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UPDATED STATE OF SMALL SCALE FISHERIES ON THE ROMANIAN BLACK SEA AREA

Cristian Sorin Danilov*, George Țiganov, Cătălin Păun, Dragoș Diaconu, Daniel Grigoraș

National Institute for Marine Research and Development "Grigore Antipa" Constanța, 300 Mamaia Blvd., 900581, Constanta, Romania
**Corresponding author: cdanilov@alpha.rmri.ro*

ABSTRACT

Romanian small-scale fisheries are practiced along the Black Sea coast in five fishing ports (Sulina, Cape Midia, Tomis, Constanta and Mangalia) and 18 other small fishing stations, located between Sulina - Vama Veche, at depths ranging between 2 - 20 m and sometimes up to 50 m, when practicing specialized turbot fisheries. Of significant importance is fishing with divers for the *Rapana venosa*, the species with the greatest impact on the landed catches. In the coastal area, between Vama Veche and Sulina, which also represents an important area for the reproduction, feeding and rearing of some important fish species, the small-scale fishing is practiced with fixed and active gear, throughout the year, mainly using the following types of fishing gears: pound nets, gillnets, longlines, beach seines, cages/traps, handlines and from 2013 with beam trawl. Catch and fishery productivity vary yearly, depending on environmental conditions, fishing effort, status of main commercial species, and human factors. During the analyzed period (2019 - 2023), catches in shallow waters were between 7149 and 3127 tons, which has an increasing trend compared to the previous period (2012 – 2017).

Keywords: small scale fisheries, landed catches, Romanian Black Sea area

INTRODUCTION

In recent years, small-scale fishers from the Mediterranean and Black Sea region highlighted an array of important challenges they face which included: climate change impacts such as rising sea temperatures and an increase in non-indigenous species, marine pollution, competition with industrial and recreational fisheries, the need for infrastructure that is appropriate for small- scale fisheries, the need to improve working conditions (including for women fishers), the need to ensure economic viability of the sector through vibrant and fair value chains, as well as a lack of generational turnover in the industry (SSF, 2022).

In Romania, fisheries are the responsibility of the Ministry of Agriculture and Rural Development, subordination with the National Agency for Fisheries and Aquaculture, which implements the specific legislation for fisheries, as well as for the aquaculture sector. The Agency is on the way to finalize the contract for a new information system and centralized database of the agency, to collect data on marine species, landings, register of fishing vessels, and socio-economic data. The data will be available for each fishing vessel and enable assessment of the status in marine fisheries. It is the aim of this database to be used for the improvement of adopting measures for sustainable development and for the CFP implementation.

MATERIALS AND METHODS

The data contained in this paper were analyzed from the Annual Economic Report on the EU Fishing Fleet (STECF) and the Annual Report on data collection in the fisheries and aquaculture sectors (NDCP). These data present the situation in the fishing sector and the trends in the development of this sector in Romania. The program results will contribute to the implementation of strategic objectives for the development of sectoral policies by Romania's National Strategy in the Fisheries Sector and the implementation of the new EU Common Fisheries Policy.

The techniques and methodology used for data collection, verification, processing and analysis and for the assessment of fish stocks are those generally accepted for the Black Sea basin, and by international methodology. The quantitative and qualitative composition of the fish catches was obtained from the fishing statistics obtained by centralizing, overtime periods, the data obtained from the commercial companies in the field that operate on the Romanian coast.

RESULTS AND DISCUSSION

The Romanian fishing fleet is operating in the area of competence of the Regional Fisheries Management Organisations - GFCM, Area 37 - Mediterranean and Black Sea, Subarea 37.4., Division 37.4.2, GSA 29. Sea fishing is conducted along the Romanian coastline and is limited to the marine waters areas up to 60-70 meter isobaths, exclusively in the EEZ. Romanian fleet operates up to 30-35 marine miles out of shore. Fishing activity is seasonal because of the strict dependence on climate conditions and implicitly on the presence of living aquatic resources in the area.

In the area of the Romanian marine sector, fishing is practiced with fixed and active gear, being focused by concentrating the activity on the periods, when usually species with economic value such as turbot, shad, horse mackerel, bluefish, etc. migrate to the coastal area for feeding and reproduction. Marine fishing on the Romanian coast is mainly practiced with stationary fishing, in shallow coastal areas, using fixed gear such as gillnets, longlines, and nets/traps, but since 2013 the LOA (overall length) category of vessels between 6-12 m practiced active fishing using boat trawls and pelagic trawls (Țiganov *et al.,* 2018). The fish caught is mainly landed in the 4 ports (Sulina, Capul Midia, Constanța and Mangalia) and in 18 other collection and first sale stations along the Romanian coast. The fishing activity is carried out at depths between 1-30 m and occasionally more than 50 m, when the target species is turbot (Fig. 1).

