

Southwest Atlantic Argentine Shortfin Squid (TSSFA)

Fishery Improvement Project (FIP) Workplan

Introduction

The fishery being assessed is the Taiwan Squid and Saury Fisheries Association’s squid-jigging fishery. The fishery targets Argentine shortfin squid (*Illex argentinus*) in the southwestern Atlantic. Those squid-jigging fishing vessels are flying Taiwanese flag and engage in fishing activities on the high seas of the southwestern Atlantic and within the exclusive economic zone (EEZ) of the Falkland Islands. The Argentine shortfin squid Fishery in southwest Atlantic oceans was once managed by the South Atlantic Fisheries Commission (SAFC) between 1990 to 2005, which is a bilateral commission established by the United Kingdom and Argentina. The Commission used to conduct scientific researches based on the information provided by its members, and set a catch limit of the squid based on the assessment result. However, relevant joint scientific research projects came to a halt after Argentina’s withdrawal from the Commission, making it no longer possible to obtain basic scientific information of the species to form a management decision. This fishery therefore is not managed by any organization.

This workplan is to respond the challenges identified by the needs assessment report and scoping document, with an aim to assisting this fishery toward more sustainable development.

Table 1: Workplan Overview

Workplan Version and Date	Version 2, November 2024
Start date (expected)	End date (anticipated month/year)
December 2022	December 2027
FIP Lead (organization/individual responsible for Action Plan)	Improvements recommended by (meeting/group that supported the development)
Taiwan Squid and Saury Fisheries Association Overseas Fisheries Development Council	Evaluation team organized by Overseas Fisheries Development Council
FIP Coordinator (organization/individual responsible for reporting on FisheryProgress)	Workplan developed by (consultant or person)
Overseas Fisheries Development Council	Hui-Shan Ma

Acronyms

ERA	Environmental risk assessment
EEZ	Exclusive economic zone
FA	The Fisheries Agency of Taiwan
FIP	Fishery Improvement Project
HCRs	Harvest control rules
OFDC	Overseas Fisheries Development Council
SAFC	South Atlantic Fisheries Commission
TSSFA	Taiwan Squid and Saury Fisheries Association
UoA	Units of Assessment

Unit of Assessment(s)

Table 2. Unit(s) of Assessment (UoA)

UoA 1	Description
Target species (common and scientific name)	Argentine shortfin squid (<i>Illex argentinus</i>)
Stock	Atlantic squid
Geographical area	Southwest Atlantic Oceans and the Falkland Islands' valid fishing zone: licence category B for <i>illex</i>
Fishing method or gear type	Jigging
Fishing fleet or group of vessels, or individuals fishing operators pursuing stock	Large distant water squid-jigging vessels of Taiwan

FIP Actions

Table 3. Performance Indicator Action Plan Table for Action 1

<p>Action Number and Name (One sentence description)</p>	<p>1.1 Develop a harvest strategy for Argentine shortfin squid of southwestern Atlantic Ocean.</p>
<p>Action Goal (One sentence that describe the result of the action)</p>	<p>To establish an interim harvest strategy and harvest control rule applicable to Argentine shortfin squid for the UoA.</p>
<p>Action Description (Brief summary of the steps involved in the action and importance of the action in achieving the FIP objectives)</p>	<p>According to the requirement of PI 1.2.1 harvest strategy within the environmental risk assessment (ERA) that harvest strategy should includes all necessary components, such as monitoring, stock assessment, harvest control rules (HCRs) or some other science-based mechanism to limit harvest, and management actions to maintain sustainability.</p> <p>To achieve the goals mentioned above, the action at this part includes searching the practical practice of Fisheries Harvest Strategy and Control rule on squid and developing the methodology of Harvest Strategy which applicable for squid.</p>
<p>Expected Completion Date</p>	<p>December 2027</p>
<p>Priority (Based on the implementers criteria: e.g., lowest scoring issues are high priority or actions that are necessary to complete before beginning other actions are high priority)</p>	<p>High</p>
<p>Estimated Cost (An estimate of the budget needed to complete the action)</p>	<p>Year1: \$ 33,000USD Year2: \$ 55,000USD Year3: \$ 55,000USD Year4: \$ 55,000 USD Year5: \$ 55,000 USD</p>

