

SPC Library

09075
Bibliothèque CPS

HOW TO LOOK AFTER A FISHPOND

by

Louis Devambe
Assistant Fisheries Officer
South Pacific Commission

Illustrated by
Nina Murphy

South Pacific Commission
Literature Bureau

Contents

What kind of Fish	6
Building the Pond	7
Stocking the Pond	14
Feeding the Fish	18
Cropping the Pond	22
Care of the Pond	25
Summary	29

Introduction

Perhaps you have made a fish pond.

THIS LITTLE BOOK TELLS YOU HOW TO
LOOK AFTER YOUR FISH POND.

If you do not look after your fish pond it will be spoiled and the fish may die; then your work will be wasted.

A fish pond is like a garden; after you have made a garden you know you must work at it if you want to get good crops.

You must work at your fish pond if you want to get good fish.

If you find problems you cannot solve, the Fisheries Service in your territory can help you.

If you do not have a Fisheries Service in your territory, you can write to the Fisheries Officer, South Pacific Commission, Noumea, New Caledonia, and he may be able to help you.

I wish you good luck with your first try at Fish Farming.

What kind of Fish?

This book tells you how to look after a fish pond in which you are keeping a fish called TILAPIA MOSSAMBICA.

Tilapia mossambica can live in fresh water, or brackish water or salt water. These fish can stand a wide range of temperatures. In a good fish pond they will grow to a length of 8 inches and reach a weight of $3\frac{1}{2}$ to 4 oz. in one year.

So Tilapia mossambica are good fish to keep in fish ponds. They are easy to raise.

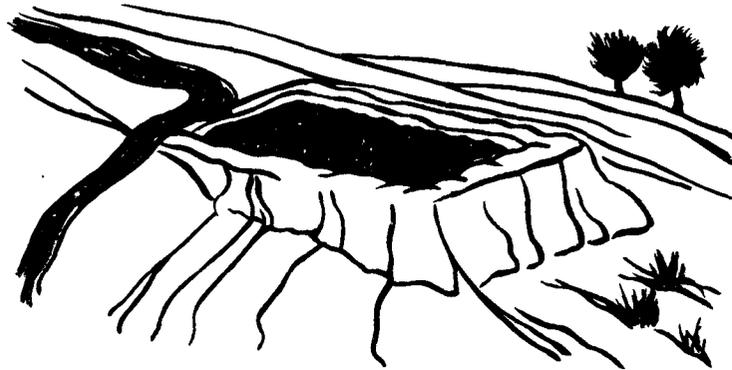
Tilapia mossambica breeds very early, at the age of 4 months; it has quite a lot of young at each spawning. So you must take some fish out of the pond at regular intervals, or you will soon have too many fish in too little water. Then they will not grow big but they will go on increasing in number. After a time they will be too small to eat.

Building the Pond

A fish pond must be built on watertight soil so that it will not leak.

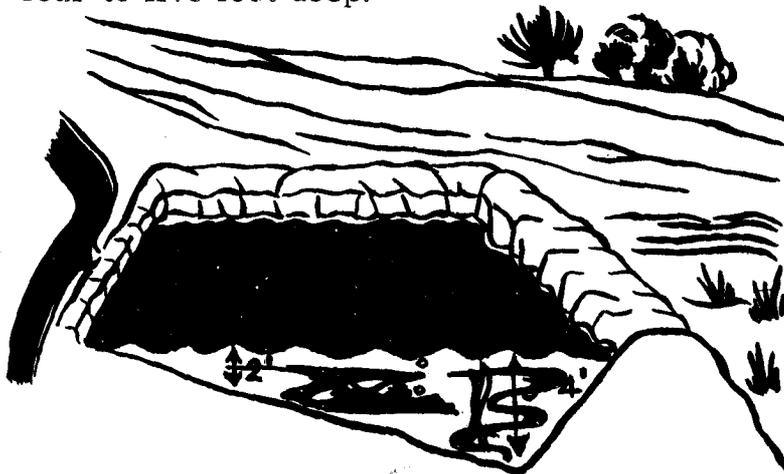
It is best to build your pond on a slight slope; this will make it easier to empty the pond when you want to clean it.

