# DETERMINING FACTORS OF FISH PRODUCTION IN EGYPT

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## ABSTRACT

The fish production in Egypt is failing to cover the increasing in consumption needs, so the research aims to determine the factors that influence fish production in Egypt during 1990-2016. We were able to identify key determinants of fish production; experimented by Simultaneous equations model (SEM). The estimate suggests that fish production is positively associated with fish consumption; fish production requirement costs; fishery cooperative associations; and fish stock. As well as, negatively associated with fish price and fishers. The current study enabled us to evaluate factors affecting fish production. Policymakers should have the interest to observe the outcomes and recommendations of this study for optimal policy planning.

***Keywords:*** *Fish production - Capture fisheries – Cultured fisheries - Fish consumption - Fish gap - Simultaneous equation- Fiscal policy*.

## 1. INTRODUCTION

Fish is considered as one of the most humanity secure food, which is enabled people for having food and earning their livelihoods (FAO, 2018). In 2016, the world fish production was 171 million tonnes amounted to 362 billion US dollars, represented 17% of the global consumed animal protein around the world and provided more than 59 million direct job and more than half-billion indirect job opportunities (Ibid; Soliman & Yacout,2016). However, during the period from 1961 to 2016, the average annual increase in the world fish consumption (3.3%) had exceeded the population growth ratio (1.6%) and world consumption from terrestrial animal meats combined (2.8%) (FAO, 2018). Due to fish meat contains 20-30% of animal protein in combination (Khalil & El-Ghnini,2014) and represents 80% of its weight, while this ratio is close to 65% in poultry and 54% in livestock, in addition, the quantity of feed and time to produce one kilogram from fish meat are less than their counterparts in red meat and poultry, furthermore, fish prices are cheaper than other animal protein prices (Mohammed & Mehanna,2016), a number of studies have been confirmed on the importance of fish sector as one of the best effective solutions and relatively less expensive economic alternatives to reduce the food gap and providing more jobs (Aloyce, et all,2007; Belton & Thilsted,2014; Eltholth,2015; Ali, et all,2016; Dickson,2016; Karatas & Karatas,2017; Alawode & Oluwatayo,2019).

Fishing and aquaculture had been one of the most important activities in Egyptian ancient civilization. Early Egyptian stones and papyrus reliefs (3000 B.C.) illustrated fishers bring fish, fishing tools such as reed boats, woven nets, weir baskets and harpoons as well as, harvest tilapia from ponds (FAO,2003; Arnason,2010). Recently, fish sector in Egypt generates 9.4% of the Egyptian net agriculture income (CAPMAS, 2018), supplies 5% of total protein intake (FAO, 2019) and 25.3% of the total animal protein which consumed by households and provides 816000 job opportunities (World fish, 2019). Egypt has more than 13 million acres valid for fishing and 900 thousand acres are subject to aquaculture, the capture fisheries ones represent in marine fisheries (Mediterranean 6.8 million acres with 1000 kilometres length and Red seas 4.4 million acres with 1000 kilometres length) and inland fisheries (thirteen lakes and lagoons 1.8 million acres and the Nile River, Irrigation and Drainage Canals 208 thousand acres) (CAPMAS,2018; Kadous,2015) and the cultured ones represent in fish farms by extensive, intensive and semi-intensive culture (320797 acres), fish cages and agriculture fish in rice fields (568460 acres) (AOAD,2017). It has classified at 2016 the sixth country that has the largest cultured fish production around the world (1.7% of the world production) (the first one in Africa, Arab countries and the Middle East and exceeds all of North America, Latin America, and Europe countries) also, the sixteenth country that has the largest capture fish production from inland water (2% of the world production) (FAO, 2018).