

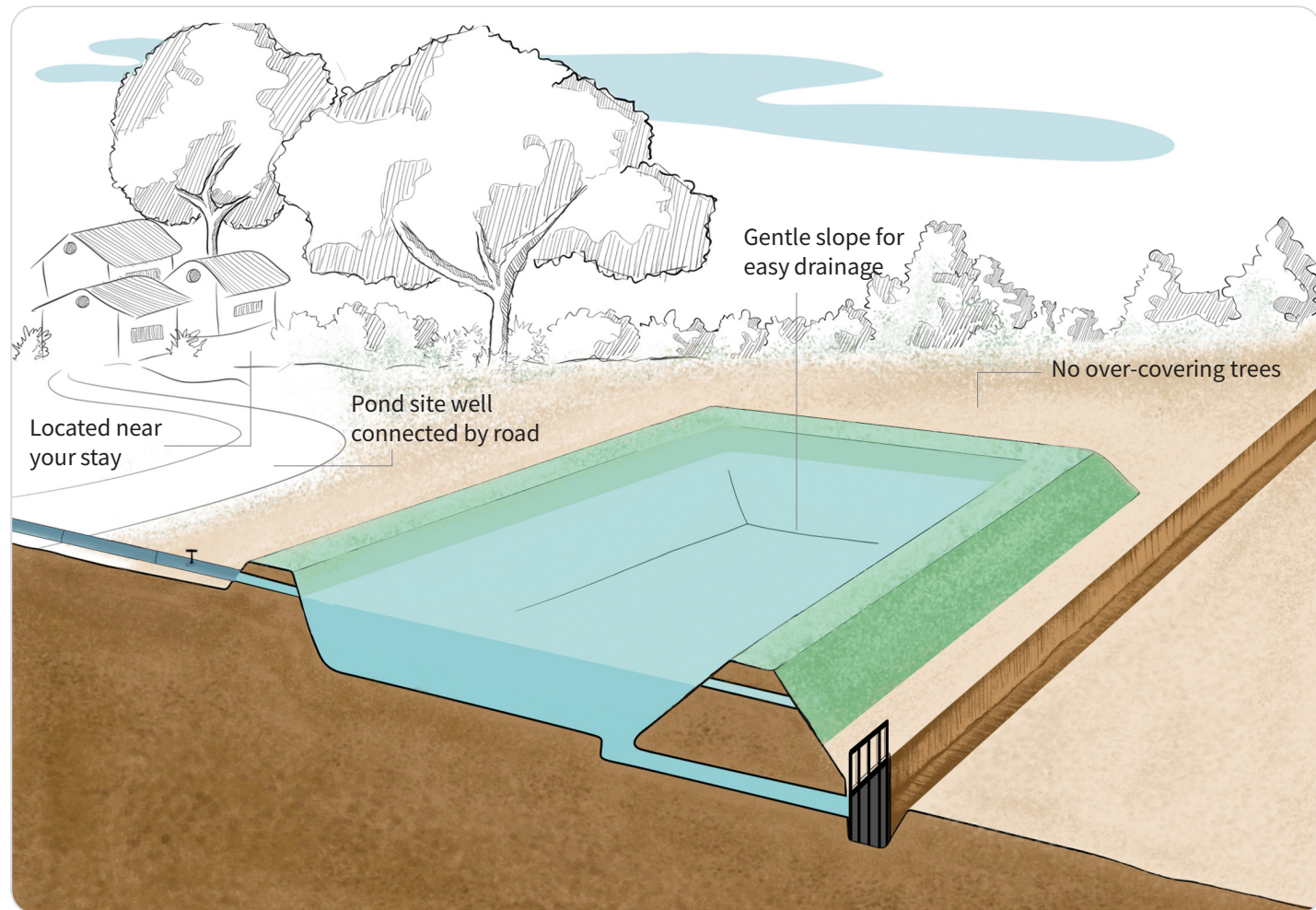
Pond Construction

The success of aquaculture depends to a large extent on the proper selection of the site & developing it into an ideal fish pond. Important points to be considered while constructing a new pond are:

- Selection of site suitable for pond construction
- Type of pond
- Size and shape of pond
- Construction details

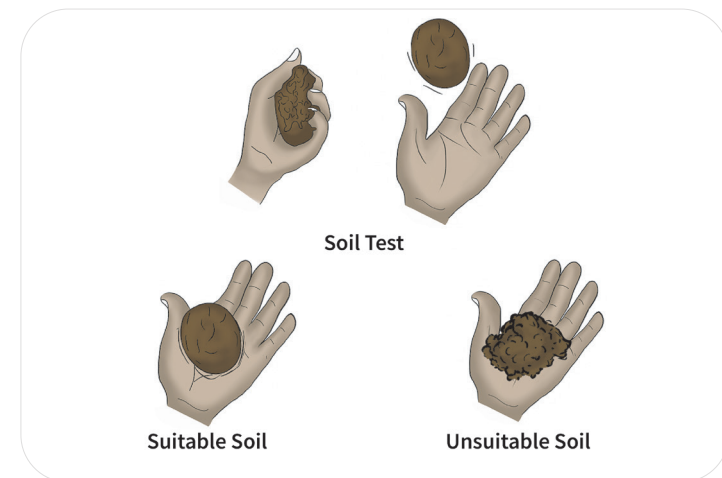
Site Selection

- The pond should be located near your stay for better care & safety.
- Site should have good access to road connectivity, reliable power source & relatively free from pollution.
- Select a place with gentle slope for easy drainage; avoid steep slope.
- Make sure there are no overcovering trees.
- There should be a reliable water source nearby pond for supply round the year.
- Preferred sources: rivers, canals, streams, dam, well, borewell, etc. Avoid rainwater as it is not reliable year long.
- Water can be supplied via feeder channel, storage tank or pipeline by gravity or by pumping to the ponds.