The bottom of your pond should slope so that the water in the shallow side is about two



Build your pond on a slight slope

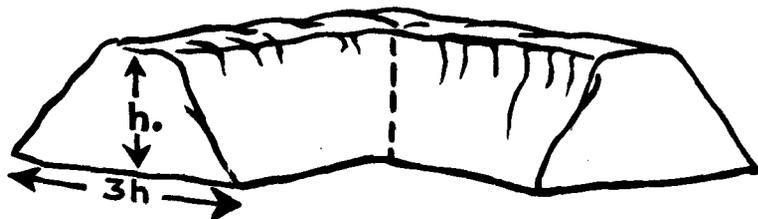
feet deep, and the water in the deep side is about three to four feet deep. If the nights are cold in the winter in your country, the water in the deep side of your pond should be about four to five feet deep.



View of a typical fish pond

When you build a pond on a slope, it is better not to make it more than 30 feet wide. A pond about 30 feet wide, and about 60-70 feet long (10 big paces by 20 big paces) is about right for one family.

Do not make your pond so big that you cannot look after it yourself with the help of your family.



Make your pond walls this shape

The dykes (walls of your pond) should be much wider at the bottom than at the top. Their width at the bottom should be about three times their height.

Both the bottom of the pond and the dykes must be well beaten with some flat wooden or metal tool before you let the water into the pond.

Remember, the ditch which brings the water to your pond must reach the pond at the side where the water is shallow, not at the side where it is deep.

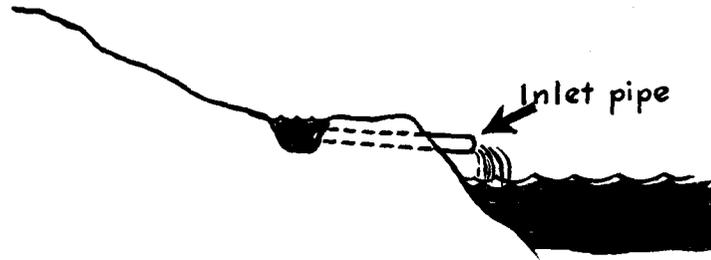
If the ditch bringing water to your pond is



A simple way of filling the pond

level with the top of the dyke, the water may be let into the pond through a simple small cut in the dyke which may be closed with a board or flat stone.

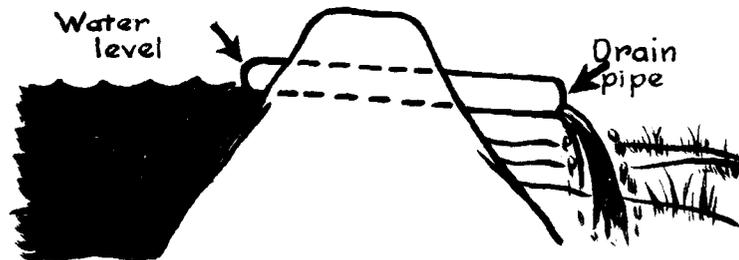
If the ditch bringing water to your pond is below the top of the dyke, the water may be



An inlet pipe may be needed for some ponds

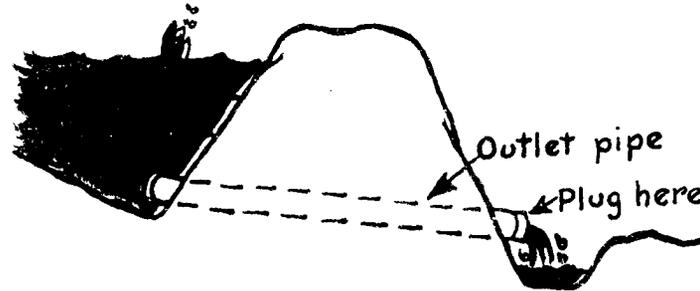
let into the pond through a bamboo pipe pushed through the dyke. A tight fitting wooden plug must be used to close the pipe.