Responsible Parties (List of participants)	TSSFA 、 FA 、 OFDC 、 invited experts (to be decided)
MSC PI(s) Addressed by the Action	1.2.1 Harvest strategy 1.2.2 Harvest control rules

Action	Tasks/ Milestones	Responsible (lead)	Responsible (supporting role)	Starting date	Expected completion date	Evidence of completion / results
1.1 Undertake the relevant research on target stock	Decide and invite the expert.	OFDC 、 TSSFA	stakeholders	December 2022	March 2023	Completed. In early 2023, the working group invited two experts, Dr. Chia-Ying Kao from National Taiwan University and Dr. Chih-Shin Chen from National Taiwan Ocean University, to assist with squid-related research for this FIP.

	Conduct a pilot program, which includes reviewing biological data, squid's biological reference point treaties, and relevant scientific literature, to develop the subsequent research roadmap.	Invited experts	OFDC 、 FA	April 2023	April 2024	Completed. The pilot program was completed by the end of 2023.
	(Tentative, subject to change according to the result of the pilot program, if necessary) Conduct initial desktop	Invited experts	OFDC 、 FA	May 2024	April 2025	On track

	research/interviews on UoA species, life span, reproduction, spawning area, spawning aggregation, size frequency and migration.					
	Data collection and analysis in accordance with the result of the pilot program.	FIP Participants, & Invited experts	OFDC 、 FA	May 2024	December 2027	On track
	(Tentative, subject to change according to the result of the pilot program, if necessary) Conduct UoA dynamic population research (growth, mortality, survival, gender, risk, exploitation).	Invited experts	OFDC 、 FA	July 2024	June 2025	
1.2 Stock assessment	(Tentative, subject to change according to the result of the pilot program, if necessary) Consider the uncertainties of the UoA stock	Invited experts	OFDC 、 FA	July 2025	October 2025	

	assessment model according to the available information.					
	(Tentative, subject to change according to the result of the pilot program, if necessary) Proposal for a stock assessment framework and Biological Reference Point definition appropriate to the UoA.	Invited experts	OFDC 、 FA	November 2025	March 2026	
	(Tentative, subject to change according to the result of the pilot program, if necessary) Stock assessment and BRP establishment of the UoA	Invited experts	OFDC 、 FA	April 2026	April 2027	

1.3 Create UoA's Harvest Strategy And Control Rule	Search the practical practice of Fisheries Harvest Strategy and Control rule on squid	Invited experts	OFDC 、 FA	April 2023	May 2024	
	(Tentative, subject to change according to the result of the pilot program, if necessary) Develop an interim harvest strategy and harvest control rule applicable to Argentine shortfin squid for the UoA.	Invited experts	OFDC 、 FA	June 2026	December 2027	

Table 4. Performance Indicator Action Plan Table for Action 2

Action Number and Name (One sentence description)	2.1 Improve information collection on ETP species and evaluate the effectiveness of conservation measures
Action Goal (One sentence that describe the result of the action)	Support ETP species data collection to better understand the impact of the squid jigging fishery on these species and to determine effectiveness of management.

