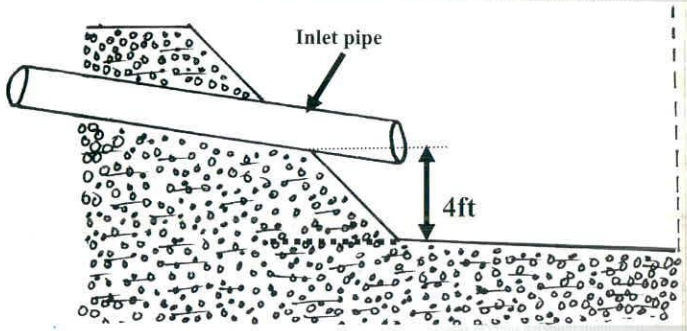

Figure 5: Sketch of the Pond inlet

Step 11

Dig up a 6ft diameter channel at the lowest point of the pond in a corner diagonally opposite to the inlet at the deep end. Place a 3m, 3-6" diameter plastic pipe in the dug out channel. This will be the outlet. Connecting a J-section to the plastic outlet pipe and a stand pipe is important because it helps to control the pond water level (Figure 6). The J-section should be approximately 1m away from the pond wall.

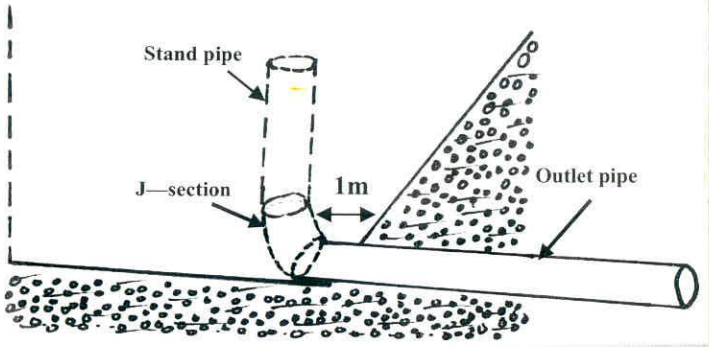

Figure 6: Sketch of the pond outlet

Step 12

With the now well constructed pond (Figure 7), bring the top layer soil that was initially removed from the pond area and spread it evenly at the pond bottom.

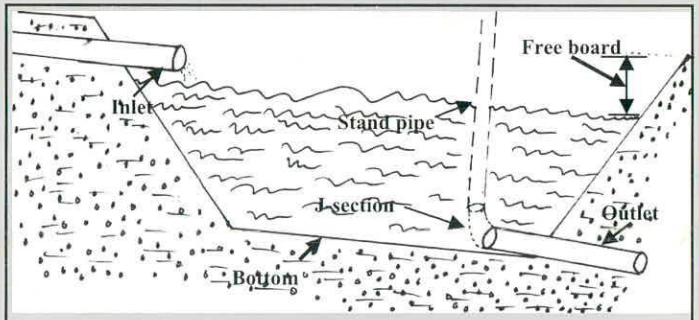

Figure 7: Longitudinal section through a pond

Please note the following:

1. The outlet and inlet pipes should be screened to avoid fish loss and entry of wild fish respectively.
2. The outlet pipe should have an equal or wider diameter, compared to the inlet pipe, depending on the volume of water in the inlet channel. This will help to keep adequate water in the pond.
3. Water should be let into the pond only after the pond is constructed and well compacted. The water in the pond should not cover the dykes and should leave a free board of 0.30m in small ponds and 1.0m in large ponds.
4. The stand pipe should be kept in a vertical position, in order to maintain a high water volume in the pond. The stand pipe can be lowered or removed if the water volume need to be reduced or during pond drainage.

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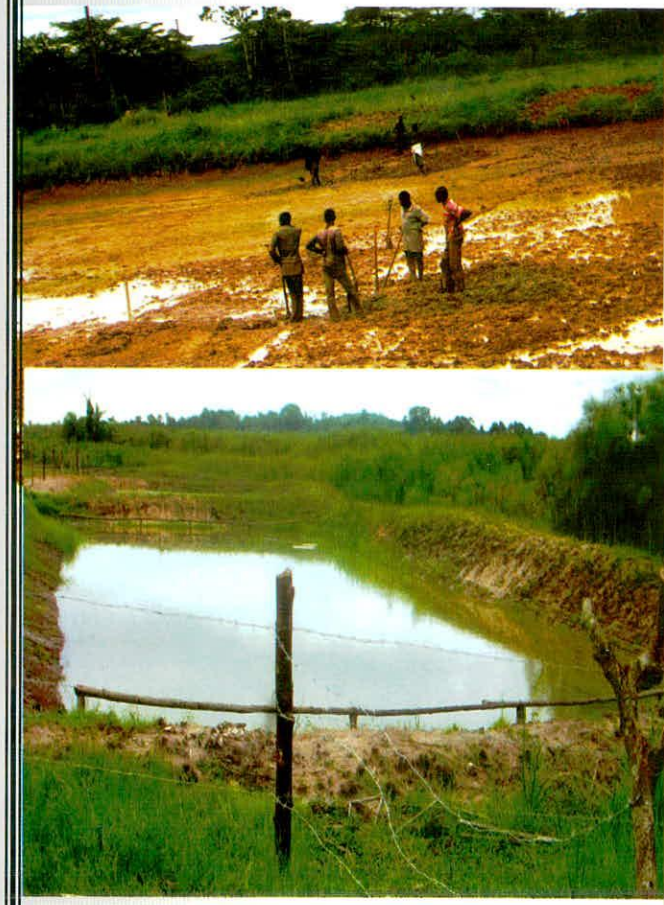
HOW TO CONSTRUCT AN EARTHEN FISH POND



June 2014

Introduction

Fish farming is the practice of keeping fish in artificially constructed water enclosures. In Uganda, the practice is popularly carried out in earthen ponds, though fish can also be kept in tanks and cages.