Soil Quality

- Ideal soil should be a mix of red soil & clay for required water retention.
- Avoid sandy & gravelly soil to avoid excessive seepage.
- A simple soil test can help understand soil quality.
- Wet the soil sample, make a ball and squeeze some soil in wet hand, if the soil holds the shape after opening the palm means its a suitable soil for pond.



Type of Pond

- Earthen pond is best suited for carp culture as the soil base is essential for production of plankton: natural food for carps.
- Construction of earthen pond is easier & cost effective than stone riveted or concrete pond.

Size & Shape of Pond

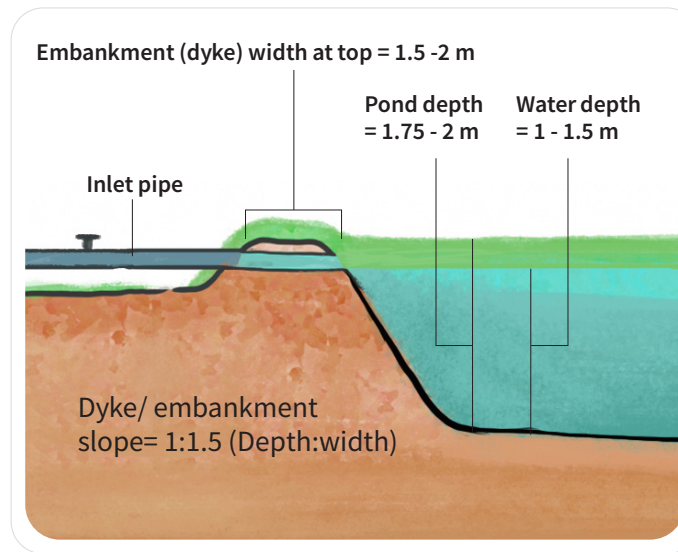
- Ponds of any shape with minimum water depth of 1 m can be used for aquaculture although rectangular ponds are preferred for ease of construction, operation & maintenance.
- Very small ponds (0.20 Ha) could also be used for producing fish for self-consumption but may not be very economical. Very large ponds (> 2 ha) are not preferred from operational point of view.
- Hence, for economic and operational purpose 0.02 - 0.2 ha ponds are suited for rearing & 0.2 - 2 ha ponds are preferred as grow-out pond for producing marketable fish.

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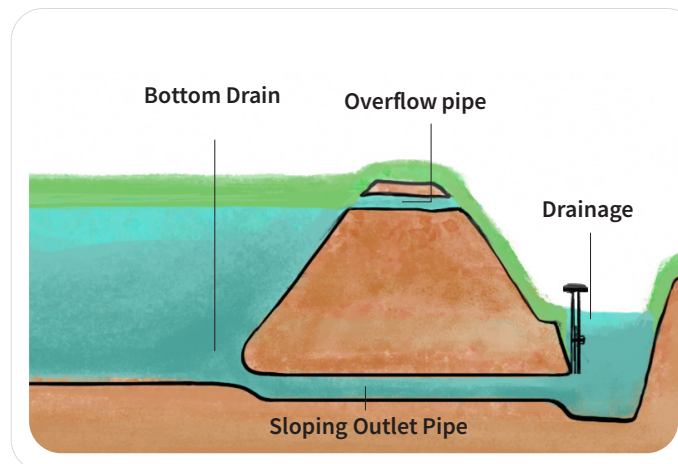
Dykes are the most important part of a fish pond, as they keep the necessary volume of water impounded and form the actual pond.

Considerations to determine dyke height:

- Water level required in pond.
- The free board, the upper part of a dyke and should never be under water (60 cm above mean sea level (msl)).
- Settlement allowance due to compression of the sub soil by the dyke.



- Dyke should resist water pressure.
- It should be impervious, i.e. nil or minimum water seepage.
- It should be high enough to keep the pond water from ever running over its top, which could destroy the dyke quickly.
- Provide water supply inlet on the opposite side of the outlet point just 0.5-0.75m below the top of the pond (starting point of the free board).



Compacting the Dykes

- The primary objective of dike compaction is to reduce water permeability, and to strengthen the dyke.
- Manual compacting is suitable only for small pond sized ponds (1 m height) by using the long handled round cast iron rammer; A hand rammer with a metal or concrete weight.
- As the area to be compacted increase in size, it is better to compact mechanically.
- For small compaction jobs, you can use vibration plates and percussion rammer.
- For bigger jobs, use construction equipment such as rollers, tractors, trailing chain excavators and trucks by running over it repeatedly.
- Protect against erosion by providing grass turfing on the crest of the dikes, on (outside) and inside the pond, down to the normal water level of the pond.

Pond Repair

- The leakages can be set right by filling the crevasses by filling with good quality soil, raw salt and compacting either manually or by using compacting machines.
- During rainy days covering top of the pond bank with low cost polythene sheet or dry paddy hay will reduce soil erosion.
- Plough the pond bottom and rake it to remove any algal mats and also allow hazardous gases to escape in to atmosphere.
- See that all the water supply pipes are not leaking and inlets and outlets are in working condition.