

The coastal fishery of croaker (*Micropogonias furnieri*) in Uruguay and the assignment of user rights

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Abstract

Croaker (*Micropogonias furnieri*) is a resource that is present in the waters of the South-West Atlantic and is managed (in the common fishing zone) jointly between Argentina and Uruguay by the Comisión Técnica Mixta del Frente Marítimo or Joint Technical Commission for the Maritime Front (of the Treaty of the Rio de la Plata) (CTMFM). This commission fixes the Total Allowable Catch (TAC) every year. This case study explores the way in which Uruguay assigns the user rights of the different types of fisheries, with emphasis on small-scale fisheries, which are very important from a social point of view. In Uruguay, there are two fisheries exploiting the croaker resource: the industrial fisheries and the small-scale fisheries. The industrial fisheries have 33 vessels operating bottom and twin trawls, and the small-scale sector operates approximately 363 boats (of the 418 that fish in the area) which target the croaker resource either full time or occasionally. In the past, the interaction between the two fleets has occasionally been troublesome despite the prohibition of entry of the industrial trawler fleet in the five miles coastal area reserved for the small-scale fisheries. About 10 years ago, the industrial fleet was obliged to install a Vessel Monitoring Systems (VMS) ending, almost completely, the conflicts between the two fleets. The two fleets have restrictions on their operation. For the industrial fleet, these restrictions include assigned fishing zones, spatial and temporary fishing bans, minimum mesh sizes, minimum size of landings, and fishing (assigned to each country) quota; VMS. For the small-scale fisheries, they include assigned fishing areas, minimum size, and temporary prohibition of work less than 300 metres from the coast. The relevant legislations aim to give sustainability to the resource, maintain a balance in the equity of access to resources for all users, and reduce conflicts within and outside each fishery, which includes protected areas, fishing and water sports among others.

Keywords: Uruguay, croaker; Small-scale fisheries

1. INTRODUCTION

The croaker fishery (*Micropogonia furnieri*) is one of the most important fisheries in the coastal area of the South-West Atlantic. It takes place mainly in the FAO area 41 sub-areas 2.2 and 2.3 (Figure 1). Three countries participate in these fisheries: Argentina, Brazil and Uruguay.

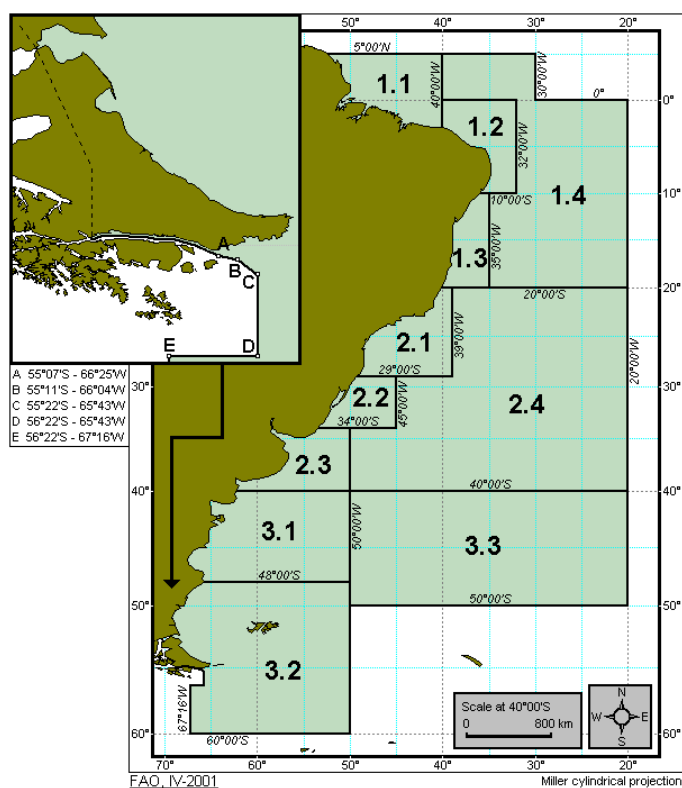


Figure 1. The coastal fisheries of croaker take place in FAO area 41, Sub-areas 2.2 and 2.3.

Source: https://www.researchgate.net/figure/FAO-major-fishing-area-41-and-subareas_fig5_333456311.

