



Tropentag 2016, Vienna, Austria, September 18-21, 2016
Conference on International Research on Food Security, Natural Resource
Management and Rural Development
organized by the University of Natural Resources and Life Sciences
(BOKU Vienna), Austria

Fish Production in Egypt: Current Status and Future Perspective

Ahmed Nabil Mohammed¹ and Sahar F. Mehanna²

¹ Cairo University, College of Agriculture

² National Institute of Oceanography and Fisheries (Sahar_mehanna@yahoo.com)

Introduction

Egypt drives its fish yield from three main resources; marine (Red and Mediterranean seas), inland (lakes and River Nile) and aquaculture. These fisheries are one of our chief sources of wealth. If we give them due care, we can increase our national income and solve many of our problems. Despite the improved fish production in Egypt ($\approx 1,500,000$ ton in 2014: 23% from capture fisheries and 77% from cultured fish), the increasing pressure from growing populations and the desire to increase per capita consumption of fish requires us to reorder priorities in order to achieve optimum exploitation of available fish resources. Egypt as the most of the world needs to focus on fisheries, as productive renewable food resources that can contribute to the development or increase national income as well as safe the food for coming generations.

Generally, Egyptian fish stocks from marine and inland waters have severely declined in recent years (Mehanna and El-Gammal, 2007; Mehanna, 2008, 2013&2015; Tesfamichael et al., 2012). The decline of the fisheries has stressed the need for efficient fisheries management. To develop the fisheries sector in present-day, Egypt's attention must be paid to the development of its natural fish resources through better conservation and management of marine and fresh-water resources. So, the objective of the present study is to address the main challenges faced the Egyptian fishery resources and how to overcome it.

MATERIAL AND METHODS

Fishery statistics during the period 1990-2014 were obtained from the fisheries offices of the General Authority for Fish Resources Development. Also, field trips were routinely done to

collect the biological samples and to interview the fishermen and skippers in the different landing sites along the Egyptian coasts (Fig. 1). These data were analyzed to estimate the catch per unit of fishing effort. Also, field trips and interviews were done to detect the most common challenges facing the capture and aquaculture industries in Egypt.



Fig. 1. Egypt map with the routine field work

RESULTS AND DISCUSSION

Fish production from Egypt

The main sources of fish production in Egypt include marine fisheries, inland fisheries (lakes, lagoons, the Nile River, irrigation and drainage canals), and aquaculture. Total production levels increased by more than 50% over the period 2000 to 2014 from 724,300 ton in 2000 to 1.48 million ton in 2014. The rise in production is due to the significant increases in aquaculture, where the aquaculture constituted up to 77% of the fish production in 2014.

In the last 40 years the picture of fish production in Egypt was completely differed. In 80's, the lakes were provided 50% of fish production decreased to only 12% in 2014, while the marine fisheries contribution was up to 22% in 80's decreased to only 8% in 2014. The Nile fisheries were dramatically decreased to provide only 4% of fish production in Egypt. In contrast, the aquaculture especially fresh water farms flourished and expanded to provide 77% of fish production in Egypt now a day (Fig. 2).

