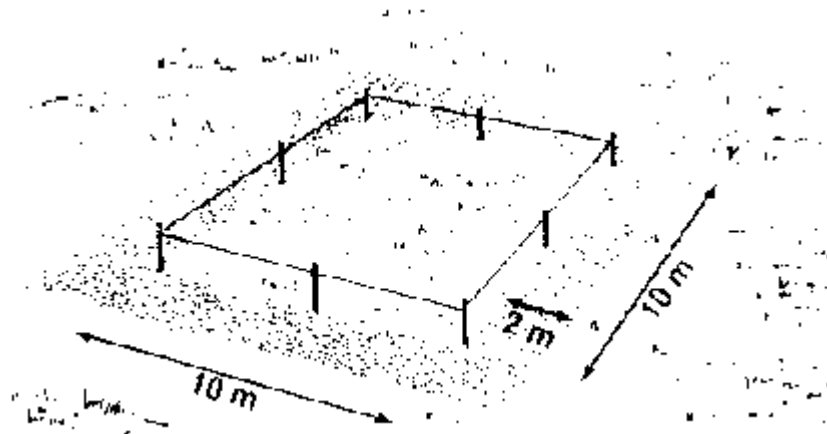


Testing the soil

10. If it sticks together it is good soil and will held water well.
11. Bad soil with sand or gravel in it will not stick together and will not held water.
12. Now dig a hole as deep as your waist and test the soil from the bottom of the hole in the same way as before.
13. If the soil from the surface is good, and the soil from the bottom is good, this is a good place to dig your pond.

How to dig your pond

14. Mark out the size of the pond on the ground you have chosen. Each side should be about 14 metres long, 10 metres for the pond and 2 metres for each bank of the pond.
15. Clear this area of all trees, bushes and grass and take away all the roots.



Pond's dimensions

16. Take away 20 centimetres of topsoil from all the cleared area and put it aside.
17. Now you can dig your pond.
18. The bottom of the pond should be even and sloped toward the deep end.
19. In the shallow end, the water in the pond will have to be about knee- deep.
20. In the deep end, it will have to be waist- deep.



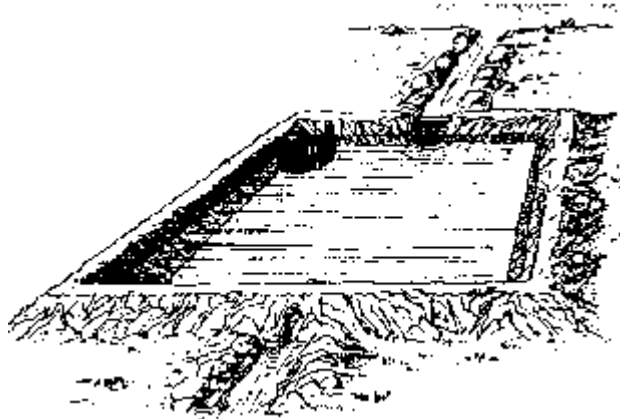
The deep end

21. As you dig the soil out, put it on the 2- metre strips to be the banks of the pond.
22. Do not make the sides too steep, but slope them to make them stronger.



Make the pond's sides stronger

23. Compact the soil as you take it out, to make banks strong enough to stop the water from pushing them out. The banks must be watertight.
24. You will need to make an inlet at the shallow end above the water level to fill your pond.



Fill the pond

25. At the deep end you will need to make an outlet to keep the banks from overflowing if there is too much water in the pond.
26. The inlet and outlet for your pond can be very simple. Large bamboo pipes will work very well.



Bamboo pipe

27. You can grow food crops such as rice, sweet potatoes, taro or groundnuts on the banks. Or you can plant grass.



Growing food crops

The water

Filling your pond

28. Using a small ditch is the easiest way to get water to the inlet and into the pond.
29. If the water comes from a stream, be careful to keep out bad fish. You can do this by using a screen on the inlet.
30. To stop fish from getting out of the pond, put another screen on the outlet.
31. As a screen you can use:

- a fish trap
- split and woven bamboo

- a clay pot with holes in the bottom
- a piece of metal roofing with holes
- a tin can with holes in the end.

32. To stop other people from taking fish from your pond, you can put some bamboo branches on the pond bottom. This will stop them from fishing or taking fish with a net.



