

# Fish Farming: The Smallholder Information Needs in Kenya

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## Overview

Development of fisheries resources in the Kenyan economy is fundamentally important for generation of employment and as a cheap source of animal protein. The national fisheries resources consist of capture and culture fisheries whose performance breakdown shows that production potential of the marine subsector is estimated at about 260 000 t. Ninety-seven per cent of the freshwater fish production is from Lake Victoria. The country's fish farming potential is estimated at 50 000 t/year and involves mainly small-scale farmers.

Impediments to improving small-scale fish production include:

- use of unsuitable artisanal methods of harvesting;
- lack of appropriate technology; and
- application of inappropriate fishing methods that eventually lead to destruction of breeding grounds.

This situation points to lack of information. The fisheries sector, though important, lacks due recognition in terms of resource allocation compared to other key government development areas like crop and livestock husbandry. Assistance by various government agencies in providing timely information and guidelines on new fish farming technologies developed through research is equally necessary. Perhaps information commodity itself should be seen and recognized as one of the essential resources needed by the farmers to aid in their taking proper decisions and improve farming practices.

### Fisheries Information Systems

Provision of fisheries information entails:

1. Having information systems that encompass libraries, documen-

tation and information centers. They exist essentially to ensure availability of information when and where needed and supplied under optimal conditions of time, format and expenditure of resources. They have to meet four basic criteria of quality, timeliness, relevance and cost-benefit in their day-to-day service provision. There are many institutions providing information but in effect they are ivory towers to small-scale farmers, the majority of whom cannot read and understand what is written in English. These centers are also situated very far away from the practicing fish farmers. Otherwise, the centers provide information indirectly to small-scale farmers by actually serving those experts who by the end of the day make contact with the practitioners in their fields for purpose of advising them on what they should be doing to improve fish farming.

However, the fish farming sector in Kenya will continue to rely on the research findings from the Kenya Marine and Fisheries Training Institute to assist them directly in managing the existing and potential artisanal and commercial fisheries through the adoption and implementation of its research

findings. The Kenyan Government has seen it fit to provide training for both the fisheries staff and the fishers-cum-farmers. The government through the Fisheries Department continues to liaise with centers to cater to the training needs and facilitate skills transfer to fisheries staff, fish farmers and fishers alike.

2. Information gathering involves collecting and receiving information using any means. Information retrieval is part of information gathering concerned with the efficient selection of items of existing knowledge and information and its distribution for immediate use by the practitioner (fish farmer). The government, through the Fisheries Department and the Kenya Marine and Fisheries Training Institute, collaborates with the National Environment Secretariat, Water Department and various international agencies, namely, UNEP, IOC, FAO, universities, and the private sector in facilitating sharing and exchange of fisheries information. This would in essence ensure the prevention of pollution and terrestrial degradation which influences water quality and hence, adversely affects the quality of fish catch in lakes, rivers and ocean.

## Farmer Characteristics

It is clearly perceived that the success of small-scale farmers in their practices will depend on their adoption of scientific recommendations. According to the farmers, their answer to adoption of farm innovations is positive as long as those scientific recommendations do guarantee quality and high catch or farm harvest. However, farmers may not act on definite recommendations despite the advice readily available to them due to differing influences among themselves, as outlined below.

### Population

About 85% of the Kenyan population resides and work in the countryside, of which 75% constitute farmers and pastoralists. The Kenya Integrated Rural Survey undertaken in 1974/75 showed there were then 10 342 174 peasant holders with 5 083 389 and 5 258 785 males and females, respectively. Two things are quite apparent: a) continued increase of the rural population; and b) continued widening gap between male and female populations in the rural areas.

What has favored fish farming is the search for cheap protein food(s) for the ever growing poor population. Fortunately, fish has been identified as a major source of cheap protein and has become a major source of income and source of food security during drought periods.

Women are becoming increasingly in charge of households as men leave for urban centers to look for jobs. Women have become now managers and laborers of their own activities. Thus, targeting men alone for advice and provision of information tends to sideline women who form the majority and are the implementors of most of the small-scale farm activities.

### Sociocultural Factors

It is generally known that the rural groups with ages 30 and over

are the productive and independent farmholders. Unfortunately, they constitute those in the largest illiteracy level ranging from 54% among the males to 99% in females. This group is void of basic skills and is bound to tribal customs. For this group to take advice and adopt recommended technologies would require special approach and persuasion.

### Information Needs

Small-scale farmers are both managers and laborers of their own practices. They have objectives and decisions to make and follow. They therefore must be seen as decisionmakers in their own right within their own means, being goal oriented. Their actions depend on: adequate information; ability to control sufficient resources for action; the influence of others who provide a social environment which encourages or discourages a particular decision; and their impulse to act.

The fish farmers can also be described as risk-takers. They will need to avoid or minimize those risks through the provision of information that is timely, relevant, comprehensible and complete. As information seekers, they may not have time to take in information that is not immediately useful. The emphasis on such information should therefore be on the quality and sufficiency to influence their final decision.

To ensure quality of information for small-scale farmers the following should be understood:

### CONTENT

The information ought to be relevant, specific, simple, useful, complete and of high utility to the peasant farmer. It should also be timely. It must be problem centered and should offer explanation for "do-it-yourself" kind of information. It should include an examination of options to suit different farmers.

### FOLLOW UP

The information may require a follow up. An explanation to make it more easily understood is necessary. Involvement of the subject experts is needed for a more convincing answer and recommendations.

### Information Profiling

Fish farmers would require ready packaged information for their immediate use and application. It will not matter whether this information is acquired from experts as individuals or institutions or organizations as long as it is useful at the small-scale fish farming level. In most cases, advisory information and material with "do-it-yourself" approach are preferred to research reports and journal articles. Field days organized by research institutions and personnel for demonstration on how to go about solving problems are popular among small-scale farmers. Fish farmers will require information on: hatcheries, spawning, nursing and fish species; harvesting/postharvest processes; preservation; marketing; environment-temperature and salinity; pond fertilization; fish feeding; fish stock improvement and management; pond development; fish protection; water quality and effluents; programs and courses; information-sources and centers.

Note that libraries are not absolute in serving small-scale farmers despite their literacy levels. What is required of them (libraries and other information centers) is to redesign their services to suit the environment and indeed the user. One does not have to be a chameleon to easily adapt to the environmental surroundings. Information repackaging in libraries and information centers will make them user friendly among all categories of users including small-scale farmers.

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