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“Can agroecological farming feed the world?  
Farmers’ and academia’s views”

## Population dynamics and fisheries management of the round sardinella, *Sardinella aurita* in GSA 26, Egypt

SAHAR MEHANNA

*National Institute of Oceanography and Fisheries (NIOF), Fish Population Dynamics, Egypt*

### Abstract

Fisheries sector is playing a significant role in the national economy, human development and welfare, such as in terms of providing employment, production and trade. Fisheries resources in Egypt are providing a cheap animal protein and contribute greatly in the food security of the country. The round sardinella, *Sardinella aurita*, is one of the most important fish species in the Egyptian sector of the Mediterranean Sea contributing up to 33 % of the total fish production from Egyptian Mediterranean. Sardine constitutes the major component of the purse-seine catch in the Egyptian Mediterranean. Sardine catch is composed mainly of *Sardinella aurita*, *S. maderensis*, *Sardina pilchardus* and *Dussumieria acuta* from which the *S. aurita* is the most abundant species. The population dynamics and assessing the sardine stock were undertaken based on monthly samples collected between January 2019 and January 2021 from the fishing harbor at Port Said city. Age and growth studies based on sagittal otoliths revealed that this species has a maximum lifespan of four years and the age group I was the most frequent one in the catch where it constitutes about 55 %. Growth parameters of the von Bertalanffy growth model, estimates of total, natural and fishing mortality were estimated. Exploitation ratio was more than the optimum one as well as the length at first capture was smaller than the length at first sexual maturity indicating that this stock is suffering from the high level of exploitation. The high values of fishing mortality and exploitation ratio indicated that this species was harvested at a higher level than the optimum fishing mortality and this fishing pressure should be reduced to obtain MSY. The yield per recruit analysis suggested that the *S. aurita* stock in the Port Said region needs regulatory measurements to achieve its sustainable development. Also the fishing gears used need to re-evaluate and to improve to catch the larger fish.

**Keywords:** Egypt, management, population parameters, round sardine, stock assessment