

Conflicts of interest between the artisanal and industrial fishing activity in the Colombian Pacific

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Abstract

Fisheries in the Colombian Pacific started about 50 years ago with the capture and processing of marine shrimp. This industry was strengthened through major investments in infrastructure and technological support. However, conflicts were engendered when the shrimp resource became overexploited, prompting many industrial fishers to invade small-scale fishing grounds, thereby reducing their field of action. Following this invasion, in 1982, artisanal fishermen introduced monofilament threads, known in the region as “electronic trammel”. This new technology of low investment and high impact on catches reduced the activities of industrial fishers, causing a drop in their shrimp production and many of them to go bankrupt. Fishing quotas for shrimp were established several years ago, however, the impact of these measures on the sustainability of the shrimp resource has yet to be observed. A second conflict between small-scale and industrial fishers began when industrial tuna boats, with their high capture capacity, invaded small-scale fishing grounds, thereby leading to the complete impoverishment of small-scale tuna fishers. This generated a series of protests by small-scale fishers, but no major action was taken by the government. The overall evaluation of the case study shows that small-scale fishers are losing out to industrial fishers, and many communities are severely impacted by declining catches and falling income. Overall, it has to be noted that several different government agencies are involved in fisheries management in the Pacific area. Better coordination among government agencies responsible for control and surveillance of the implementation of measures of fisheries management is needed.

1. INTRODUCTION

1.1 Description of the fishery

Shrimp fishing started 50 years ago. It has been a prospering business ever since, generating an important fleet and some of the main processing infrastructure for Colombian fishing. Shrimp fisheries are both industrial and small-scale.

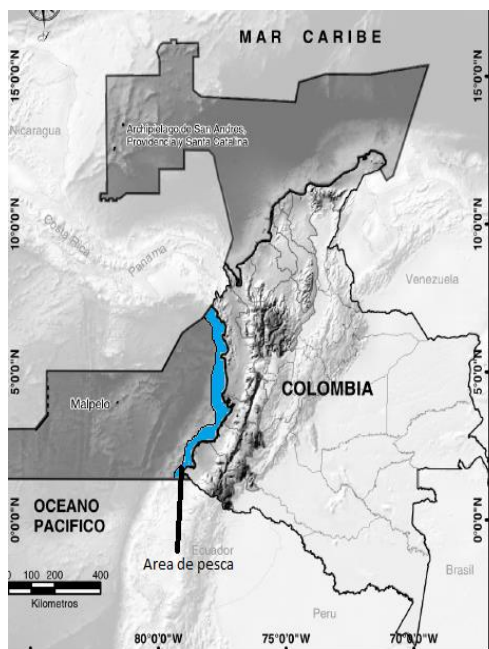


Figure 1. Map of the exclusive economic zones of Colombia.

The blue zone shows the area of influence of fishing in the Colombian Pacific.

Source: Dirección técnica de investigación, ordenamiento y foment (2010).

Towards the beginning of the 1980s, a new fishing gear, monofilament gill net (commonly called "electronic trammel"), was introduced. This fishing gear, which was mainly used by small-scale fishers, had a deep impact on the fishery of the region due to its relatively small cost and the high yield of the catch. At present, shrimp fishing systems range from industrial trawling, mainly for shallow-water shrimp (White shrimp (*Penaeus occidentalis*), titi shrimp (*Xiphopenaeus riveti*)), to small-scale fishing carried out for the same species with gillnets known locally as "electronic trammel", and trawl nets in artisanal boats equipped with outboard motors and called "Changas". The industrial shallow-water shrimp fleet has trips of 18 days on average.

Similarly, the tuna industry emerged as an important industrial alternative that generated more than 70 percent of the Colombian Pacific fishery output, with most of the companies processing their production in plants located in Barranquilla and Cartagena. At present, industrial tuna fisheries involve purse seiners, while the small-scale tuna fisheries use gillnets.

There also exists an industrial whitefish fishery. The boats are maximum 12 meters in length and the fishery targets resources such as hake, bravo, snappers, groupers, saws, sharks. The white fishing fleet stays at sea between 8 to 25 days. All fishing activities in the Pacific concentrate in four main areas, namely Solano Bay, Buenaventura, Guapi, and Tumaco. Buenaventura is the main port, as the industrial fisheries are based there.

1.2 Economic contribution and social implications of fishing activity

Fishing in the Colombian Pacific is an important generator of foreign exchange and food sustainability. This activity generated USD 200 million in export earnings, to which shrimp fisheries contributed USD 2.5 million.

All the fishing in the Colombian Pacific is carried out either by the industrial fleet or by small-scale fisheries. Most of the products from industrial fishing are destined for export. Some products from small-scale fisheries are also exported, such as shrimp and tuna, on the condition that they pass the quality tests

required by the rules of sanitary and phytosanitary measures, listed in the fisheries Codex. However, products from the small-scale fisheries are mostly destined to the national market.

