

PROJECT NARRATIVE

A. Project Description

Title.

Scenario Planning: preparing for plausible future of Eastern Pacific Ocean tuna fisheries

Funds. Acquired \$150,000 from the Blue Convergence Fund for a scenario planning facilitator and two in-person workshops.

Purpose, Objectives & Focal Questions.

The purpose of this project is to conduct climate scenario planning exercises that incorporate diverse stakeholder input and develop adaptive management strategies for tuna fisheries in the Convention Area of the Inter-American Tropical Tuna Commission. The draft objectives should address the question “Why are we doing this work?”

- (i) To explore how fishery governance and management will be affected by environmental and climate-driven dynamics in fisheries, particularly shifting stock availability and distributions.
- (ii) To develop a set of tools and processes that provide flexible and resilient fisheries management strategies, capable of effectively addressing uncertainty in an era of environmental and climate changes.

Specifically, the draft focal questions we aim to address are:

- (i) How will climate and environmental dynamics affect stock distribution, availability, and other aspects of fisheries in the near future, e.g. over the course of the next 10 to 20 years or on a timescale to be discussed and defined and
- (ii) What would be effective future governance and management strategies to make IATTC, its members and the fisheries under the purview of the Commission more resilient to these effects?

Background.

The need to be climate resilient is spreading throughout the fisheries world, including for the eastern Pacific Ocean (EPO) tuna and tuna-like fisheries. With an already variable climate pattern such as the El Niño-Southern Oscillation (ENSO) and with marine heatwaves occurring more frequently in the EPO, it is important for fisheries management to be flexible, adaptive, and dynamic, particularly as this uncertainty and variability increase with climate change. Tuna and the fisheries that target them in the EPO are known to travel hundreds of kilometers, often driven by environmental gradients. Although understanding of the impacts of climate dynamics on tuna, tuna-like species, and vulnerable, key bycatch species is ongoing, some work predicts that the biomass of all three tropical tuna species, (skipjack, yellowfin, and bigeye) will shift from the Western and Central Pacific Ocean (WCPO) to the EPO in the coming decades as a result of climate dynamics (Bell et al. 2021). With over 50% of the world's fished tuna coming from the WCPO, it is particularly important to understand the potential ecological and socio-economic consequences of such shifts (Peatman et al. 2023). In 2019 alone, global tuna fisheries accounted for almost \$12 billion in ex-vessel sales and an end of value of \$40 billion (Kinds et al. 2025) with 65% of that value attributed to the Pacific alone. Beyond distribution shifts, studies have found that environmental variability and climate dynamics affect the recruitment success of tuna, which may lead to uncertainty in year-class strength and in turn, population abundance (Torres-Faurrieta et al. 2016, Bell et al. 2021). While we continue to collect and analyze critical fisheries

and ecological data, it is equally important to have productive and constructive conversations with diverse stakeholders to better understand and anticipate climate and environmental impacts and discuss adaptation options through open-ended, engagement-oriented, participatory approaches.

Context.

A. To promote climate resilient fisheries across the Inter-American Tropical Tuna Commission (IATTC) Convention Area, which is fished by over 25 Members and Cooperating Non-Members of the IATTC (CPCs) from coastal and distant-water nations, it is crucial to provide opportunities, both to educate and to learn from diverse stakeholders through active engagement. IATTC staff plans to create these opportunities and discussions surrounding climate-fisheries impacts and future ways forward through a climate scenario planning exercise within the context of the IATTC Climate Change Workplan ([SAC-15-12](#)). During this multi-year exercise, representatives of the CPCs authorities and fishing sector and industry, as well as other relevant stakeholders including regional fisheries management organizations (RFMOs), intergovernmental organizations (IGOs), invited experts, and non-governmental organizations (NGOs), will gather to discuss plausible futures in the context and framework of the IATTC as a result of climate and environmental dynamics. This will be achieved through a multi-phase approach. After a preparatory online phase, plausible future scenarios will be discussed and developed by participants at an in-person workshop. Then, diverse decision makers will engage in advanced discussions on ways the Commission can be better prepared for these scenarios.