It is not enough just to bring water to your pond. You must also be able to get rid of any extra water that falls into the pond, for example in a heavy rain storm. The depth of water in the pond must always stay about the same.



Use a drain pipe to remove extra water

To do this push a few bamboo pipes through the dyke at the deep side, an inch or two above the level of water you want to keep in the pond. If any extra water falls in your pond it can then run away through these pipes.

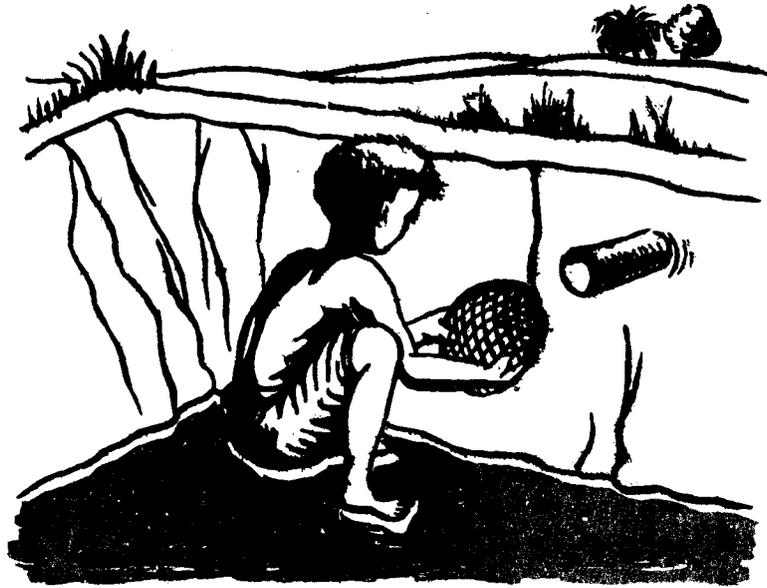


An outlet pipe is needed to empty the pond

You must also be able to empty your pond at certain times. To do this, push a bamboo pipe through the bottom of the dyke at the deep side of the pond; this pipe should be only just above the floor of your pond.

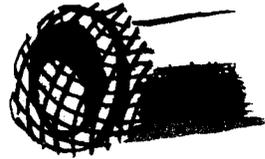
Make a ditch outside your pond to carry away waste water, otherwise it will make a big mess.

All pipes through the walls of your pond



Screen all inlet and outlet pipes

must be screened inside the pond so that the fish cannot escape through these pipes. You can screen these pipes by tying either loosely woven mat, very small mesh chicken wire or mosquito wire around the end of the pipe in the pond. The pipe which you use for emptying the pond must of course, be kept closed with a good wooden plug.



Stocking the Pond

When you have built your pond, you will want to put some fish in it. This is called 'stocking the pond'.

You will be asking yourself how many fish you ought to put in the pond.

