

# **FISHERY IMPROVEMENT PROJECT**

**MEXICO GULF OF CALIFORNIA  
BROWN SHRIMP - TRAWL**

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## **ACTION 1**

**REVIEW THE STOCK STATUS, CURRENT HARVEST  
CONTROL RULES, AND HARVEST STRATEGY**

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## **SIX-MONTH PROGRESS REPORT**

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## Action 1. Review the stock status, current harvest control rules, and harvest strategy.

This activity is guided by the development of four specific tasks, all of which involve actions to be carried out during the fishing season, particularly through the onboard monitoring program. Implemented for the second consecutive year, this program has observers currently aboard the fleet, collecting data, documenting good practices, and ensuring compliance with the established methodology.

### **Task 1. Establish a collaborative agreement with INAPESCA, the fisheries authority responsible for stock assessment, to enhance and provide support for the analysis of stock status.**

Last July, the first inter-institutional meeting was held to formalize collaboration with the new IMIPAS Pacific Director. During this meeting, the necessary agreements were established to move forward with the development of research activities.

As a result, IMIPAS is preparing a Memorandum of Understanding (MoU) that will outline the formal commitments of each party. Within this framework, the FIP Implementer will assume responsibility for coordinating and monitoring the implementation of the agreed activities.

Although the MoU is expected to be signed in the coming months, there is already formal evidence of inter-institutional collaboration, representing an important step toward consolidating joint work within the framework of the fishery improvement Project.



**Figure 1.** Signing of the inter-institutional collaboration agreement between fisheries authorities, academia, and the fishery improvement project.

**Task 2. Convene workshops with official and independent scientists to review the stock status, current harvest control rules, and harvest strategies.**

At least five inter-institutional meetings have been held with the participation of researchers from IMIPAS, the Interdisciplinary Center for Marine Sciences (CICIMAR), and fisheries consultants. These meetings have focused on reviewing the status of the shrimp stock using two methodological approaches. The first is a surplus production model, through which stock status results have already been obtained and presented using a Kobe plot. The second approach, currently being developed mainly by IMIPAS researchers, is an age-structured model that is expected to be submitted for publication in a scientific journal by the end of the month. As a result, these meetings and workshops have already delivered concrete outcomes.



**Figure 2.** Photographic evidence of meetings and workshops with fisheries authorities and researchers.

In addition, the hiring of Dr. Arreguín Sánchez to conduct a stock assessment of brown shrimp in the Gulf of California has yielded significant progress, as evidenced by a scientific article that has been submitted and is currently under review for publication.



**Figure 3.** Reference cover page of the submitted scientific article.

**Task 3. A management strategy evaluation is developed to review current and identifies optional harvest strategy approach to meet management objectives**

Last April, all researchers from the IMIPAS Pacific Shrimp Program (BCS, Sonora, Sinaloa, Oaxaca, Nayarit) gathered in La Paz, BCS, to conduct the Pacific Shrimp Workshop: Stock Assessment, Reproductive Condition, and Management Measures. This workshop provided an opportunity to evaluate current management strategies and their respective control rules, with the objective of making the necessary adjustments through the development of a new model for estimating reference points. This model, previously mentioned, is based on a size-structured approach and will be used to propose optional harvest strategies for the Fisher across different regions in Mexico.



**Figure 4.** Pacific Shrimp Workshop: Stock Assessment, Reproductive Condition, and Management Measures.