Understanding artisanal fishery reality of Fonseca's Golf: socio-economic indicators and technical advice for a basic management

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Summary

Any process of fisheries management needs agile and useful methodologies, which is helping to understand the problems and main conflicts on the area. Also, those methods should to include local actors in decision-making process. Taking the case study of six fishing communities around the complex estuarine system of the Gulf of Fonseca, it was designed a flexible and participatory approach which has allowed to fill the gaps of fishing data. On the other hand, this new data has been validated by fishers, local associations and managers (administration), creating new ways of mutual understanding.

Introduction

The Gulf of Fonseca is an area of Central Pacific shared by three countries, El Salvador, Honduras and Nicaragua, with a population of about one million people where artisanal fishery (fisheries and aquaculture) is the primary productive activity (Martínez & Bravo, 2011). For several decades, this marine ecosystem has been threatened by different factors (population growth, increased modernization of fleet, engines, gears, natural disasters, industrialization pressure, etc.) which are causing a decline in the main target species.

Although there have been several initiatives by the governments of the three countries to attempt a Gulf common ecosystem management, the absence of studies that provide reliable information about fishing activity was a big obstacle that prevents an effective decision-making.

Thus, six different communities, Potosí and Jiquilillo[1] (Nicaragua), Boca de Río Viejo and Cedeño (Honduras), La Pesquera and Playitas (El Salvador) were selected (Figure 1). It was characterized the fishing activity by community though several topics such as: number of fishermen, number of vessels, gear's types, most important catches, volume of catches along the annual fishing cycle, fishing effort and distribution. All these data is helping to build a new channel for improving governance from a bottom-up approach.
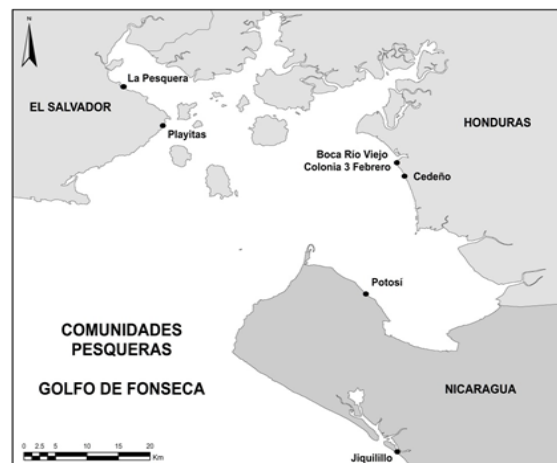

Figure 1. Map with the study communities in the Fonseca's Gulf.

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[1] Jiquilillo is a Nicaraguan community of fishermen located in outside waters from Fonseca's Gulf. Although it was included on the study it won't be taken into account on this paper.

Materials and Methods

The methodology has a clearly participatory approach. Initially, a field survey (March 2013) was performed to identify the communities that would be part of the pilot study. Subsequently, it was conducted a *training week* for local technicians (May 2013). They would be responsible for collecting the information on the field through inquiries and ecosystem mapping.

Inquiries and ecosystem mapping were conducted from June to August 2013; both were designed to obtain information on the following areas:

- Characterization of the number of pilots, crew and fishing gear.

- Identification of the most important species in terms of their importance, volume and economic value.

- Identification of the most significant threats for the particular community.

- Characterization of effort, benthic habitats, distribution and competition of the fleet.

The information obtained in the surveys was organized in different databases (Excel), while the information obtained in ecosystem mapping was digitized and entered into a SIG. Subsequently, dataset were presented and validated by the fishing community and the government authorities of each country (May 2014).

Results and Discussion

There is a clear lack of information on fishing activity in the Fonseca's Gulf. There are no current records to identify and to control the number of fishermen, vessels and fishing gears used by community. Despite fishers must have a fishing license, the reality is that only a few of them have it. This is even more relevant for the vessel license (Table 1).

Table 1. Main characteristics of the fleet in the study communities of Fonseca's Gulf					
COMMUNITY	COUNTRY	NUMBER SKIPPER	NUMBER VESSEL	SKIPPER LICENSE	VESSEL LICENSE	VESSEL LENGTH (feet)
Potosí	Nicaragua	45	48	39	2	23.5 (±1.8)
Boca de Río Viejo	Honduras	111	112	17	33	23.1 (±3.4)
Cedeño	Honduras	97	97	3	5	20.7 (±1.8)
La Pesquera	El Salvador	13	13	9	1	19.2 (±4.9)
Playitas	El Salvador	27	27	12	3	22.4 (±1.9)

A similar case is affecting to the fishing gear. There are many different types of gillnets that are being used by different communities in each country, but are still used without any control, making it difficult to control the effort in the area. Furthermore, also is common to use prohibited gillnets.

Currently, it is generating some agreement between the authorities of each country to start a protocol for registration and control of these activities on the communities.

References

Martínez Ortiz, A., Bravo Moreno, J.R. Evaluación de potenciales impactos y reducción de la vulnerabilidad de la pesca y la acuicultura al cambio climático en el Golfo de Fonseca (El Salvador, Honduras y Nicaragua). FAO Actas de Pesca y Acuicultura 2011; 29: 39-102.