FISH FARMING TIPS

FARM AFRICA

Wild fish stocks in Lake Victoria are dwindling. Tilapia, which is widely eaten across Kenya, is getting particularly scarce.

Farm Africa's Kenya Market-led Aquaculture Programme (KMAP) is promoting fish production in ponds to:

- help protect Lake Victoria's strained resources.
- provide a growing population with a sustainable source of fish.
- enable fish farmers to build thriving businesses.

FARM AFRICA

Farm Africa reduces poverty by unleashing African farmers' abilities to grow their incomes in an environmentally sustainable way.

The KMAP programme is looking to work with mid-level farmers who have at least three commercial fish ponds.

IS GROWING FISH SOMETHING FOR YOU?

Like most other types of farming, fish farming is a risky business that requires specialist knowledge, skills, and a high initial investment.

Complete this quick checklist to find out if fish farming is for you:

YES	NO	
☐	☐	Do you own suitable land with a good source of high-quality water?
☐	☐	Is there sufficient demand for the fish you want to grow?
☐	☐	Can you really devote the money, time and labour necessary?
☐	☐	Do you have enough resources to purchase feed for the whole production cycle? Quality feed will give you the best results: you need about 450kg of feed to grow 300kg of fish in a 300m^2 pond. With lower quality feed you might need 900-1500kg of feed.
☐	☐	Is the water temperature optimal for the fish species reared?
☐	☐	Have you identified and are you able to deal with risks such as thieves, flooding, etc?

TILAPIA FARMING

Tilapia can be reared in earthen ponds, ponds with liners, cages and raised tanks.

Maximum stocking density:
Stocking numbers of fish for different feed qualities.
The average weight for a fish at harvest is estimated at 200 grams.

Production system based on inputs	Recommended density at harvest in kg/m²	Number of fish per m² (fish of 200g each)	Number of 200g fish in a 300m² pond at harvest	Number of fingerlings to be purchased at 10% mortality
Green water (fertilisation only) no other feeds available	0.3 - 0.5	1.5 - 2 fish	450 - 600 fish	500 – 700
Community fish feeds available	0.6 - 0.8	3 - 4 fish	900 – 1,200 fish	1,000 – 1,350
Commercial fish feeds available	0.8 – 1.0	4 - 5 fish	1,200 – 1,500 fish	1,350 – 1,700

Intensive fish farming	Up to 150kg/ m²	Only for closed circulation systems (needs 24/7 electricity, which makes it expensive)

Green water	Commercial feed
Low costs	Higher investment needed
Low production	High production
Less work	More work

Feed = money!
Feeding fish is throwing money in the pond; make sure it is money well spent. As a rule of thumb, never feed pellets that are bigger than the eye of your fish.

CATFISH VERSUS TILAPIA

	Catfish	Tilapia
Growth in six months	Max 1kg	Max 350 grams
Stocking density without aeration	Max 5kg/m^2	Max 1kg/m^2
Market and price	Not everywhere Prices between 250-400Ksh/kg	Anywhere at a good price (300-500Ksh/kg)
Demand	Low	Very high
Feed	More expensive (needs more protein)	Cheap, can even be grown in ponds that are fertilised

ESSENTIAL EQUIPMENT ON FARM

For a serious farmer it is important to know exactly how much equipment is needed.

Every farm should have a:

WEIGHING SCALE

for fish and incoming feed (10-50kg) (precision 100 grams) and a weighing scale for sampling and measuring feeds (0-5 kg) (precision 1 gram) preferably digital

MEASURING TAPE

(minimum 10 metres)

CALCULATOR

HARD COVER BOOK

to record your daily, weekly, monthly and harvest records

*When you intensify it is important to also monitor your water quality. pH, Ammonia, Nitrate and Nitrite are key elements to monitor. Once you are large scale you should also monitor oxygen levels.