B. The proposed work aligns with the IATTC's current Climate Change Workplan ([SAC-15-12](#)), which has been developed over the last two years with multiple stages of input from stakeholders. The workplan arose from the adoption of [Resolution C-23-10](#) (now [C-24-10](#)) on climate change which commits the Commission and relevant subsidiary bodies (e.g., Scientific Advisory Committee [SAC]) to include climate change as a recurrent agenda item, and in general to, "highlight and consider the best scientific information available on the relationships between climate change, target stocks, non-target species, and species belonging to the same ecosystem or associated with the target stocks."

IATTC's climate change workplan anticipates five phases:

- 1) Planning,
- 2) Determining the goal and scope,
- 3) Developing a framework,
- 4) Creating tools, and
- 5) Tool application and/or management implementation.

During IATTC's 1st Climate Change Workshop (February 2025), external speakers and stakeholder discussion focused on Phases 2 and 3 of the workplan - main goal, scope and framework. From these discussions, the staff drafted recommendations on these elements for the climate change workplan, which were endorsed by the SAC in June 2025 ([SAC-16 INF-P](#)). The IATTC Climate Resilient Fisheries Framework thus created is organized into a cycle of seven steps designed to be iterative (Fig. 1). Since Step 1 (Define goal and scope) of the framework aligns with Phases 2 and 3 of the workplan, all were considered complete by the end of the 2025 SAC meeting.

In July 2025, the staff moved on to Phase 4 (Creating tools) of the workplan and Step 2 (Assess

climate impacts and vulnerabilities) of the IATTC's Climate Resilient Fisheries Framework. In the context of climate resilient fisheries plans, it is important to assess climate impacts and vulnerabilities at three levels: ecological/ecosystem, fishery, and management. To introduce how climate impacts can be assessed at these three levels and provide examples to our stakeholders, the 2nd Climate Change Workshop (April 2026) was organized. The workshop consisted of a mini-symposium in which 15 external speakers made presentations on one or more climate-related fisheries science tools that assessed climate impacts for at least one of the three levels. The staff also shared the current tools already being developed in-house that have begun to assess the impacts of climate dynamics on IATTC fisheries. As a result of a thorough review of various tools ([CC-02-01](#)) and feedback from the 2nd Climate Change Workshop, the staff recommended three ambitious tools to be built from the ground up, one of them being scenario planning.

Important deliverables from the scenario planning exercise will be stakeholder input on the vulnerabilities at all three levels (Step 2) as well as possible adaptation actions for Step 4 of the framework. This knowledge exchange and assembling will directly lead to stakeholder informed strategies to enhance climate resilience in the context and framework of the IATTC (see Measurable Deliverables for more detailed information).

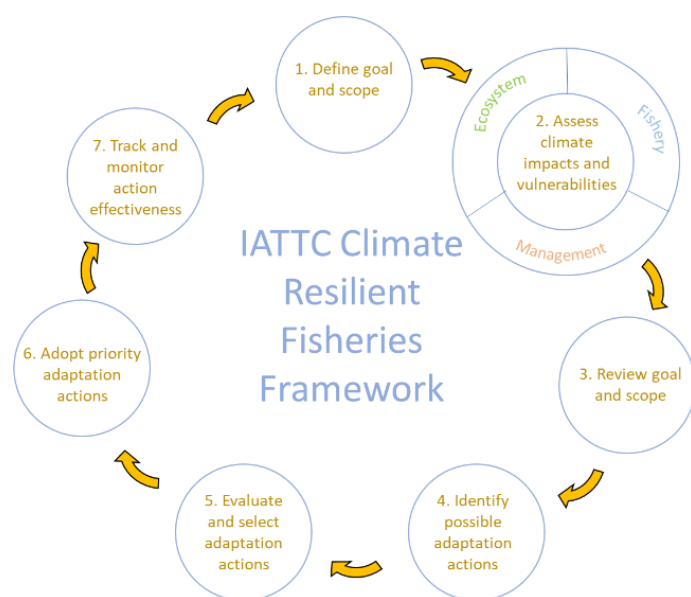


Figure 1. IATTC's Climate Resilient Fisheries Framework outline in more detail in [SAC-16 INF-P](#).