For Uruguay, croaker is a resource of vital importance. In recent years, it was either the first or the second species among all the landings. Three groups of fishers exploit this resource: the industrial, the small-scale and the sport fisher. These groups interact and compete with each other for the same resource, thus occasionally generating tension and conflict over the resource, but also over the use of the aquatic and land areas. Currently, the Administration is working on updated regulations, which aim to provide user rights for different types of fisheries.

Commercial fishing in Uruguay is categorized according to the target species and the type of vessel. There are five basic categories:

- Category A: Vessels whose target species are hake and its bycatch. These vessels do not operate in the Río de la Plata and do not catch coastal species.
- Category B: Vessels whose target species are the croaker and whiting and its bycatch. These vessels may not disembark species that make up the bycatch of hake.
- Category C: Vessels engaged in non-traditional fisheries, i.e. those whose target species are other than hake, croaker and whiting.
- Category D: Vessels exclusively enabled to operate outside the territorial waters of Uruguay and the common fishing zone established in the Treaty of the Rio de la Plata: small-scale vessels with the Gross Registered Tonnage (GRT) not exceeding ten tonnes.

ZONAS AUTORIZADAS PARA PESCA ARTESANAL

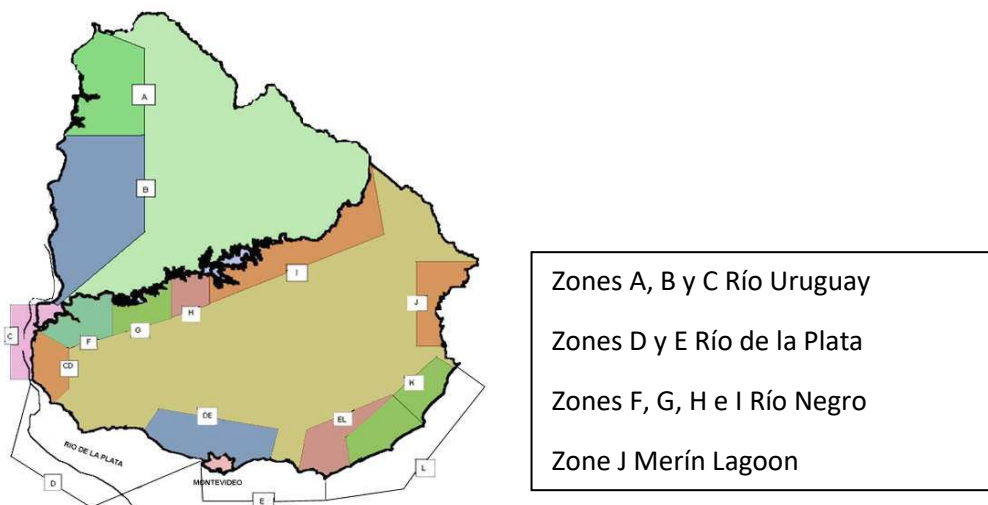


Figure 2. Small-scale Fisheries Zones (the Small scale fisheries in the country is divided into 12 zones and 3 sub-zones).

Source: <http://noticiasrocha.com/economia/prohibida-la-pesca-con-redes-de-enmalle-en-rios-y-arroyos-del-pais/>.

1.1 Description of the fishery

In Uruguay, the croaker fishery is a coastal activity and develops in the Río de la Plata and the coastal area of the Atlantic (Figure 3). At certain times of the year, this fishery can be considered a multispecies fishery, but the main target species remains the croaker.

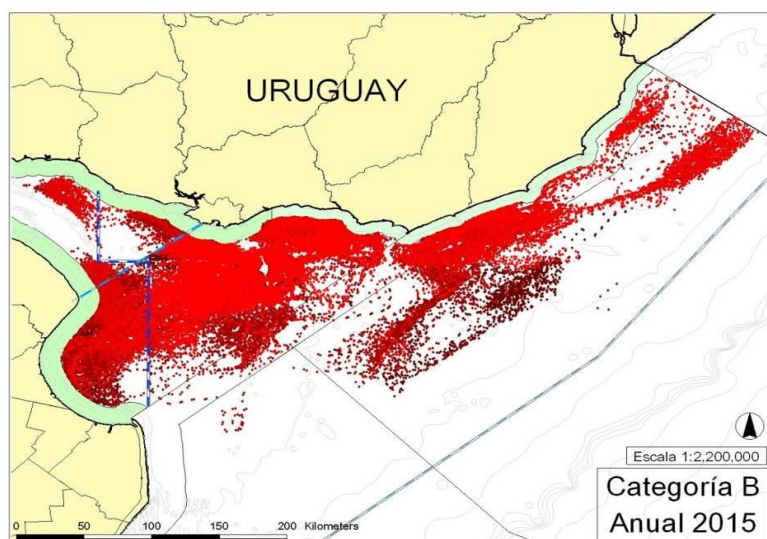


Figure 3. Small-scale Fisheries Area (in green) and Industrial Trawling (Category B, in red).