HOW TO FEED YOUR FISH

- Feed the fish twice a day, in the morning and early afternoon. Recommended feeding times are between 11am and 4pm.

- Always feed the fish at the same time and at the same place of your pond. You can "call" your fish by knocking on the feed bucket or making a sound. Fish will learn fast when and where to get the feed. Try to attract the fish to the feeding place by only throwing a small amount of feed over a larger area of the pond at the beginning of your feeding session.

If the fish are not responding, stop the feeding!

- Don't feed your fish when they are not responding. This could be an indication of low temperature or water quality problems.

HOW AND WHERE TO SELL YOUR FISH?

Before you start fish farming you should have studied the market. Make sure that you produce what you can sell, eg a student cannot buy a 400 gram fish, but would be more likely to buy a smaller, less expensive fish.

The client is king: notify your customers one to two weeks before harvesting, it is good to bring a sample before so there are no surprises, which will mean you will have to re-negotiate the fish they want. Figure out what size and how they want the fish: whole, gutted, descaled, deep fried?

Plan early to avoid surprises and do not let your customers down; give honest and good information. This way you will make good money and have customers for the next harvests.

STOCKING

CATFISH:

Make sure you stock fish of the same size.

TILAPIA:

Stock the pond with all male tilapia fingerlings.
All male means that over 98% of the fish are male.
The use of mixed sex tilapia is not recommended because:

1) Males grow faster than females
2) Mixed sex tilapia will start to reproduce after a few months

Spending a bit more money on buying good-quality, male tilapia fingerlings of good size from your trusted fingerling producer will pay off at harvest!

FEEDS

Make sure you check the feeds before you accept delivery or before you buy.

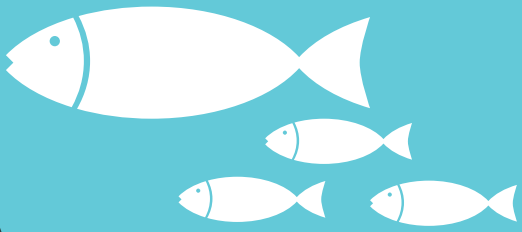
- Weigh the bag and make sure that it has the quantity it claims to have on the bag.
- Store the bags on a pallet off the floor and not against the wall.
- Make sure the bags and the feed are dry and free of mould.
- Verify the size and shape of the pellets (they should be almost round).
- If they claim the feed is floating: try it in a bucket with some water and check that at least 80% of pellets are still floating after 30 minutes.
- You can also have the protein and fat content tested, ask your Aqua Shop or agent where this can be done.

FISH SAMPLING

Sample your fish every month to calculate the total weight and individual weight. This allows you to calculate the growth, daily feeding rations and food conversion ratios (FCR). You can only estimate the population of your fish after sampling.

FISH HARVESTING

Fish should be ready to harvest within six to nine months.
Stop feeding the fish two days before harvest. Prepare the tools (seine net, plastic buckets, weighing scale) and labour for harvesting. Harvesting is done early in the morning. During harvesting, handle fish with care to avoid damage and post-harvest losses; always wet your hands/equipment and keep the fish as long as possible in the water. Partially drain the pond very early on the day of harvest.