Team members, participants, and roles.

The scenario exercise will be led by the Core Team and will be executed by the Broader Team. The Stakeholder participants will participate in the webinars, the workshops and the surveys.

- Core Team leads: Dan Crear, Jon Lopez, Angel Saz-Carranza
- Core Team: Core team leads and Alex Da Silva, Jean-Francois Pulvenis and Brad Wiley
- Broader Team: Core team and other IATTC staff (TBD)
- Other participants: CPCs representatives (Commissioners, Heads of Delegation, Delegates), fishing industry members, CPC fisheries managers and scientists, and other relevant stakeholders (other RFMOs, IGOs, invited experts, and NGOs)

Project Activities.

Like climate vulnerability assessments, ecosystem status reports (i.e., ecocards), and management strategy evaluations, scenario planning is an example of a tool used to help scientists assess and monitor change and assist managers and decision-makers in implementing actions to address the change. Fortunately, scenario planning can be used to assess climate impacts from the fishing industry and management perspectives, while also offering potential solutions or adaptation actions for plausible future scenarios. The IATTC's plan is, as laid out in the framework, to use multiple tools to understand, assess, and mitigate the impacts of climate dynamics on the ecosystem, fishery, and management in the context and framework of the IATTC and subsequently identify and implement effective management actions that promote the IATTC's climate resilience. As mentioned above, scenario planning is a powerful tool in the broader toolbox for beginning to address the overarching goal of promoting climate resilience.

In short, scenario planning is a tool to help stakeholders, and decision-makers in particular, prepare for plausible futures. This tool does not predict the future but rather facilitates the presentation of a range of possible futures to prepare for (Schwartz 1996, Peterson et al. 2003). In a climate-resilient fisheries context it can be used to help fisheries managers prepare for the range of ways climate dynamics could impact fisheries, both positive and negative. Scenario planning uses a participatory approach that brings diverse stakeholders together to help shape the plausible futures. This process usually includes the following steps: i) identify key drivers, ii) determine important uncertainties, iii) develop plausible scenarios within the context of those uncertainties, iv) identify actions and recommendations that consider those scenarios, and v) develop key trigger points and monitor for change. There are many benefits to scenario planning including providing a way to organize complex information and stimulate proactive and innovative thinking about how to prepare for change. This exercise differs from the typical regulatory process; reducing managers' "limited" view of the future and creating ways to address uncertainty; and enhancing stakeholder engagement while introducing more diverse ideas to be considered in the decision-making process.

IATTC plans to adapt the scenario planning approach used by the U.S. East Coast Climate Change Scenario Planning (ECSP) exercise organized by the Mid-Atlantic Fisheries Management Council (MAFMC), the National Oceanic and Atmospheric Administration (NOAA), and other fisheries bodies along the U.S. east coast (MAFMC 2023). Figure 2 shows the four scenarios used by the ECSP. Similar to the ECSP, IATTC has hired a facilitator who specializes in scenario planning. This facilitator will work with the core IATTC team on conducting a scoping process, developing materials and logistics for a scenario building workshop, facilitating that workshop, and facilitating a second workshop dedicated to discussing the governance and management strategies to address the scenarios.