Put bamboo branches on the pond bottom

33. Now you are ready to fill your pond with water.

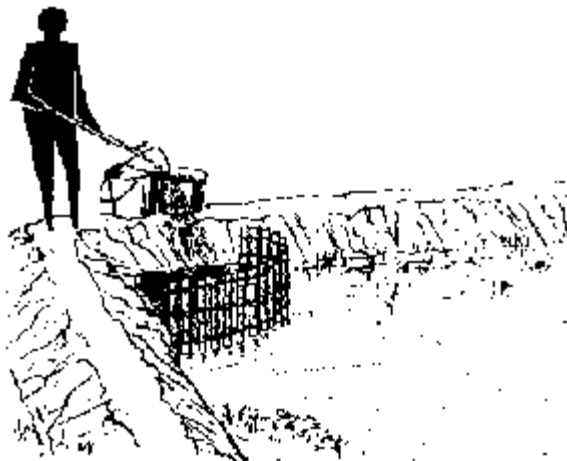
Fertilizing the water in the pond

34. To make more food in the water for the fish you will need to fertilize the pond. You can do this by adding compost or manure.

Fertilizing the water with compost

35. If you are going to fertilize your pond with compost, you will need to put in 10 kilograms of compost for each 100 square metres of pond each week

36. Build a crib with bamboo or other wooden poles, in the shallow part of the pond, and fill it with compost.



fill the crib with compost

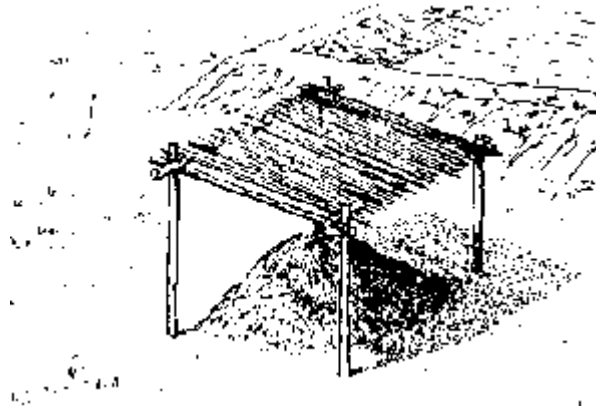
37. About a week later the water will become green. When the water is green, there is more natural food in the pond and the fish will grow faster.

38. To keep the water green, put a bucket of compost in the crib every week.

39. To make sure that the water in your pond is green enough, you should test it each week. To do this, put your arm in the water up to the elbow.
40. If you are just able to see the ends of your fingers, the water is green enough. If you are able to see the ends of your fingers well, you will know that the water is not green enough.
41. If the water is not green enough, add more fertilizer each week and test the water from time to time until you see that it is green enough.

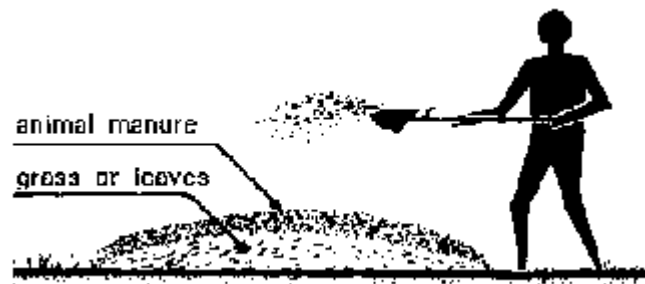
How to make compost

42. Make a compost pile near the pond. Put it in a shady place protected from rain.



Protect the compost

43. Make your pile in layers. Make the first layer of grass or leaves mixed with a spadeful of topsoil, and damp it with water to make it rot faster.
44. Then make a second layer of animal manure mixed with a spadeful of topsoil and some water.