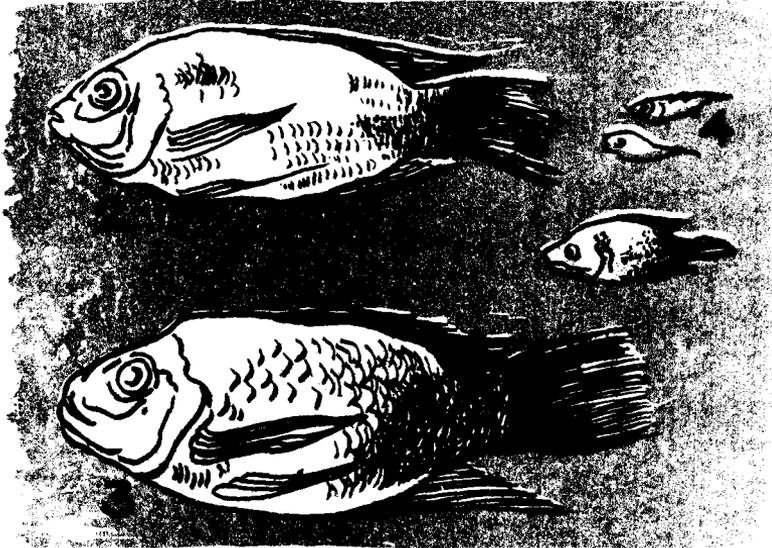
Remember this: a fish pond can support a certain number of fish per square foot of the pond, and not more.

If you put too many fish in your pond some will starve; they will not grow properly, and will not be good for eating.

If you put too few fish in your pond, it will be a long time before the pond gives you enough fish to eat.

So how many fish should you put in your fish pond?

If you intend to feed the fish in your pond (see next chapter in this book) 6 lbs. of fingerlings will be about the right amount of fish to start a pond 30 x 60 feet. (A fingerling is a small Tilapia about 2 inches long; there will be about 300 fish in 6 lbs. of fingerlings.)



Tilapia grow quickly and breed early: 1. Fingerlings; 2. Six weeks later; 3. After nine weeks in the pond; 4. Small fry found three months after the pond was stocked.

If you do not intend to feed your fish, you should start your pond with about half this number; i. e. about 3 lbs. or 150 fish.

Remember, this is the right amount of fish for a pond about 30 x 60 feet. A bigger pond needs more fish, and a smaller pond needs less fish.



Put the fingerlings carefully into the pond

You may think that 300 little fish will not give you many fish dinners in one year. But remember, two Tilapia will start to breed when they are 4 months old. They will breed three or four times in a year if the weather stays warm. Each pair of fish may produce as many as 10,000 fingerlings in one year. So you will soon have many fish.

When you receive your fingerlings, do not just throw them into the pond.

Put the container into the pond, keeping the lid above water, for about half an hour; then take the lid off and tip the container slowly over until all the fish have gone into the pond.

DO NOT LET THE FISH STAND IN THE SUN TOO LONG IN THEIR CONTAINERS. BE SURE TO PUT THEM IN THE SHADE IF YOU ARE NOT QUITE READY TO PUT THEM IN THE POND.

It is also a good thing to take some of the water out of the container and replace it slowly with fresh water from the pond.

Feeding the Fish

Fish cannot live without food. The fish in your pond will grow quicker and bigger if you make sure they have enough food to eat.

So let us see what kind of food Tilapia like to eat; and let us see how we can make sure they have enough to eat.

Very young Tilapia (up to $1\frac{1}{2}$ inches long) mostly eat the very small algae which give a green colour to stagnant water.

These algae will grow better if you put a little manure in the water in your pond.

At first, add about 3 pints of manure to the water each week; this should be enough. When the water in the pond is a soupy green you can stop manuring.

Young Tilapia, between $1\frac{1}{2}$ " and $2\frac{1}{2}$ " long

like to eat cooked taro, sweet potato, rice, or other vegetables. You must chop this food up very fine, or pound it into a paste, before you add it to the water in the pond.



Chop all fish food up very fine

Older Tilapia, over 2½" long, also like the same kinds of vegetables, but they can eat this food even if it is only broken into small lumps.

You do not need to chop it up or make it into a paste.

HOW MUCH FOOD SHOULD WE GIVE THE FISH?

About 1 lb. of food should be put in the water every day for each 20 lbs. of fish in the pond. So if we have a pond 30 x 60 feet and put into it 6 lbs. of fingerlings, this is how we should feed them:

First, put 3 pints of manure into the pond at least one week before you put any fish in the pond.