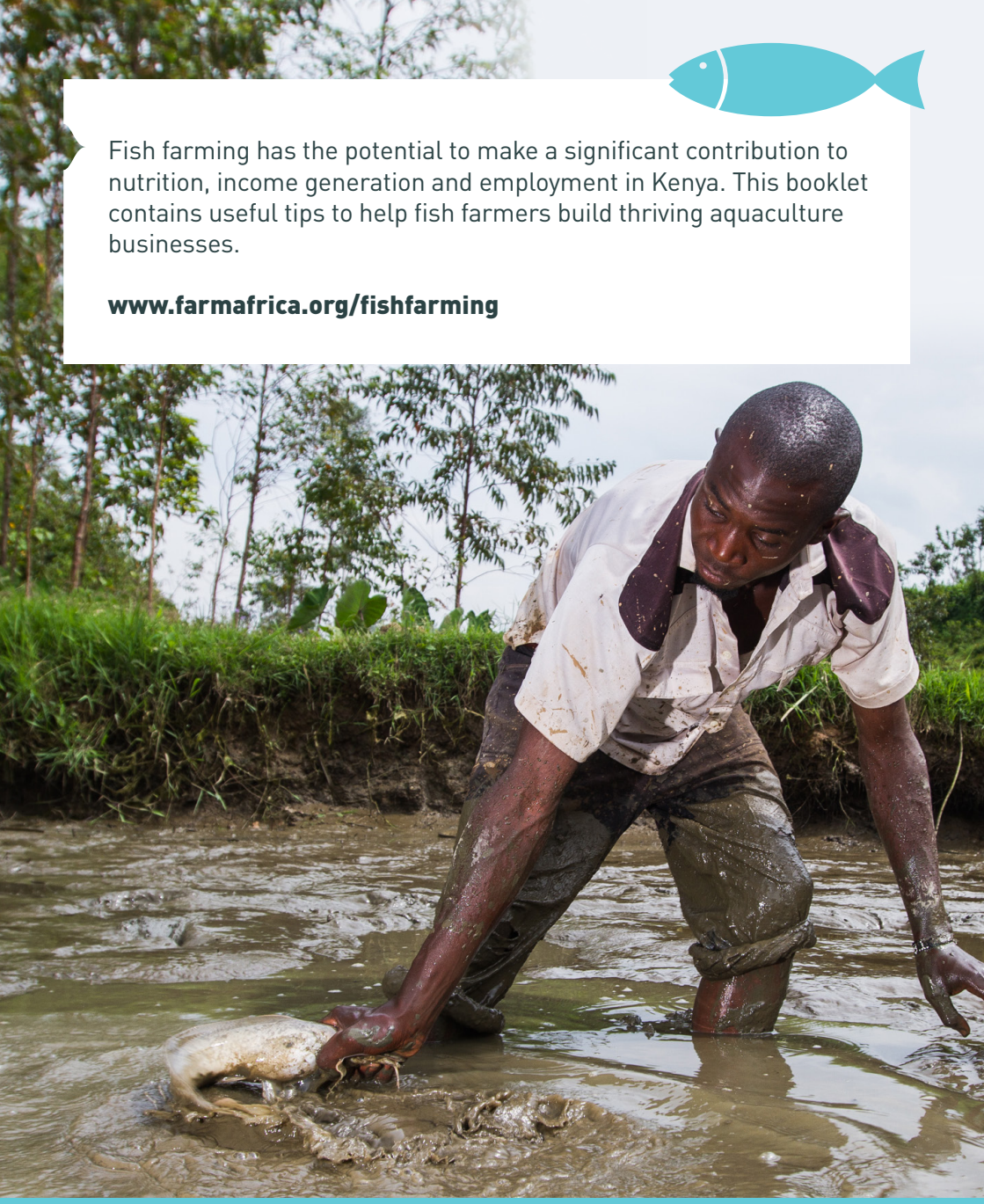
FARM AFRICA

Farm Africa works directly with farmers, suppliers and traders to improve the production and marketing of fish. We do this by:

- Providing training for fish farmers and helping them to access high-value markets to increase their incomes.
- Supporting the suppliers of feed and fingerlings (young fish) to improve the quality of their produce and helping them to sell to farmers.
- Working with traders to increase their access to markets and capacity to sell larger volumes of farmed fish.
- Carrying out an educational campaign to show the benefits of farmed fish over wild-caught fish.
- Helping fish farmers to organise themselves into trade associations so that the industry can thrive.

Fish farming has the potential to make a significant contribution to nutrition, income generation and employment in Kenya. This booklet contains useful tips to help fish farmers build thriving aquaculture businesses.

www.farmafrica.org/fishfarming



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