Fish ponds are more popular because they are easier and cheaper to construct. However, many individuals who may be interested in engaging in fish farming using earthen ponds, do not know how to construct fish ponds. Below is a step by step procedure for constructing a simple earthen pond.

Step 1

Ensure that the area for pond construction is well sited (with sufficient natural flowing water—spring/stream, with clay/loamy soils, free from trees and tree stumps, free from ant hills, stones).

Step 2

Clear the site of all the grass, trees, shrubs and thickets.

Step 3

Measure out the pond area (say 20x50m) on the ground with help of a string and pegs, in a rectangular shape. This will form the first rectangular area (A1) (Figure 1).

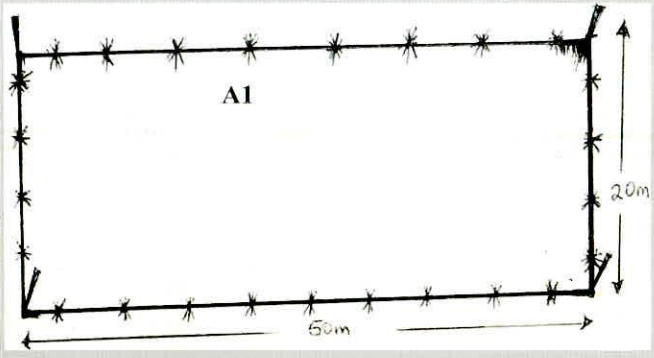


Figure 1: First demarcation of pond area (A1)

Step 4

Diagonally measure 1m from each of the pegs placed at the corners of the rectangular area (AI), and place a peg at that point (1m away from the first peg). Join the new pegs with a string to form a second rectangular area (A2) (Figure 2).

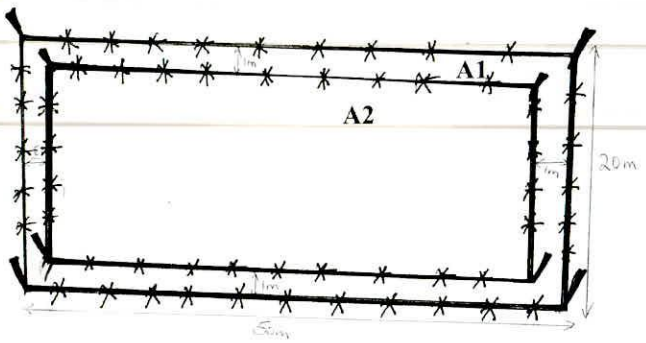


Figure 2: First and second demarcation of pond area (A1 &A2)

Step 5

Remove the top soil to the depth of 20cm from the demarcated areas (A1 and A2), using a spade. Place the soil aside in a heap, away from the pond area.

Step 6

Start digging the soil out of the rectangular area (A2), beginning from the intended shallow end of the pond towards the intended deep area. Dig out the soil to a depth of 3ft. Dig vertically at 90° to the surface. Scoop out the soil using a spade and evenly spread it outside the rectangular area (A1) and then compact it to form a strong dyke.

Step 7

Ensure that the pond bottom gently slopes from the inlet end towards the outlet end at approximately $5\text{-}10^{0}$. This can be achieved using a builders' spirit level.

Step 8

When done with the inner rectangular area (A2), start working with the outer rectangular area (A1). Start to dig out soil from point B towards A and from C towards D at $15\text{-}45^{o}$. Scoop the soil out and spread it evenly outside rectangular area A1 (Figure 3) and compact it to form a firm dyke.

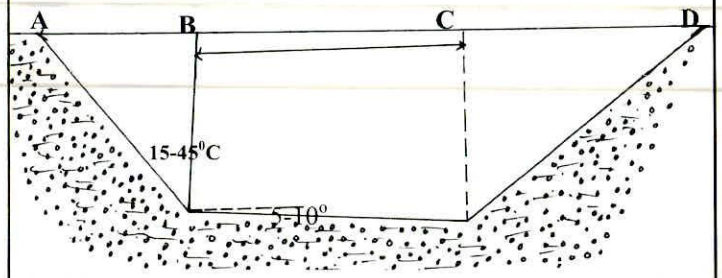


Figure 3: Cross section of a fish pond under construction

Step 9

Pour some water on the banks, bottom and dyke and using a wooden club (Figure 4), firmly hit/compact the soil to ensure that there is no loose soils in these areas.

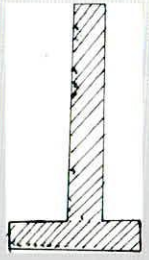


Figure 4: Sketch of a wooden club used to compact ponds

Step 10

Dig up a 3-6" diameter channel, midway the width of the now newly opened pond area, at 4ft from the pond bottom (this also depends on the depth of the inlet canal). Place a 3-6" diameter plastic pipe of 9m (this length depends on the pond size) long in the opened channel, with a section of the pipe into the pond. This will act as the inlet pipe (Figure 5). Cover the pipe with soil and compact, to keep it from exposure.