This fishery is developed on the coast (up to 50 meters deep), with the most common attendant species are being Stripped weakfish (*Cynoscion guatucupa*), king weakfish (*Macrodon ancylodon*), Brazilian

codling (*Urophycis brasiliensis*), Parona leatherjacket (*Parona signata*), narrownose smooth-hound (*Mustelus schmitti*) and Brazilian menhaden (*Brevoortia aurea*). Ports and communities in the areas where the fishery takes place differ depending on the nature of the fishing (industrial or small-scale). For the industrial fleet, the most important port of operations is Montevideo. The small-scale fisheries develop from a series of ports and beaches along the coast (Figure 4).

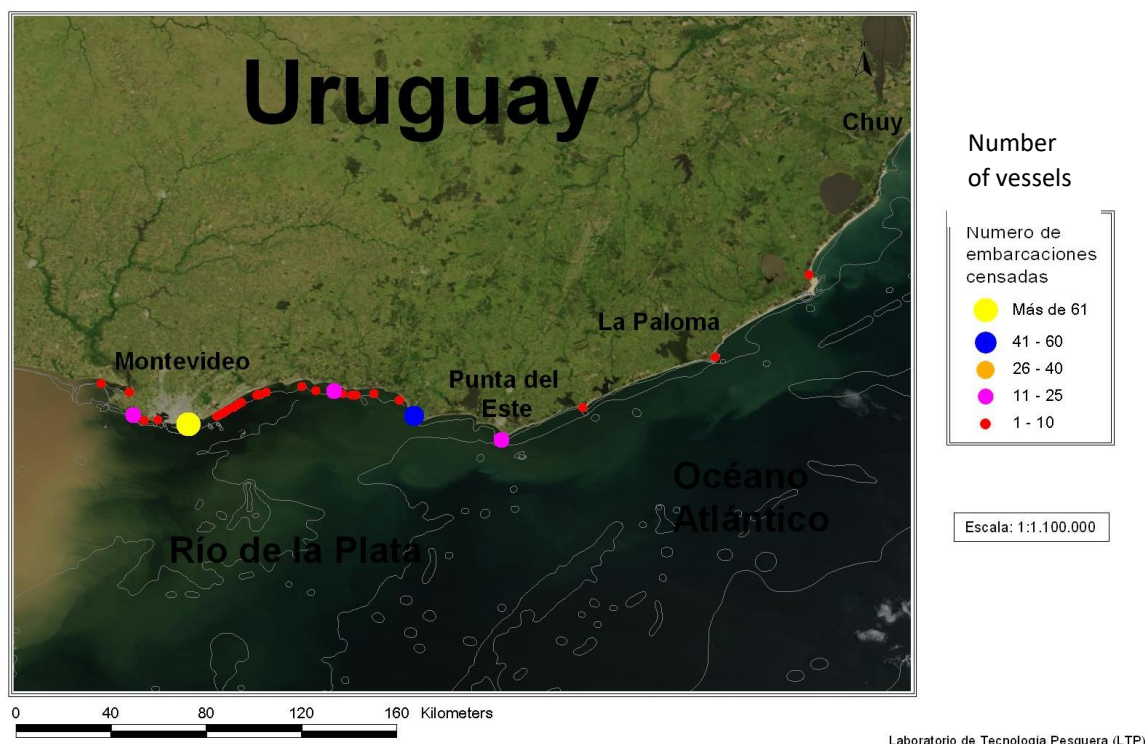


Figure 4. Ports and landing sites, of small-scale and industrial croaker fisheries.

The coastal industrial fleet consists of 33 vessels, employing some 330 crew members whose main target species is croaker. This fleet consists mainly of twin trawlers, which are 23 meters of length and employ ten crew members. The landing of croaker by the industrial fleet were 13 441 tonnes in 2015.