Then, when you have put the fingerlings in the pond, go on putting 3 pints of manure in the pond once per week for one month. You do not need to put any other food in the pond.

For the next three months, put about $\frac{1}{2}$ lb. of finely chopped food, or food paste, into the pond every day.

For the next three months after that, put one pound of food into the pond every day. This

should be broken into small lumps, but need not be chopped up very fine.

After that, put 2 lbs. of food in the water every day until you drain your pond.

If you cannot spare some cooked taro, try using finely chopped taro, banana, sweet potato, or cassava leaves. Anything left over from your own meals can also be chopped up finely and be given as food to the fish. But do not give them more than the amounts stated above.

If you do not feed your fish they will not grow very quickly or big, so you must not expect to get too much out of your pond, even if you manure it.

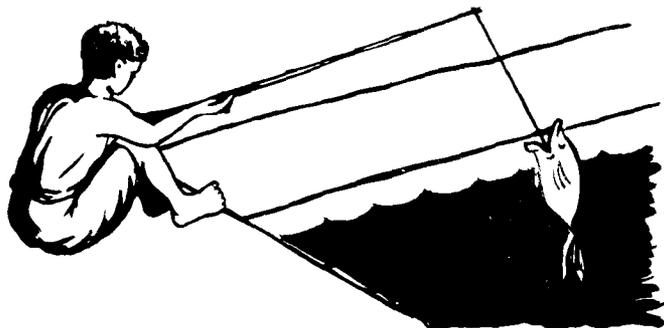
It is best, therefore, to feed your fish in the way described here.

*
* *

Cropping the Pond

You can start taking fish out of your pond to eat after 4 to 5 months.

At that time it is best to catch them with a hook and line. You can use earthworms or cooked taro for bait.



Use a hook and line to catch the fish

Do not catch more than you need for one meal; your pond will keep the others fresh for you; it is even better than a refrigerator.

After a while it may become difficult for you to catch a meal with hook and line. You can then use a simple net, about 5 feet high by 30 feet long. The mesh should be about $1\frac{1}{2}$ " stretched.



A small mesh net can be used in the pond

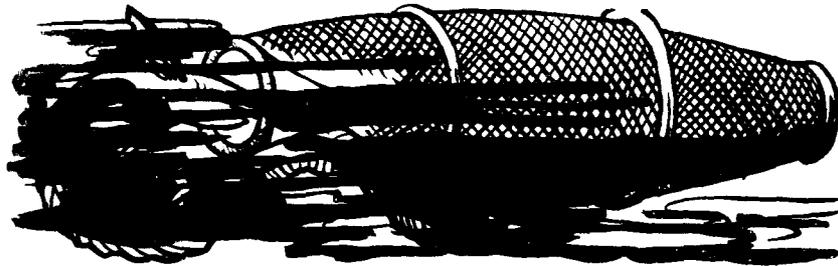
You drag the net through the whole length of the pond or through part of it.

A cast net can also be used if you know how to use it.

You will probably catch some small fish as well as the larger ones. Any small fish should be put back in the pond to go on growing. Also put back in the pond any fish you do not want to eat immediately.

Do not forget that eels may come into your pond by crawling over the dykes.

Eels are good to eat, but do not forget that if you leave them too long in the pond they will kill a lot of your Tilapia.



Use a baited trap to catch eels

A couple of simple traps, made of bamboo or rattan, and baited with a dead fish or a dead frog, will help you to catch the eels.

REMEMBER: the less you disturb the fish in your pond, the better they will grow.

Care of the Pond

If you want to get good fish out of your pond, you must keep it clean and in good order.

Do not let weeds grow in your pond. They do not help the fish, but may help mosquitos. If you can get some mosquito fish, put them in your pond just as a safety measure.



Keep your pond clear of weeds

Cut the grass growing round the edge of the pond; keep it clean and tidy.

