



Stock assessment of the Lake Nasser fishery

Policy brief for better resource use



Executive summary

The decline in fish landings and the reduction in the marketing value of fish from Lake Nasser can be attributed to improper fishing practices and unsuitable fish handling. Such practices have a negative economic impact on fishstocks, fishers' income, employment opportunities and the human food supply. With the support of assorted stakeholders, the Youth Employment in Aswan Governorate: Extension of Fisheries and Aquaculture Interventions project conducted a stock assessment study over two years to identify the salient features of the Lake Nasser fishery to better use its resources. The study provides valuable and up-to-date scientific information regarding the best management tools for researchers, policymakers and managers to ensure sustainability, efficiency and improved production and outcomes from Lake Nasser.

Introduction

Although Egypt is the leading producer of farmed fish in Africa and the Middle East, its capture fisheries are not as productive. Catches from inland lakes decreased from 56,000 metric tons (t) in 2003 to 31,000 t by 2016, and the Lake Nasser catch decreased from about 41,000 t to less than 19,000 t over the same period. As a result, Egypt still imports over 311,000 t of fish per year and exports only about 48,000 t. Fishing on Lake Nasser is an important activity that supports the livelihoods of over 15,000 fishers. The lake's good water quality and rich nutrient salts produce freshwater fish that could fetch high prices. The lake's poor performance is therefore a major barrier to the desire to provide more fish and fish products to the Egyptian people. WorldFish undertook a stock assessment study to gather information and

data to develop a fishery management plan. The fishery sector in Lake Nasser faces many challenges that hamper the development of fish production and the economic and social benefits that derive from it.

Stock assessment study findings

Fish samples and data on fishing methods were collected from landing sites during monthly field trips and a bimonthly spatial survey of the fishing grounds along the lake. More than 250 interviews were conducted with fishers and more than 13,000 specimens (4500 kg combined) were collected from the economic fish species—Nile tilapia, mango tilapia, red belly tilapia, Nile perch, tiger fish and pebbly fish—to assess the lake's fishery, estimate the biological parameters of the important fish species and identify the obstacles facing fish production.

The study concluded that there are six dominant fish species: three tilapia species and one each for Nile perch, pebbly fish and tiger fish. Two main factors influence fish production in the lake: water level and fishing activities. The main issues affecting the development of the lake's fishery are (1) declining production because of poor commitment to/enforcement of fishing regulations and (2) decreased marketing value and revenue because fishers catch small fish. These two issues occur because:

- Use of illegal fishing gear and methods: although some illegal fishing methods were observed (e.g. electric fishing), legal fishing methods were seen being used to target species out of their fishing season, resulting in small fish being caught.

- Limited number of official landing sites: the catches of some boats were landed away from official landing sites, so there was no control over fish sizes and information about the catch was lost. This affects the quality of the data used to make management decisions.
- Poor postharvest handling practices: a series of incorrect handling and preservation practices were observed. These lead to a loss of fish and a decline in fish quality, which in turn reduce the marketing value of the catch.
- Support value added to catch adding value to the catch by reducing loss and waste and encouraging processing and the use of byproducts of fish with lower economic value.

For fisheries associations and cooperatives

Fisheries associations and cooperatives are important partners in lake management and should play a role in ensuring the sustainability of the fishery's value chain:

- Assist in developing a management plan and report to the responsible authority any activities with negative impacts on the lake's fishery.
- Purchase fishing inputs in bulk from suppliers to ensure affordability and quality for all members.
- Work with relevant organizations to provide health services around the lake and at fish landing sites.
- Work with relevant organizations to ensure all members are covered by health and social insurance.

Implications and recommendations

For government and administrative authorities

To ensure the sustainability of fishery activities in Lake Nasser, the government and administrative authorities should develop management strategies that take into consideration the profits of all stakeholders involved in the sector. All stakeholders should be involved in developing a management plan and contribute to its implementation. The responsibilities of government and administrative authorities should include:

- Strengthening extension services for fishers on the lake and developing an awareness campaign about the impact of illegal fishing on the catch value and fishers' communities.
- Ensuring the use of legal fishing gear as stated in existing legislation and regulations to allow only legal fish sizes to be caught in the proper season.
- In coordination with fisheries associations, implementing a closed season and/or an area for biological rest to give fish the time to grow and reproduce.
- Encouraging research organizations and universities to conduct research on fishstocks to monitor species and size composition for common fish populations.
- Providing fishers with health and social insurance and decent working conditions.

For donors

International donors can support the fishery by increasing the number of landing sites and providing the equipment necessary for the lake management authority to strengthen its role in surveillance.

These actions may include (1) strengthening the capacity of sector organizations, (2) consumer research, (3) business planning for investment in processing and distribution, (4) compliance with European Union (EU) sanitary conditions to improve food safety and facilitate access to the EU market, (5) a review of the trade regime and (6) investigation of trade-related intellectual property options.

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