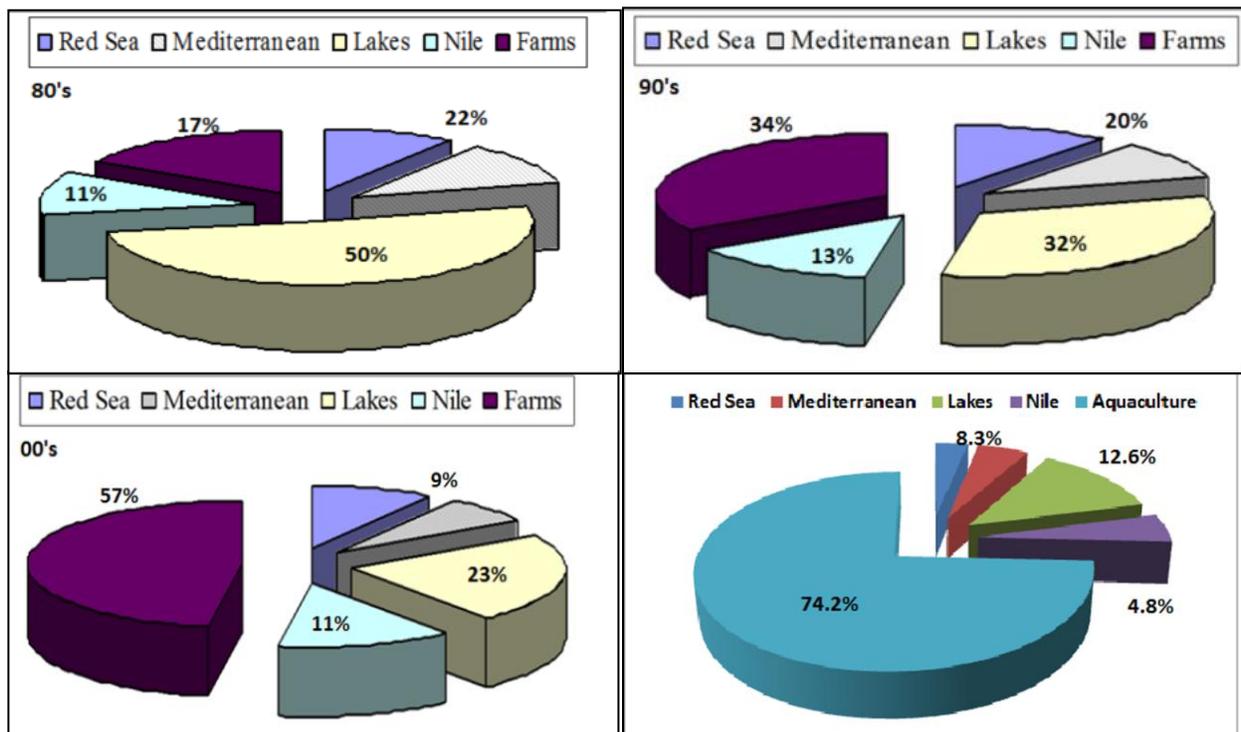


Fig. 2. Fish production from different resources in Egypt

Current challenges

Marine fisheries

- Over-exploitation due to the high fishing pressure where all studies revealed that the current fishing effort should be reduced from 35 – 50 of its current value (Mehanna and El-Gammal, 2007; Mehanna, 2009&2011) .
- Illegal size nets and destructive fishing methods, illegal harvesting of fish fry
- Increasing of tourism and industrial expansion which cause damages in coastal ecosystem and pollution
- Lack of information on fishery status in terms of biological, ecological, social and economic policy
- Lack of awareness about the importance of fisheries regulations

Inland fisheries

- Degradation, filling up and drought which lead to decreasing the lakes area
 - Severe pollution
- Spread of aquatic plants in many places in the lakes.
- Over-fishing, illegal fishing practices and illegal harvesting of fish fry
- The blockage of Boughazes
- Eutrophication
- The low awareness of fishermen about environmental issues and the importance of fisheries regulation measures.

Aquaculture

- the high prices of fish food
- Shortage in fish fry especially of marine origin
- Pollution
- Leasing period was very short (three years). This period non encouragement for investing in fish farming

Recommendations

Marine fisheries

- Regulation of mesh sizes, controlling gear types used and prohibition the destructive ones.

- Defining closed areas on the light of developing a geographical information system for the fishing grounds.
- Setting of a total allowable catch
- Revision of fisheries laws and improving the system for collecting and compiling fisheries statistics
- Examining the water inflow from the industrial activities to control polluted water inflow into the fishing grounds.
- Encourage the investment in mariculture
- Construction marine hatcheries to cover the excessive demand on fish fry and juveniles for aquaculture

Inland fisheries

- Stocking the lakes with sufficient and suitable fish fry species.
- Controlling and optimizing the water quality of the lakes.
- Regulation of mesh sizes, controlling gear types used and prohibition the destructive ones.
- Developing suitable fishing gear for shallow lakes as well as detecting the economic factors affecting the fishery.
- Monitoring salinities at various seasons and localities
- Continuous clearance of the openings for exchange of water masses between the lakes and the open sea.
- Revision of fisheries laws and improving the system for collecting and compiling fisheries statistics
- Examining the water inflow of the agricultural drainage canals and different drains into the lakes regularly to control polluted water inflow into the lakes.
- Restoring the natural status of the lakes by addressing the different drains problem to construct the sewage treatment plant.
- Construction marine hatcheries to cover the excessive demand on fish fry and juveniles for aquaculture.

Aquaculture

- Make a new map for all non-agricultural land and study the availability to use this land in farming fish.
- Re-use the municipal wastewater after treatment in fish farms

- Use the recent technology in fish farms and change the present traditional aquaculture techniques to the intensive or integrated culture
- Encourage the construction of hatcheries
- Encourage the investment in mari-culture

References

- Mehanna, S. F., 2008. Northern Delta Lakes, Egypt: constraints and challenges. Tropentag 2008, Hohenheim University, Germany, 7 – 9 October, 2008.
- Mehanna, S. F., 2009. Growth, Mortality and Spawning Stock Biomass of striped red mullet *Mullus surmuletus*, in the Egyptian Mediterranean waters. Med. Mar. Sci., 10 (2): 5-17.
- Mehanna, S. F., 2009. Growth, Mortality and Spawning Stock Biomass of red mullet *Mullus barbatus*, in the Egyptian Mediterranean waters. Tropentag 2009, Hamburg University, Germany, 6 – 8 October, 2009.
- Mehanna, S. F., 2011. Population dynamics and management of snubnose emperor *Lethrinus bungus* (*L. borbonicus*) from the Foul Bay, Red Sea. INOC-XI International Symposium 2011, Bogor, Indonesia: 121-129.
- Mehanna, S. F., 2011. Stock assessment of bogue *Boops boops* in the Egyptian Mediterranean waters. ICCAFF, 2011, Agadir, Morocco, 19-21 May, 2011.
- Mehanna, S. F., 2013. Sustainable development of Bardawil lagoon fisheries. First Regional Symposium on Sustainable Small-Scale Fisheries 27 – 30 November 2013, St. Julian's Malta.
- Mehanna, S.F., 2015. Egyptian Nile river fisheries assessment with special reference to tilapia fishery. Global Conference on Inland Fisheries, FAO, Rome, 26-28 January, 2015.
- Mehanna, S. F. and F. I. El-Gammal, 2007. Gulf of Suez fisheries: current status, assessment and management. J. King Abdulaziz University, Mar. Sci.,18: 3-18.
- Tesfamichael, D. and Mehanna, S.F. 2012. Red Sea fisheries of Egypt: Heavy investment and their consequences. In: Tesfamichael, D. and Pauly, D. (eds.) Catch reconstruction for the Red Sea large marine ecosystem by countries (950 – 2010). Fisheries Centre Research Reports, Vol. 20 (1), Vancouver.