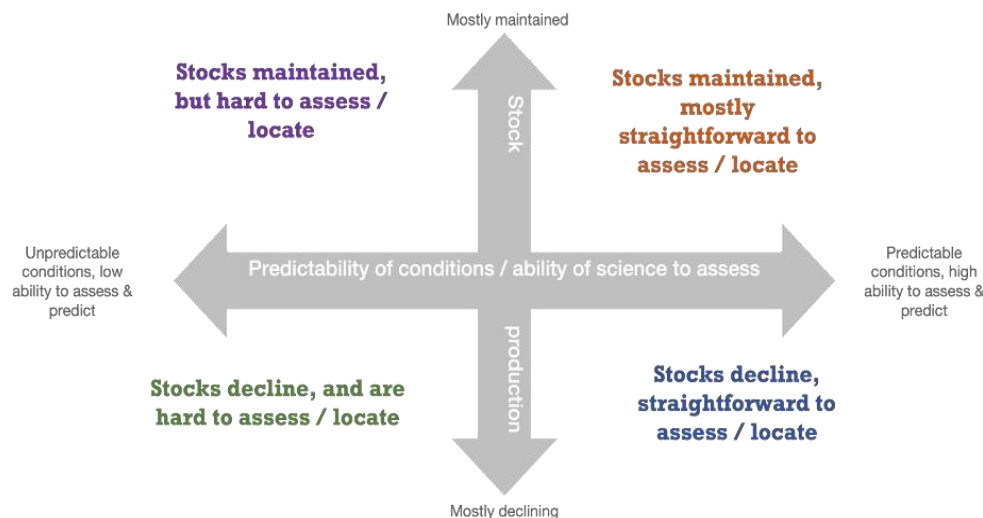


Figure 2. The two critical uncertainties selected by the ECSP core team used for their scenario building workshop (MAFMC 2023).

IATTC’s scenario planning exercise will consist of the following six phases, each with specific goals and main outputs:

Phase	Goals	Main outputs
Orientation	Establish project objectives, guidance structure, process, temporal scope, and timeline	Online meeting w/ broader team based on draft-draft doc Draft final project document
Scoping	Socializing project Gain stakeholder perspectives on focal issue (and driving forces ¹ —the latter very preliminary and aggregate level)	Online webinar w/ stakeholders Refined final project document
Exploration	Identify and analyze drivers, variables, trends, and uncertainties. Use interviews, survey, and literature review.	Webinars by experts (mostly informative but allow for feedback via surveys/polls at the end) with stakeholders Report with drivers, polarity and uncertainty
Create Scenarios	Produce (w/ stakeholders) small number of plausible scenarios using critical drivers	Scenario-building workshop w/ stakeholders Final report: Scenario narratives
Application	Answer “So what?” questions: What are the impacts of these plausible futures? What can we do about it?	Workshop with decision makers to distill implications and actions Report with implications and strategies.
Monitoring	Identify important indicators (trigger points) that can signal changes in the environment as future unfolds	Report on monitoring (indicators, or other mechanisms e.g. committees, working groups)

Additionally, the team may develop dissemination materials, including an online communication product linked to the IATTC website that shares with stakeholders and the public the scenario planning process and indicators that are monitored. Results of the workshops will also be presented at relevant IATTC meetings, including those of the Ecosystem and Bycatch Working Group (EBWG), the SAC, and the annual meeting of the Commission.

It is important to emphasize that to address other climate impacts on the ecosystem, fishery, and

¹ oceanographic, ecological/biological, and social and economic.

management at IATTC, other tools will be developed concurrently during the scenario planning process (e.g., climate projections of species of interest). Results and recommendations from this work, as well as complementary studies conducted within the IATTC's Climate Change Workplan, will be shared with the EBWG, SAC and the Commission on a regular basis.

Data Sources.

The IATTC does not anticipate any need for additional sources of data for the proposed work beyond the existing IATTC data from its various information programs and the prior workshops and analyses that will inform discussions during the proposed project.

Challenges.