The small-scale croaker fisheries operate in three zones (D, E, L of fig. 2). Some 363 boats are involved, which provides employment for 1 062 crew members. The boats use gillnets and longlines. They are between 5-10 meters in length, have a GRT of 1-10, and outboard motors of 15-100 HP. The catch was 4 160 tonnes in 2015. No estimates exist on the production by the sports fisheries, but at times it can be both important and a source of conflict.

1.2 Economic contribution and social implications of the fishing activity

Of the entire coastal fisheries, both industrial and small-scale, more than 90 percent of the catches are exported. Brazil, Nigeria, China, the European Union, and Colombia represent the major export markets. From an economic point of view, the industrial croaker fisheries are more important than the small-scale fisheries, as the former produces about three times the volume of the latter. However, the situation is reversed with regard to the social importance, with small-scale fishing activity creating more employment.

2. MANAGEMENT OF THE FISHERY AND RIGHTS-BASED APPROACH

The fishery is subject to a double jurisdiction, first to the CTMFM, and second to the central Governments of each country in their exclusive zones, which can establish areas and fishing gears for each of the different modalities. CTMFM fixes annual TACs based on joint assessments of the two countries. In Uruguay, all fisheries are managed with legally recognized rights of fishing.

2.1 Management of the fishery

In the following section, the specific case of the exclusive fishing zone of Uruguay is described. In this exclusive zone, Uruguay has banned trawling in the 5 miles area from the coast, reserving this area for fishing gear used by the small-scale fleet. Uruguay also prohibits the small-scale fisheries from fishing less than 300 metres from the coast during the tourist season in order to prevent conflicts with this economic segment.

An important milestone in the management of fisheries was provided in law Nº 19.175 of 2013, which created a non-binding, a National Advisory Council for Fisheries and 12 Zonal Advisory Councils for small-scale fisheries zones (see Figure 2). The latter was created with the intention to involve fishers in the management through a participatory process. This institutionalization of participation allows all stakeholders, such as businessmen, fishers, maritime authority and administration, to have a say in the decision-making process. The Fisheries Council consults with the stakeholders, problems are identified, and solutions are sought, but the last word always rests with the administration.

Management measures are diverse and include:

- Total Allowable Catch (TAC)
- Regulations on fishing gear
- minimum sizes for landings
- restrictions on fishing effort
- spatial and temporal fishing bans
- restricted areas for fishing

Similar to all other commercial fisheries, the croaker fishery has legally recognized rights of fishing. A permit of fishing (license) granted by the national administration is mandatory to practice commercial fishing. For the industrial fishing (vessels of more than 10 GRT), permissions have a cost that depends primarily on the species that are being exploited and the capacity of the vessel. For the small-scale category fishing, permits are free.

All legal documents of the boat and the crew have to be presented before each trip. Further control is carried out at all point of the value chain: patrol boats and VMS systems are in place to control the activity at sea; sworn statement of catches is required during landing and post-harvest; documentation is required during transport and reception at fish processing plants; another sampling of catches are also carried out at various points in the chain.

2.2 Brief history of former rights-based approaches used in the fishery

Historically, the management system has always been the same; there have always been legally recognized fishing rights. What has changed are TACs, no entry of new fishing units, regulation of the fishing gear and implementation of closed areas. For industrial fishing, legally recognized rights are granted through a fishing permit, valid for five years, which specifies the boat and name of the owner as well as the category defined by the fishing methods and species or group of species.

The small-scale fishing permit is also valid for five years and contains the same indications as the industrial permit with the addition of the DINARA zone (Figure 2). The fishing permit, since the law Nº 19.175 of 2013, cannot be traded. According to article 36, sales involving fishing permits are prohibited. The transfer of the fishing permit is only allowed by inheritance. There are no restrictions to access by gender, age, religion, etc. An assignment of rights is made to fishers historically involved in the activity whenever the fishery supports an increase in effort.

With respect to industrial fishing, no new licences are given, as the catch is already at the maximum permitted yield. For the industrial fleet, the degree of non-compliance to current regulations is low or very low. In the small-scale fleet, there is slightly more non-compliance, the most common cases being fishing without license or fishing outside area, but overall, it does not represent a serious problem.