<p>Action Description (Brief summary of the steps involved in the action and importance of the action in achieving the FIP objectives)</p>	<p>To strengthen ETP species data collection, it is recommended that to deliver skipper training to enhance the ability to fill in the logbook correctly and safe handling and release ETP species. Besides, to implement observer program, to collect the catch data, discard and interaction data from fisheries.</p> <p>The FIP will be taking steps to evaluate ETP management conservation measures and adapting them as necessary to ensure effectiveness and that data collection will help inform the evaluation.</p>
<p>Expected Completion Date</p>	<p>December 2027</p>
<p>Priority (Based on the implementers criteria: e.g., lowest scoring issues are high priority or actions that are necessary to complete before beginning other actions are high priority)</p>	<p>Medium</p>
<p>Estimated Cost (An estimate of the budget needed to complete the action)</p>	<p>Year1: \$ 60,000 USD Year2: \$ 60,000 USD Year3: \$ 60,000 USD Year4: \$ 60,000 USD Year5: \$ 60,000 USD</p>
<p>Responsible Parties (List of participants)</p>	<p>TSSFA 、OFDC 、FA 、FIP Participants & invited experts(to be decided)</p>
<p>MSC PI(s) Addressed by the Action</p>	<p>2.3.2 ETP species management 2.3.3 ETP species information</p>

Action	Tasks/ Milestones	Responsible (lead)	Responsible (supporting role)	Starting date	Expected completion date	Evidence of completion / results
2.1 Improve information collection on other and ETP species	Deliver skipper training to enhance the ability of filling in the logbook	TSSFA and OFDC	FIP Participants	January 2023	June 2024	Completed. The lead of this FIP conducted two training sessions to improve skippers' reporting ability in December 2023 and November 2024.
	Deliver skipper training to teach best practices on safe handling and release.	TSSFA and OFDC	FIP Participants and related experts	July 2023	December 2024	Completed. The safe release incidental catch species training was held in Kaohsiung on November 26, 2024.
	Develop and adopt the policy of incidental catch	TSSFA, OFDC and FIP Participants		July 2024	December 2024	Completed.
	Conduct observer program.	TSSFA and OFDC	FIP Participants, related expert, and FA	January 2023	December 2027	

	Through the implementation of the observer schemes, to ensure to collect catch data, discard and interaction data from the fishery	TSSFA and OFDC	FIP Participants, related expert, and FA	January 2025	December 2026	
2.2 Evaluate the effectiveness of conservation measures	Evaluate the effectiveness of conservation measures, and modify the conservation measures which are adopted, if needed.	Invited expert and Fisheries Agency of Taiwan	FIP Participants, TSSFA	January 2027	December 2027	

Table 5. Performance Indicator Action Plan Table for Action 3

Action Number and Name (One sentence description)	3.2 Monitoring and Management Performance Evaluation
Action Goal (One sentence that describe the result of the action)	Conduct the external evaluation of the management system for Taiwan
Action Description (Brief summary of the steps involved in the action and importance of the action in achieving the FIP objectives)	<p>As currently there is no specialized international fisheries management organization for the Atlantic Argentine shortfin squid fishery, no similar mechanism can be applied as external review.</p> <p>Therefore, the FIP will be taking steps to invite an independent third party, such as non-governmental organization, academic institute, or fishery management expert to conduct the audit and review of management system of Argentine shortfin squid fishery of Taiwan so as to ensure its objectivity.</p>
Expected Completion Date	December 2027
Priority (Based on the implementers criteria: e.g., lowest scoring issues are high priority or actions that are necessary to complete before beginning other actions are high priority)	Medium
Estimated Cost (An estimate of the budget needed to complete the action)	\$ 5,000 USD
Responsible Parties (List of participants)	TSSFA, OFDC, FIP participants, independent third party
MSC PI(s) Addressed by the Action	3.2.4 Monitoring and Management Performance Evaluation

Action	Tasks/ Milestones	Responsible (lead)	Responsible (supporting role)	Starting date	Expected completion date	Evidence of completion / results
3.1 Conduct the external evaluation of the management system	Decide and invite an independent third party.	OFDC、TSSFA	FA	January 2025	June 2025	
	To conduct the audit and review of management system of Argentine shortfin squid fishery of Taiwan.	Independent third party	TSSFA, OFDC	January 2025	December 2027	