2. FISHERIES MANAGEMENT AND RIGHTS-BASED APPROACHES

2.1 Management of the fishery

All fishing regulations are based on Law 13 of 1990 and its regulatory decree 2256 of 1991, and the Decree 4181 of 2011. The fisheries management in Colombia is under the Ministry of Agriculture and Rural Development and under the Direction of the Aquaculture and Fishing Authority (AUNAP). AUNAP collaborates with fisheries researchers from the sector to determine the exploitation status of the fishery resources. In turn, fisheries models are structured, and the allocation of fishing quotas is recommended, taking into account the objective reference points as a percentage of the maximum sustainable yield, the maximum economic yield, and the biological yield.

AUNAP then submits a proposal on annual quotas to the Ministry of Agriculture and Rural Development. Following an evaluation of the proposal, the Ministry issues an administrative act, which is executed by AUNAP, indicating percentage quotas that are divided between artisanal fishing and industrial fishing. Finally, industrial fishing is assigned individual quotas in line with their production in the previous year. All the quota assignments and management decisions would be incomplete without the involvement of the fishers. Thus, AUNAP has designated two systems, the Fisheries Statistics System (SEPEC) and the Fishers Observer Plan of Colombia (POPC). The SEPEC, which is established in Law 13 and its regulatory decree, has the function of obtaining information on the landings of the different fish stocks, as well as the value at first sale, biological-fishing information such as the fishing effort, fishing gear, fishing places or fishing grounds, and final destination of the production. On the other hand, the POPC is responsible for obtaining information related to fishing "in situ", by determining the relative yields per resource, catch per unit effort (CPUE), sizes, sex, sexual maturity, type of gear used, and general evaluation of fishing grounds.

Other entities that collaborate in decision-making are the Ministry of Commerce, the Maritime General Directorate (DIMAR), the autonomous regional corporations, the fishers' associations, the fishing industry associations, the scientific community with the research organizations and the public and private universities.

2.2 Brief history of rights-based approaches previously used in this fishery

Government presence in fishing activities began in the 1960s, with the establishment of the hunting and fishing office, which is an office of the Ministry of Agriculture. Later, the National Institute of Renewable Natural Resources (INDERENA) was created and tasked with the responsibility, among other functions, of the environmental management of the fisheries, the organization and administration of fishing, and the evaluation of fisheries resources with the help of international entities.

Thus, organizations such as Food and Agriculture Organization of the United Nations (FAO), Japan International Cooperation Agency (JICA), Norwegian Agency for Development (NORAD), IMARPE of Peru, carried out an evaluation of the fishery resources and found that resources such as shallow-water shrimp (white shrimp), which is the basis of the Pacific fishing economy, needed a limit of their catch and fishing effort. Based on these studies, a limit to fishing efforts was agreed upon. From then until the approval of Law 13 in 1990 and Regulatory Decree 2256, a fishing quota was assigned to fishing boats and a closed season was created for the carduma (*Cetegraulis mysticetus*).

On the other hand, permit holders both national and foreign vessels could access fishing grounds, provided that AUNAP declared that fishing quotas were not exceeded. Permits had a five-year duration.

Permit holders had to pay an annual fee, called a fishing license, without which they were not be allowed to fish.

3. CONTRIBUTION OF RIGHTS-BASED APPROACH TO FISHERIES MANAGEMENT TO ACHIEVE SUSTAINABILITY

According to the law in force, the government policy should focus on the sustainability of fishery resources in time and space, and should promote an ecological balance. At the same time, the application of bioeconomic models can sustain an industrially sustainable system that guarantees that artisanal and industrial fishermen and investors have a clear horizon of the approach they can perform without risking their economic integrity.

3.1 Sustainable use of the resource

The main problem facing the management of fishery resources in Colombia is the fact that it is a multispecies fishery, which renders a target species approach to fisheries management very difficult. Unfortunately, in Colombia, the management of resources through fishing quotas has not shown a clear improvement in the sustainability of the fishery resources, although it is likely that without these measures the situation of the fisheries would have been worse. The measures of fishing quotas, as already mentioned, have not had the desired effect due to the multiple species that are caught in the fisheries, more than 30 species on average per fishing trawl.

White shrimp are considered overexploited. The MSY is calculated at 1 200 tonnes in 2016, down from 1 500 tonnes in 2009. The titi shrimp, on the contrary, is fully exploited with a growing MSY, set at 3 600 tonnes in 2016, up from 2 200 tonnes in 2009. Catches of white shrimp levelled at 789 tonnes in 2009 and 98 tonnes in 2016, before going back up to 529 tonnes in 2017. Titi shrimp production was 1 683 tonnes in 2009, decreasing to 289 tonnes in 2016 and 805 tonnes in 2017. Environmental aspects such as El Niño are affecting shrimp catch in the Pacific.