There are no specific instruments for conflict resolution. The only mechanism is through complaints to the authorities (fishing or maritime) or to the judicial system. However, in recent years, the creation of fishing councils has provided an authority to deal with potential problems and come up with possible solutions.

2.3 Rights-based approach: allocation and characteristics

The granting of fishing permits in the areas covered by the Treaty is the responsibility of each State. In Uruguay, the law Nº 19.175 of 20 December 2013 (Responsible Fisheries and Aquaculture Development Act) and in Argentina the law Nº 24.922 (Federal Fishing Regime) of 9 December 1997, set out the requirements for access permissions or access rights to fishing.

To obtain a fishing permit, interested parties, natural persons or legal residents in the country –without existing restrictions on communities or on gender, must submit a project that demonstrates their biological, environmental and socio-economic sustainability. The permission granted is tied to the vessel for which it is requested.

In the case of Argentina, vessels are merely granted permission to access the fishery; they are also assigned a catch quota or authorization of capture in the event that the species is not under quota. Permission may only be transferred to another unit or units of equivalent capacity (i.e. not involving an increase in fishing effort). The replacement can be done, if it becomes necessary due to an accident, force majeure or when a vessel needs to be replaced given its age, always depending on the agreement of the enforcement authority.

The permissions granted in Uruguay include the target species to which the fishing can be directed, identifying whether it is coastal fishing (croaker and its by-catch), high sea fishing (hake and associated species) or non-traditional species. The vessel associated with the permission can be replaced by another unit of equivalent capacity, which does not involve an increase in the fishing effort (for species fully exploited), being forbidden the sales or donations of permissions. Permits are granted for five years in Uruguay and ten years in Argentina, but validity can reach ten and 30 years respectively if vessels belong to fish processing plants on land.

3. CONTRIBUTION OF THE RIGHTS-BASED APPROACH TO ACHIEVING SUSTAINABILITY

3.1 Sustainable use of the resources

Since the implementation of user rights in fisheries, some resources have experienced a decline in biomass. The scientific evaluation of the stock levels is constant through the CTMFM, and determine the TAC.

3.2 Economic viability of the fishery

The distance travelled, and the average length of a fishing trip in the industrial fleet has increased. The fishing gear used in the trawl fleet has not changed. In the small-scale fleet, although the gears are the same, there has been an increase in the meters of nets used. This increase is linked to the growth in length, GRT and engine power of small-scale fishing boats. These variations in the structure of the small-scale fleet were due to the need of the fishers to increase catches in order to improve their income in view of a possible decline in CPUE.

3.3 Social equality

The legally recognized fishing rights have led to the controlled and acceptable management of the fishery, resulting in the sustainability of resources both from the economic and social point of view. With respect to equality of access to the resource, there are no restrictions with respect to gender, youth, indigenous or ethnic groups, but there are restrictions with respect to the number of permits or industrial licensing. Regarding permissions for the small-scale fisheries, there is more flexibility, and social aspects are prioritized in certain circumstances.

4. MAIN CHALLENGES AND WAY FORWARD

4.1 Challenges for the fishery

The main challenges are the sustainability of resources and the improvement of the social use of the fishery. Much of the technical literature on fisheries management addressed, for decades, only the biological aspect of fisheries. Today the focus has shifted more towards small-scale fisheries, driving a more multidisciplinary approach that treats the activity as a complex system of human and natural resources, which increasingly uses the knowledge of fishers to broaden the spectrum of information available for decision-making. Currently, fisheries administration needs people who have skills in biology and social sciences so that it can work with fisheries, environmental issues and people at the same time.

4.2 Improving fishery sustainability in the future

In the future, improving fisheries will require a diversification of catches, targeting new species that have little to no value today. On the small-scale fisheries level, it will be crucial to design larger boats that can travel greater distances and contain cold storage facilities in order to improve the quality of the capture and therefore, its value.

5. LESSONS LEARNED

The creation of dedicated fishing councils helps conflict resolution and promotes discussion over resource allocation. A well-designed fisheries policy that allocates certain areas to tourist activities during the main tourist season, other areas exclusively to the small-scale fisheries, and finally other areas for the industrial fisheries, results in clear allocations of resources and a reduction in conflicts between the sectors. In fisheries management, scientists should listen more to fishers and use their knowledge, based on experience and daily operations.

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