Make the pile

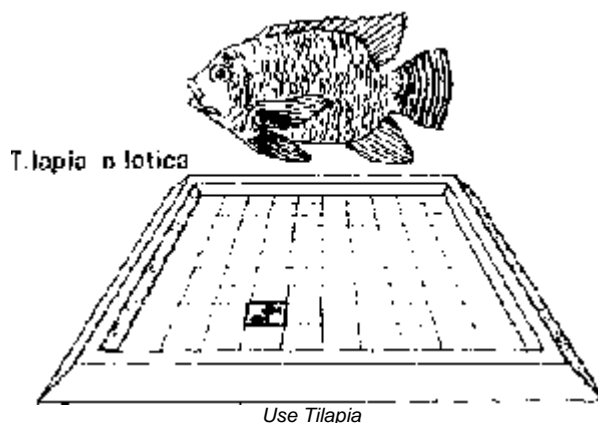
45. Use animal manure from sheep, goats, cattle, pigs, chickens or ducks.
46. In place of animal manure you can also use cotton seed, spoiled fruit, household garbage, ashes from the fireplace or night soil.
47. Then make another layer of grass or leaves, and another of manure, until you have a large pile.
48. Keep your compost pile damp by watering it every few days.
49. Let the compost pile rot for about a month.
50. Take compost from the bottom of the pile, or the old part of the pile, where it is most rotten, to put in your pond.
51. Add new layers to your pile every week so that you will always have compost.
52. If you have too much compost you can use some to fertilize your land.

Fertilizing the water with manure

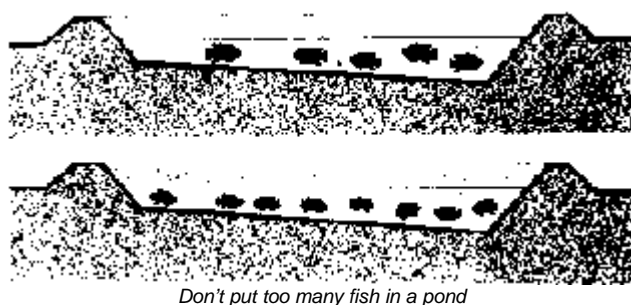
53. If you are going to fertilize your fish pond with animal manure, you will need to put in
- 2 to 3 kilograms of poultry droppings for each 100 square metres of pond each week
 - 8 to 10 kilograms of pig dung for each 100 square metres of pond each week
 - 10 to 15 kilograms of cow dung for each 100 square metres of pond each week.
54. If you do not have enough of any one kind of animal manure, you can make a mixture of several kinds.
55. Remember, you must still feed your fish the other kinds of food that they need to grow strong and healthy.

Putting the fish into your pond

56. The first time you stock your pond you will need to find some baby fish.
57. You can get them from another fish farmer or find them in the wild.
58. If you use Tilapia you will need two baby fish for each square metre. If each side of the pond is 10 metres long (100 square metres) you will need 200 fish (about 2 kilograms or 5 pounds).

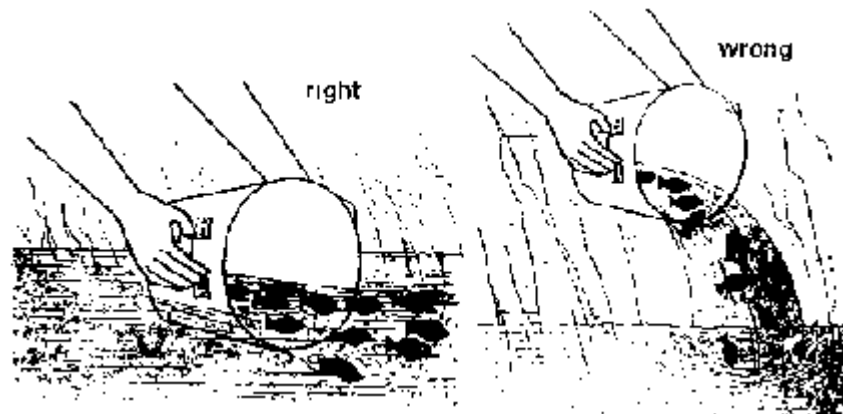


59. Be careful not to put too many fish in your pond. Stocking a fish pond is like planting a field. If plants are too close together they grow badly. If there are too many fish in your pond they will grow badly, too, and they will stay small.



60. Before you put the baby fish in the pond, be sure that the water where they are is not hotter or colder than the water in the pond.

61. You can find this out by putting one of your hands in the water with the fish and the other in the pond.
62. If one is hotter or colder slowly put water from the pond in the water with the fish until they are both the same.
63. If you do not do this the fish may die when you put them in the pond.
64. Do not pour the fish into the pond. Gently put the container into the water, tip it a little, and let the fish swim out by themselves.



