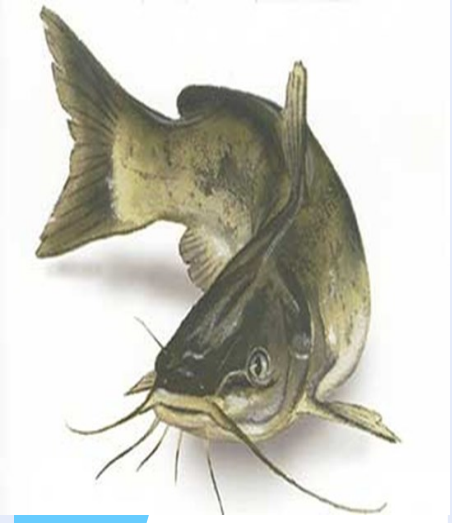

The Kyanja Bulletin

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Adoptive Research Trials at Kyanja Agricultural Resource

FISH FARMING EDITION

Inside this issue:

Aquaculture

Worldwide, fish farming is the fastest growing form of farming at 10% per year mainly because of lower investment capital and higher profit margins.

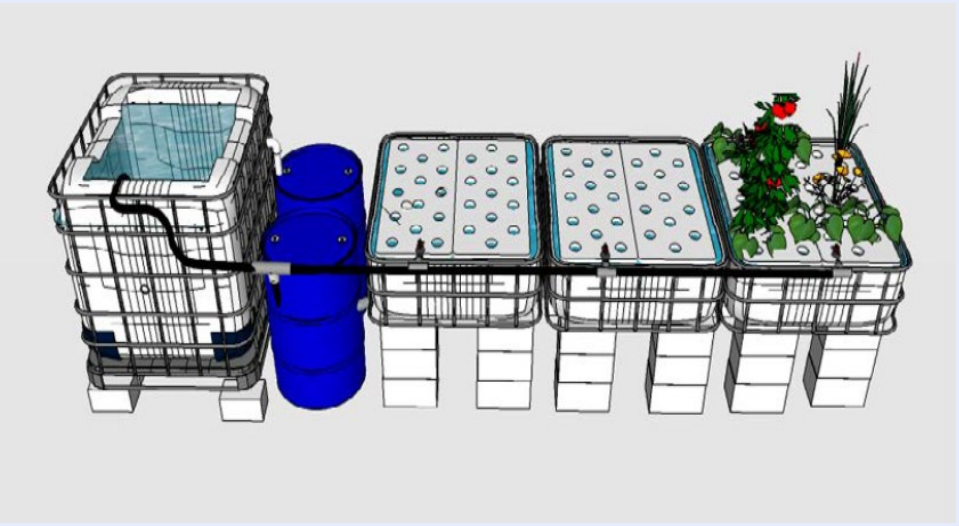
The fish farming in Kampala has been until now based on small earthen ponds characterized by low yields. However, these require bigger land based in wetlands and using open water sources. Because of rapid urbanization, limited space and a growing population; there is need to find alternative farming technologies.

Studies have also revealed that earthen pond based-culture systems have very low yields compared to other systems like concrete tanks which produce 100 times higher.

Tank-based fish farming is when fish is grown in plastic, polythene sheets, and concrete or glass tanks. The enterprise can be located in backyards, basement or rooftops of buildings.

It can be integrated with vegetable growing by using the waste water of the fish growing medium.

The Aquaponics System



Tank-based fish farming

Under this system, arming is the growing of fish in plastic, polythene sheets, and concrete or glass tanks. The enterprise can be located in backyards, basement or rooftops of buildings. It can be integrated with vegetable growing by using the waste water of the fish growing medium.

Outputs:

The initial investment and running costs (Break-even) will be recovered after one growing cycle of 8 months and a profit earned. Thus in subsequent growing cycles the same growing tank will be used. Therefore, in the second growing cycle the cost will be as follows:

COST- BENEFIT ANALYSIS OF GROWING FISH

CYCLE 1 COSTS

SN	ITEM	SPECIFICATIONS	UNIT COST UGX	TOTAL COST UGX
1	Tank	2m x 3m x 1m= $6m^3$		800,000
2	Catfish seeds-450	BW=@10g	500	225,000
3	Fish feeds- 900kg	Floating pellets complete formula, 35% & 30% CP	2800	2,520,000
4	Water- growing medium			50,000
	Total			**3,595,000/=**

CYCLE 1 INCOME

Weight of fish in kg	selling/kg UGX	Total sales UGX
400	10,000	4,000,000
Gross profit	4,000,000 - 3,595,000	**405,000/=**

CYCLE 2 COSTS

SN	ITEM	SPECIFICATIONS	UNIT COST UGX	TOTAL COST UGX
1	Catfish seeds-450	BW=@10g	500	225,000
2	Fish feeds- 900kg	Floating pellets complete formula, 35% & 30% CP	2800	2,520,000
3	Water for growing medium			50,000
	Total			**2,795,000/=**

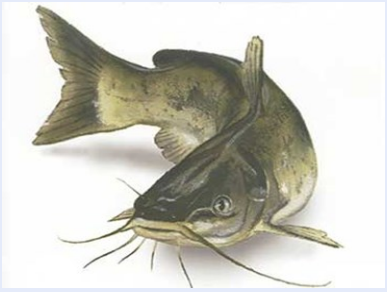
CYCLE 2 INCOME

Weight of fish in kg	selling/kg UGX	Total sales UGX
400	10,000	4,000,000
Gross profit	4,000,000 - 2,795,000	**1,205,000**

Introduction to Aquaponics

Aquaponics, is an integrated system of growing fish simultaneously with vegetables in the same unit. It is based in backyards or indoors of homes. It has high potential to provide fish for home consumption and sale. It involves rearing of fish and growing vegetables e.g. cabbages and taro in the same growing medium (water).

The fish are confined in a closed system with water re-circulating within. Fish excreta and nutrients are used and waste water is channeled to the filtering unit containing vegetables (grow beds) and provide them the required nutrients for fast growth to yield a completely organic product. These units serve both as vegetable growing facilities and water filtration for re-use in fish growing. The plants use nutrients from fish effluents thereby purifying the water to benefit the fish with zero waste to the environment and there is no need of exogenic fertilizers .



African Cat fish

Mirror carp

Benefits of the Aquaponics System

The advantage of these systems is that production of fish is high, production costs and labor minimal and there is no recess between one production cycle and another.

Instead of using toxic chemicals to grow plants, aquaponics and tank fish farming use nutritious fish effluents as plant nutrients.

It also avoids environment pollution because instead of discharging waste water, aquaponics uses the plants and growing media to clean and reuse the water indefinitely.

The only requirement for water is for top up of that which is evaporated. The fish species reared include African catfish, Tilapia nilotica and *Nkejje* (*Oreochromis niloticus*) and Common carp.

Tilapia

There is potential for breeding juvenile fish for sale as stocking seed and bait in addition to ornamental fish like gold fish. It can be located indoors in a living room, kitchen or veranda.

Practicing these farming forms in the city with high fish demand guarantees quick access to a better market and improved family nutrition. The incentives for increasing fish production in the City include: the increasing demand for fish and reduced supply from capture fisheries. There is therefore much potential for growing fish in the city using the methods described above.

KCCA has set out to promote this model in order to encourage adaption, create employment and improve household income and nutrition.
These units are set up at Kyanja agricultural center. For more information, visit the farm .

Plastic Aquaponics Unit with Vegetable production at Kyanja ARC

Wooden Fish Tanks at Kyanja ARC

Visit us at
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