Between 2019 and 2023, a total number of between 130 - 143 licensed active vessels/year were reported in small-scale coastal fishing in Romania, of which 8 - 12% were boats smaller than 0 - 6 m and 87 - 91% boats 6 - 12 m long The number of ships tended to remain constant, close to 105 - 119 ships peryear (Fig. 2). Most of these boats are equipped with engines (56 - 69%).

Regarding the distribution of fishing boats in the last four years, the most active port is Cape Midia with 27.8957 of the total number of fishing boats, followed by Mangalia with 18.38%, Constanta with 14.34%, Agigea with 8.64%, Sulina with 7.72%,

Costinesti with 7.54%, Vama Veche with 4.96%, Olimp with 4.41%, Gura Portitei with 4.04% and Vadu with 2.39 (Fig. 3).

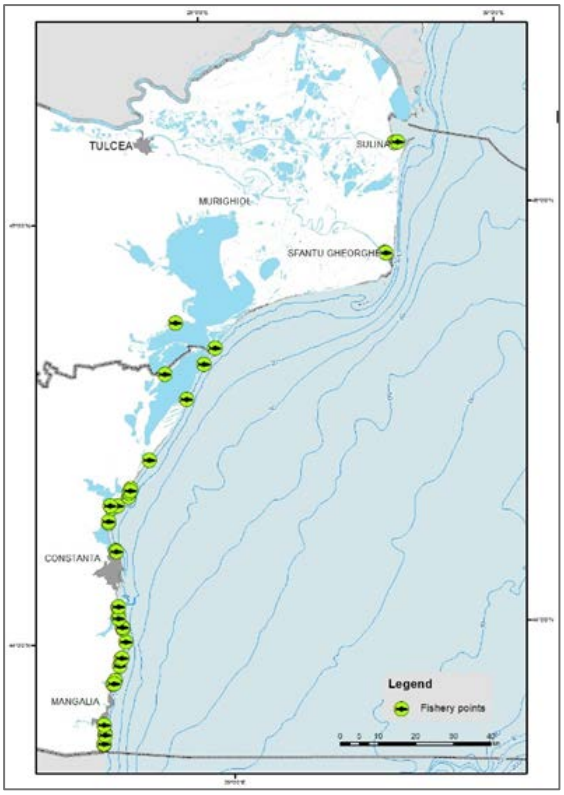

Fig. 1. Fishery ports and other collection and first sale (original map NIMRD)

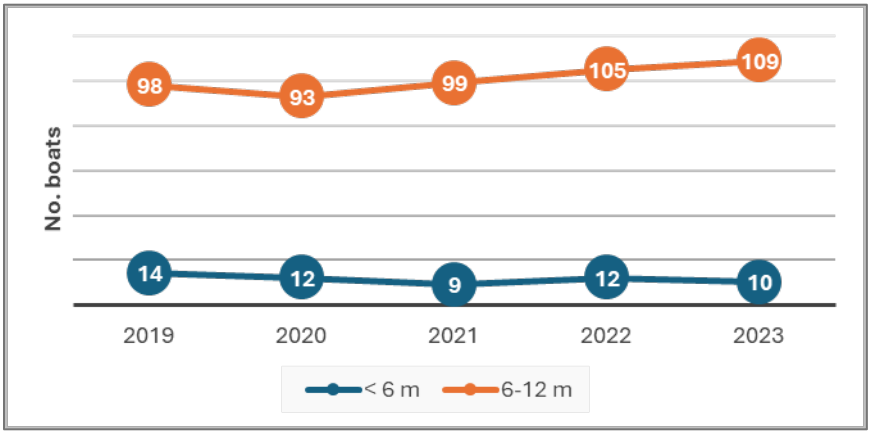

Fig. 2. Number of fishing boats used during 2019-2023 (NIMRD data)

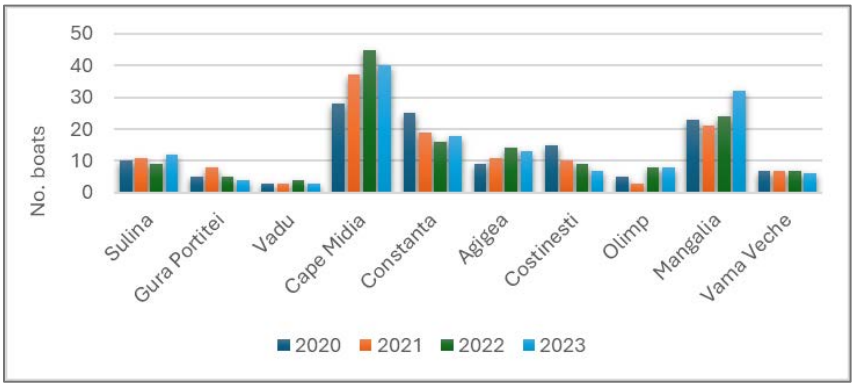

Fig. 3. Distribution of fishing boats at the Romanian coast during 2020 – 2023 (NAFA data)

