

Table 1: A comparison of income (UGX) from mushroom growing and fishing

No of mushroom gardens	Estimated quantity from 400 gardens	Market price per kg (fresh) (UGX)	3 Months gross earnings (UGX)	Gross daily income (UGX)	Daily income (UGX) for a fisherman on L. Edward (2013 survey)
400	600 kgs	3,000-7000	1,800,000-4,200,000	20,000-46,000	5,000-30,000

Authors:

¹Bwambale Mbilingi, ²Lwandasa Hannington, ¹Odongkara Kostantine, ¹Nasuuna Agnes, ¹Akumu Joyce, ¹Okura Ritah and ¹Namanya Drake

¹National Fisheries Resources Research Institute

²National Agriculture Research Laboratories

Mushroom growing as a livelihood option to fishing among Lake Edward fisher communities

Recommendations

Mushroom growing should be incorporated in production plans; Operation Wealth Creation (OWC) programs and other development interventions of the districts surrounding Lake Edward in order to enhance adoption at landing sites.





Background

Fisheries activities are the main source of livelihood for the communities that live at Lake Edward fish landing sites. The landing sites include: Kazinga, Katwe, Kayanja, Kishenyi Rwenshama and Katunguru and are located within Queen Elizabeth Conservation Area (QECA).

In spite of being the main source of livelihood, 74% of the respondents in a 2013 survey reported that catches for the main targeted fish species namely: *Bagrus docmak* (Semutundu), *Oreochromis niloticus* (Tilapia) and *Protopterus aethiopicus* (Mamba) were declining due to overfishing and catching of immature fish by the rapidly increasing population. Lake Edward Frame surveys had shown that the number of fishing crafts increased from 302 in 2008 to 330 in 2011, while the number of fishers increased from 355 to 600 during the same period. Between 2008 and 2010, catch per boat, for *Bagrus docmak* (Semutundu) declined from 5.25 kg to 4.04 kg and for *Protopterus aethiopicus* (Mamba) from 2.63 kg to 1.03kg.

It has been suggested that reducing pressure on the lake should be handled using different approaches, one of which is introduction of programs for enhancing livelihood options which do not conflict with conservation of Queen Elizabeth Conservation Area (QECA). The main goal of this study was therefore to identify, prioritize and pilot livelihood options at selected landing sites of Lakes Edward and George.

Mushroom growing was prioritised by fisher communities at Kazinga, Kayanja, Rwenshama and Katwe landing sites on Lake Edward after which aspects of mushroom growing were piloted through groups comprising of 20-40 members during 2014/2015. The activities carried out under the pilot included: mushroom production, mushroom harvesting and post harvest management, value addition and marketing.



Figure 1: Mushroom pilot gardens at Kayanja landing site. A mushroom garden contains substrates (plants providing necessary nutrition) such as cotton husks usually piled in either black or U-tube polythene bag and mushroom spawn.

Why the Mushroom Pilot

Mushroom production requires minimal capital for start up and does not occupy large pieces of land. It is therefore convenient for fisher communities who live in national park sanctuaries without ample land. Mushroom growing can be a family business where the children and the wife or spouse can be involved unlike fishing where only one person is involved. It therefore has the advantage that where the bread earner fails to work or dies, the family will still survive. Mushrooms have health benefits such as development and boosting the immune system of humans. According to FAO, mushrooms are richer in protein value (19-35%) compared to milk and contain all the essential amino acids. Mushroom growing starts to generate earnings within 14-21 days from the start and if planned well daily earnings can be made which makes it a practical alternative to fishing. Mushroom gardens are made of polythene bags as can be seen in figure 1.

It is estimated that each garden of mushrooms can yield an average of 1.5 kilograms of fresh mushrooms during the production cycle of about 3 months and the price can range from 3,000/= to 7,000/= per kilogram. This means that each garden can generate earnings ranging from 4,500/= to 10,500/= in the entire production cycle. An initial capital of about 400,000/= which is half way the cost of a single boat around Lake Edward, can buy 400 pieces of mushroom spawn (seeds) from National Agriculture Research Laboratories, Kawanda. The above seeds can make 400 gardens and result into better earnings compared to the one generated from fisheries activities as shown in Table 1. Where value addition such as making flour for mushroom porridge and mushroom sauce is carried out, earnings from mushroom products can even be higher.