Put the baby fish in the pond

Feeding your fish

65. Feed your fish every day.
66. You can give them many things to eat. You can give them

- termites
- cassava leaves and cassava wastes
- grain mill sweepings
- rice bran
- beer wastes
- cotton seed pounded in a mortar
- slaughterhouse wastes
- spoiled fruit
- kitchen waste

67. Feed your fish in the shallow part of the pond so that you can see them eat.
68. Feed your fish only what they will eat each day. Do not give them more than they can eat.
69. If your fish are healthy they will eat quickly.
70. If they do not eat all their food give them a little less the next day. If they eat everything quickly give them a little more the next day.
71. Do not forget to add a bucket of compost every week to the compost crib in the pond. Or add manure directly to the pond.

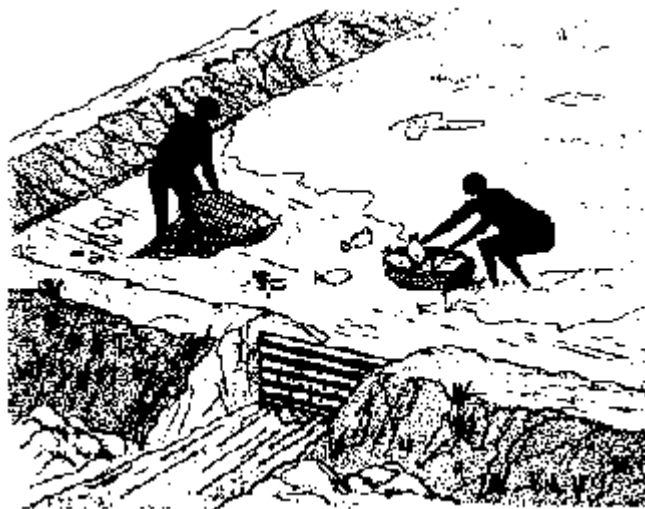
Taking care of your pond

72. You must take care of your pond every day when you take food to your fish.
73. Be sure the pond is full of water.
74. Be sure the screens are in place so that your fish cannot get away.
75. Do not let weeds cover more than one quarter of the surface. If there are too many pull them up.
76. Cut the weeds and grass on the banks of the pond.

77. Be sure the water is not leaking through the banks. If you find leaks stop them up right away with good soil.
78. Get rid of birds, frogs, turtles, rats and snakes. They can hurt your fish.

Harvesting your fish

79. Do not take any fish out of your pond during the first five months. After five months you may catch four or five big fish each week to eat with your family.
80. When the fish are big enough, it is time to harvest all of them. Usually, they will be big enough to harvest in about six months.
81. Harvest the fish early in the morning when it is cool.
82. Have some watertight containers ready to store live fish.
83. The easiest way to harvest is by draining the water out of the pond.

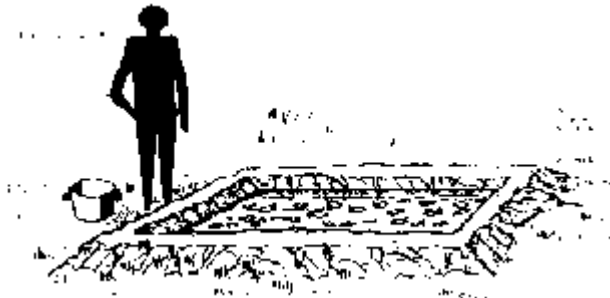


Draining the water out

84. Drain the pond by opening the bank at the deep end.
85. Use a screen at the outlet while you are draining so that you will not lose any fish.
86. Use baskets or nets to take the fish out of the water while the pond is being drained.

What to do with your baby fish

87. As soon as you find baby fish, put them gently into containers with clean water.
88. You will need these baby fish to put back into your pond to begin again. Baby fish are the fish farmer's seed.
89. Keep them in clean water, out of the sun, and move the water around gently with your hand from time to time.
90. If it takes more than half a day to make your pond ready to put back the baby fish, you should keep them alive in a special small pond nearby.
91. The small pond can be a simple hole in the ground about two metres square. You should have it ready before you begin to harvest.



Use a little pond for the baby fish

92. When moving your baby fish from one pond to the other, be very careful not to hurt them.

What to do with your big fish

93. You will harvest from your pond many big fish.



Harvest big fish

94. Fish spoil quickly after they die. Be ready to use them fresh the same day or to dry them for later use.