Small-scale fishing on the Romanian coast uses the following types of fishing gear: beach seine, stationary uncovered pound net, gillnets, longline, cages/traps, beam trawl. hand lines, and pelagic trawlers (Maximov *et al*., 2010a; Maximov *et al*., 2010b; Maximov *et al*., 2011; Țiganov *et al*., 2018). The fishing gear used in the period 2019 - 2023 varied from one year to another. The number of pound nets varied between 30/2023 and 35/2022, while the gillnets for turbot varied between 1839/2020 and 2421/2023 and the gillnets for those used by coastal fishermen to capture small species varied between 384/2022 and 415/2020. The number of beam trawls varied between 14/2023 and 20/2020, the number of longlines varied between 8/2021 and 119/2023, the number of pots varied between 805/2020 and 2421/2023 and the number of pelagic trawlers varied between 4/2020 and 7/2022 (Fig. 4).

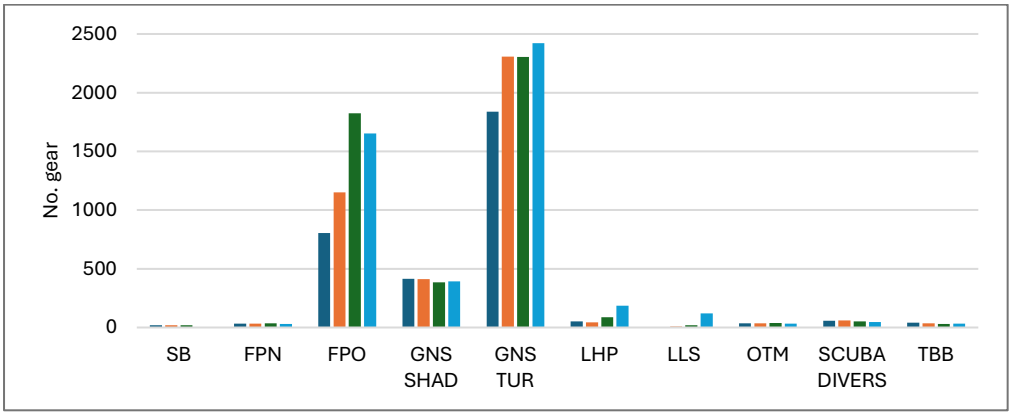

Fig.4. Type and number of fishing gears used during 2020 -2023 (NAFA data)

The main fishing gear used in small-scale fishing is gillnets, targeting pelagic and demersal species. The largest number is led by turbot gillnets, over 80% of the total gillnest, followed by over 15% shad gillnets and other species like (horse mackerel, goby, bluefish, Azov flounder).

The total catches on the Romanian coast had a major downward trend, during the year 2021, when they decreased by more than 4,000 tons compared to 2019, when a catch of approximately 7,150 tons was achieved. In recent years, the total catches had a tendency the easy growth, respectively 7149 tons, in 2019, 4462 tons, in 2020, 3127 tons in 2021, 3175 tons in 2022, respectively 3295 tons in 2023) officially registered (Fig. 5).

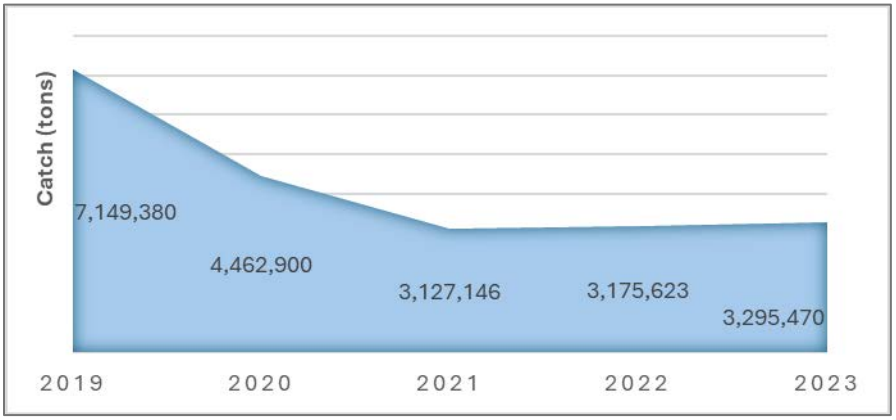

Fig. 5. Catch dynamics evolution in small-scale coastal fisheries (NIMRD data)

The decrease in catches in recent years was not due to the fish fauna, but due to the lowering the economic operators, and harvesting with beam trawl and manual *Rapana venosa*, which represented approximately 95% of the total catches in 2019, falling to 92% in 2020, 87% in 2021, 47% in 2022 and 50% in 2023. Also, the catches from small-scale fishing in the analyzed period recorded a percentage of 59 - 67% of the total catches in the period 2019 - 2023 (Fig. 6).