3.2 Economic viability of the fishery

Currently, some control is exercised over the industrial shrimp fleet, while the tuna fleet is under the control of the Inter-American-Tropical-Tuna-Commission (IATTC) and the International Commission for the Conservation of Atlantic Tunas (ICCAT). However, small-scale fishing lacks a minimum level of monitoring, therefore, this activity is out of control.

Interaction between the industrial and artisanal shallow-water shrimp fisheries has caused social and economic conflicts that have prevented the administrative measures from having the desired effects. Small-scale fishers are also using gears that are smaller than what is permitted.

3.3 Social equality

Social aspects can be considered the weakest point of the regulation. While particular efforts have been made to improve the living conditions of fishers, Colombia still lacks a national programme with a social focus.

One of the social problems faced by fishing communities of the Pacific was the conflict between the fishers of Bahía Solano and tuna vessels. An active solution to this problem was the creation of Exclusive Fishing Zone on 29 July 2013. Although no specific evaluations have been made yet, it is observed that local fishery resources, in terms of their landings, have improved.

Another problem that was urgently addressed was the fishing of a resource called piangua (*Anadara tuberculosa* y *Anadara similis*), a type of bivalves which is collected by women in mangrove areas in the

Colombian Pacific. The fishing authority has managed to group these fisherwomen into associations, managing the sizes of the catches in a way that ensures that the resource is collected in a sustainable manner.

Fishers, in general, do not have any social security; especially small-scale fishers who are entirely unprotected. There exists no government policy to improve their quality of life.

4. MAIN CHALLENGES AND WAY FORWARD

4.1 Main challenges for the fishery

Under the current institutional and private scheme, the main challenges facing the Colombian Pacific fishery are the professionalization of small-scale fishing, as well as the sustainable utilization of fishery resources. It is essential to educate the small-scale fishers about good fishing practices and good practices of process and management. Equally important is to change the policy of the fisheries administration from monospecies to multispecies approaches, as the tropical ecosystems of the Colombian Pacific have a multitude of species of fish, crustaceans and molluscs.

Management strategies should tend to resolve conflicts between small-scale and industrial fishers, especially in relation to the overlapping of fishing areas; this conflict has already led to imbalances in the management of fisheries. These conflicts have their origin in the deficient regulation of the fishing areas since the regulations mention that the first mile from the coast is reserved to the small-scale fishery, but the geological conformation is such that the ocean is very deep already a few meters from the shore. If this regulation were applied, the industrial fishing of shallow water shrimp would disappear. Furthermore, deep shrimp fishing has very high investment costs and only mixed companies that fish, process and export these resources can survive.

In the fisheries of the Pacific, the conflicts that have been generated are the following:

1. Allocation of fishing quotas to both industrial and artisanal, who complain that fishing quotas are very low and this undermines their economic stability.
2. Discrepancies, in the way fishing quotas are assigned among fishermen, since not all their needs, which cover the supply and demand of the resource, are taken into account.
3. Conflicts between industrial and artisanal fishermen since fishing zones overlap and quotas are not clearly established for each other, which has led to unfair competition between the different actors in the system.

One additional challenge is that several government agencies are involved in the implementation of management measures, and the coordination among them is not very smooth.

4.2 Improving the sustainability of the fishery in the future.

It is important to review the methods of administration of fishery resources, especially fishing quotas that are not fully functioning. It would be interesting to study the possibility of regulating the fishing effort in such a way that the two measures are complementary.

It is very important that two fundamental aspects are reinforced: control and surveillance and the evaluation of fishing communities. To achieve these objectives, it is important to have a research system with a budget and ample and sufficient staff. This would imply one dedicated department in AUNAP of fishery statistics and one for social aspects of fisheries.

The latter would allow management to be carried out in a participative manner where the fishers are empowered to manage their own fish resource.

Finally, the control and survey department needs to be strengthened in order to control that all fisheries management activities are carried out in a correct manner.

5. LESSONS LEARNED

Once a resource is overexploited, cuts in quotas create conflicts among stakeholders, in the case of Colombia, among industrial fishers and small-scale fishers. Stakeholder dialogue must be implemented in order to create an understanding of fisheries management and sustainability of the resources.

Exclusive fishing zones for small-scale fishers are only viable if the implementation is realistic. In the case of Colombia, the main resource exploited by the industrial fisheries is close to the shore. Thus, the implementation of closed fishing areas is not possible or would mean the disappearance of a whole industry.

Better coordination among the government agencies responsible for control and surveillance of the implementation of measures of fisheries management is needed. It would be more efficient to have only one agency responsible; AUNAP seems like the best choice.

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