Once a year you will have to empty your pond. This is the time to carry out the main repair jobs, such as renewing the bamboo pipes and their screens, repairing the dykes, etc.

Before you empty your pond, you must prepare some clean old drums and fill them with clean water. You will keep your fish in these drums while you are emptying and cleaning your pond.

Drain off the water and clean the bottom of your pond; remember, the mud you scrape from the bottom is a very good fertilizer for your garden.

You should let the bottom of your pond dry up for about two days before you let the water into it again.

When you have finished cleaning and repairing your pond, you will have to put some fish back into it; this is called 'restocking' the pond.

Let us see how to do this. First of all we must sort our fish into two lots; one lot will



Sort your fish into two groups

be put back into the pond; the other lot will not be put back.

For the fish that are to be put back into the pond, choose about 12 big ones and a few hundred small ones.

Put these in two drums by themselves.

When choosing the 12 big fish, choose 6 males and 6 females; the males have a red edge on their tail fins; the females only have a pink edge.

The smaller fish should be between $1\frac{1}{2}$ " and 2" long.

When choosing these fish for restocking your pond, be sure to choose only strong fish. Do not choose any fish which do not swim strongly. Fish which do not swim strongly are weak, and should not be used for restocking the pond.

When you have sorted out your fish into their drums, be sure not to leave these drums standing in the hot sun. Put them in a shady place.

What are you to do with the fish which will not be put back into the pond?

The large ones can be salted and dried, or smoked, depending on how long it will be before you eat them. (Another little book in this series called "Fish Preservation Simplified", tells you how to do this.) The smaller ones can be salted, or cooked and dried, or you can use them to fatten pigs or chickens.

Remember: When you empty and clean your fish pond, try to work quickly. Do not start the work, then leave it, then come back to it, because if you have to leave your fish in the drums too long they may die.

Summary

- This book tells you how to look after a fish pond in which you are going to keep *Tilapia mossambica*.
- Build your pond on good watertight soil, preferably on a gentle slope.
- Make your pond so that the water will be about 2 feet deep at one end, and about 3 to 4 feet deep the other end.
- On a slope, a pond should not be more than 30 feet wide (in the direction of the slope); 60 to 70 feet is a good length.
- Do not make your pond too big; you will have to look after it.
- The bottom of the dykes of your pond should be about three times as wide as the dykes are high.
- Be sure you can control the water supply of your pond easily. Do not forget to put pipes in the lower side for drainage and for overflow.

- Screen all pipes.
- About 300 fingerlings about 2" long will be enough to start a pond 30 x 60 feet, if you are going to feed the fish.
- If you are not going to feed them 150 will be enough.
- Put the fish container in the pond for about $\frac{1}{2}$ hour before you turn the fish out.
- Do not leave the fish container standing in the sun.
- About 3 pints of manure per week will be enough for a pond 30 x 60 feet. Start manuring about a week before your fingerlings are due to arrive.
- You can feed Tilapia with cooked taro, sweet potato, etc. Pound or chop this food fine if the fish are small.
- With 300 fingerlings and a pond 30 x 60 feet use manuring for one month, then give:
 - $\frac{1}{2}$ lb. food per day for 3 months
 - 1 lb. food per day for next 3 months
 - 2 lb. food per day until you drain the pond.

After 4-5 months you can start using a hook and line to get a meal of fish, say, once per week.

If it becomes difficult to catch fish with hook and line, use a small drag net (mesh $1\frac{1}{2}$ " stretched), or a cast net if you know how.

Eels eat a lot of your fish, but they are also good to eat. Use eel traps in your pond.

Do not let weeds grow in your pond. Cut the grass at the edge of the water.

Put mosquito fish in your pond if you can.

Empty your pond and repair it once per year.

When it is empty, let it dry for two days; you can use the mud off the bottom on your garden.

Carefully choose about 300 strong fingerlings and 12 big fish (6 males and 6 female for restocking your pond.