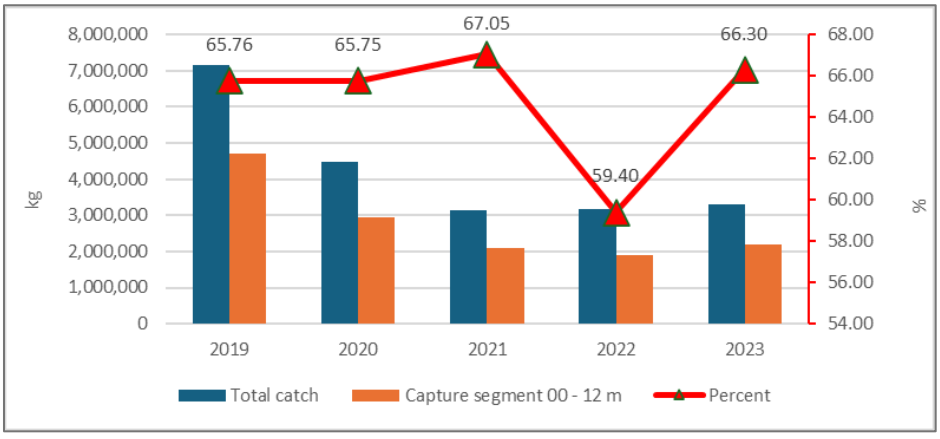

Fig. 6. Catch segment 0 - 6 m and 6 - 12 m compared to the total catch from 2019 – 2023 (NAFA data)

The diversity of the fish population structure indicates, as in previous years, the presence in catches of a large number of species (25 in number), in which small species predominate (sprat, anchovy, whiting, gobies), as well as the largest (turbot and Danube shad). The low share of some species, such as dogfish, horse mackerel, mullet, and bluefish, but also the appearance as isolated specimens of brown meager, Black Sea trout, tub gurnard, European seabass, shi drum have been reported. The main species in the catches of 2019 were: rapa whelk (1243 tons); anchovies (68 tons), mussel (116 tons); black horse mackerel (23 tons), turbot (39 tons); Danube shad (4 tons) and red mullet (1 tons) (Fig. 7). The main catches are obtained with trawls, pound nets and gillnets.

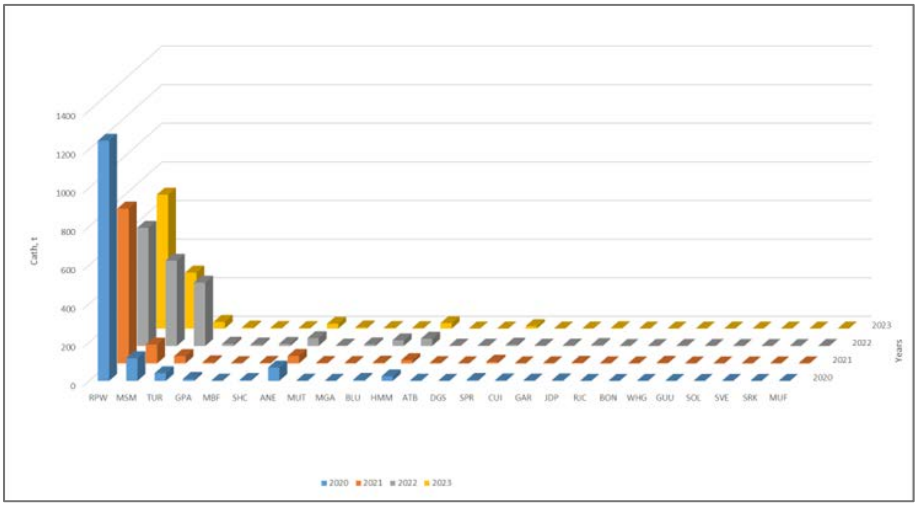

Fig. 7. Total catches and structure on species at the Romanian coast, during 2019 – 2023 (NIMRD data)

CONCLUSIONS

In the last five years, small-scale fishing in Romania was considered to be in decline, because in the last 10 years *Rapana venosa* constituted a percentage over 50% of the total annual catch, and the fish catches still have low values.

Small-scale fishing involves the use of several types of tools throughout the year because fishing is carried out seasonally depending on the targeted species.

This paper updates the state of the fishing sector on the Romanian coast of the Black Sea for the last five years.

Fishing is one of the sectors most affected by the changes in the Black Sea ecosystem. It is imperative to implement a special policy to preserve and improve the situation of fisheries resources and to ensure that the fisheries sector is adapted to the Black Sea basin.

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