

# RECONSTRUCTION OF SYRIA FISHERIES CATCHES FROM 1950-2010: SIGNS OF OVEREXPLOITATION

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## Abstract

The quality of evaluations is therefore dependent upon the quality of the member country data, and by extension their national data collection and reporting systems. Syria's marine fisheries catch data are assembled from market assessment (i.e., the sales of commercial catches) from a subset of fish markets, therefore neglecting to account for non-commercial landings, direct marketing and sales by-passing major markets, and discards. The goal of the present study was to provide comprehensive estimates of total Syrian marine fishery catches for 1950-2010 by fishing sectors (industrial, artisanal, subsistence, recreational) and major discards, using a catch reconstruction approach.

*Keywords: Fisheries, Time series, Trawl surveys, Economic valuation, South-Eastern Mediterranean*

## Introduction

Fisheries have been providing coastal populations with nutritional resources for millennia; however, with the onset of industrialization in the last century, these resources have generally been exploited faster than they can regenerate [1]. Global fish catches increased throughout the 1960s and 1970s, mostly due to increased sophistication of fishing vessels and global spatial expansion [2], peaked around 1990 [3], and thereafter were thought to 'stabilize' [4]. It is important for countries to understand the history of their fisheries resource exploitation, to provide a baseline for understanding the future potential of these resources. The Syrian Arab Republic, here referred to as 'Syria', became a charter member of the United Nations in 1945 and achieved independence from France in 1946. Syria's population, which was 3.5 million in 1950, increased to 21 million by 2010, the majority of which lives in a narrow strip of land between the Mediterranean Sea and the coastal mountain range. The coastline is interspersed with cities, towns and villages, all within 5-10 km of each other [5]. The population density is thus highest along the coast, with 405 people•km<sup>-2</sup> in Latakia and 370 people•km<sup>-2</sup> in Tartous [6].

Syria borders the Levantine Basin of the eastern Mediterranean Sea, which extends from southern Turkey to Egypt. The continental shelf is narrow (1-10 nautical miles wide) and measures approximately 960 km<sup>2</sup> (www.seaaroundus.org), while Syria's Exclusive Economic Zone (EEZ) measures approximately 10,000 km<sup>2</sup> (www.seaaroundus.org). Fisheries catches in the eastern Mediterranean are much lower than the western Mediterranean due to lower nutrient availability and the absence of a mixing mechanism such as upwelling. The Nile River had traditionally been the main source of nutrient input into the eastern Mediterranean, but since the construction, in 1970, of the Aswan Dam in Egypt, only a fraction of the previous nutrient-rich discharge reaches the Mediterranean. Hence, pelagic catches in Syria were noticeably reduced from the late 1960s onwards due to the Aswan Dam completion [7].

## Materials and Methods

All fishing sectors were assessed from 1950 to 2010, which includes the industrial (large-scale commercial), artisanal (small-scale commercial), recreational (small-scale non-commercial), and subsistence (small-scale non-commercial) sectors, as well as major discards. We conducted an extensive review of all published literature, grey literature and unpublished data from local experts to obtain a first comprehensive assessment for total Syrian fisheries catches (i.e., landings + discards) from 1950 to 2010. The total reconstructed data, by taxa, are then compared to the data reported by FAO, on behalf of Syria.

## Results

The total reconstructed catch for the 1950-2010 time period (inclusive of reported data) is nearly 170,000 t, which is 78% more than the amount reported to the FAO. Importantly, by 2010, actual total catches are over 2 times higher than reported data suggest. The reconstruction added over 74,000 t of unreported catches, consisting of 38,600 t of previously unreported artisanal landings, over 16,000 t of unreported industrial

landings, over 4,000 t of recreational catches, over 3,000 t of subsistence catches and around 12,000 t of discards. Syrian fisheries are dominated by the artisanal sector (accounting for 67% of total catches), while the industrial, recreational and subsistence catches account for 29%, 3% and 2%, respectively. Discards accounted for 7% of total catches.

## Conclusion

Our reconstructed catch estimate for Syria's marine fisheries provides a first comprehensive account of likely total fishery removals by Syria for 1950-2010. This study also supports other observations that the state of the fisheries is indeed declining due to overexploitation, as suggested by the observed increase in fishing effort, declining CPUE and the amount of juvenile fish in the catches. More efficient management measures are urgently needed, to ensure Syrians can benefit more from their local fisheries now and into the future.

## References

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