A. IATTC manages a large region of the Pacific Ocean with CPCs from all over the world, fishing for tuna in coastal small-scale fisheries to large open ocean industrial fisheries, which makes it difficult to bring diverse stakeholders together across all CPCs. Limited resources often force workshops to be held virtually, which introduces significant limitations on participation and feedback. Allocating the majority of these funds to bring stakeholders together in the same room for in-person workshops will therefore increase the value and impact of the scenario planning exercise. To bridge language barriers for its members and promote meaningful participant contribution and discussion, the IATTC ensures that workshops have interpretation for its two official languages, English and Spanish. These types of targeted outreach and interpretation efforts address equity challenges that are common in international fisheries management organizations.

B. As mentioned earlier, IATTC is a consensus seeking body influenced by many factors. A potential barrier to the applicability of the project's final outcome would therefore arise if, following a successful scenario planning exercise that resulted in useful recommendations, a CPC considers that the proposed conservation and management measures do not meet the necessary elements that would increase IATTC's climate resilience. By engaging all CPCs early, and with a facilitator experienced in similar processes, the project builds trust and shared ownership, led by a facilitator with similar experiences, increasing the likelihood of consensus on climate-resilient measures.

B. Outcomes

Project Deliverables and Deadlines.

Deliverable	Deadline
Refined final project document describing the scenario planning exercise (this document).	Oct 2026
Four informational webinars for stakeholders. 1 st webinar on scenario planning orientation for stakeholders. 2 nd – 4 th webinars will each examine key drivers of change to IATTC fisheries.	Jan 2027
Dissemination material and successful scenario building workshop with a diverse group of CPCs representatives (Commissioners, Heads of Delegation, Delegates), fishing industry members, CPC fisheries managers and scientists, and other relevant stakeholders (other RFMOs, IGOs, invited experts, and NGOs).	Feb 2027
Four plausible scenarios for what IATTC fisheries may look like in a given timescale of interest in the future considering the impacts of climate and environmental dynamics. Final report: Scenario Narratives	Feb 2027
Share results from scenario building workshop to 18th Meeting of the SAC and	Sep 2027

105th Meeting of the IATTC	
Dissemination material and productive governance workshop with key decision makers and stakeholders representing all CPCs and executed by the core IATTC team and facilitator.	Sep 2027
Online climate portal sharing scenario planning results, monitored indicators, and other climate tools (e.g., species distribution projection maps, climate vulnerability ranks, summaries of fisher and manager survey responses).	Mar 2028
Final set of prioritized governance, management, and monitoring recommendations to be shared with the Commission and its subsidiary bodies that promotes climate resilient adaptive management measures.	Sep 2028
Dissemination material and workshop reports summarizing stakeholder input from workshops to inform IATTC's management strategies.	Sept 2028
In addition to the project deliverables above, participate in communications, outreach, and engagement activities led by BCF staff and partners throughout the supported project.	Nov 2028

Project Timeline.

Feb 2026: Formation of Core/Broader IATTC Teams

Jun 2026: Hire scenario planning facilitator

Jun-Sep 2026: Orientation: Core and Broader Team learns about scenario planning and send out introductory memo on the scenario planning exercise. **Main output**: draft final project document.

Jun-Oct 2026: Scenario planning scoping consisting of project socialization with members and learn stakeholders' initial perspectives on drivers. **Main output**: Definitive final project document.

Oct 2026-Jan 2027: Exploration phase focused on major drivers of oceanographic, ecological/biological, and socioeconomic change. **Main output**: Report with drivers, polarity and uncertainty

Nov 2026-Mar 2028: Development of the online climate portal, adding results from other climate tools at first and providing scenario planning results as the process continues.

Feb 2027: Workshop on scenario building held in person. **Main output**: Final report: Scenario narratives

May-Sep 2027: Share results from scenario building workshop to 18th Meeting of the SAC and 105th Meeting of the IATTC

Sep 2027: Workshop on applications and governance, management, and monitoring recommendations held in person. **Main outputs**: Report with implications and strategies and Report on monitoring.

May-Nov 2028: Share updated recommendations at the 19th Meeting of the SAC and the 106th Meeting of the IATTC and other relevant subsidiary bodies (e.g., EBWG). The extended timeline aligns with the annual schedule of the SAC and Annual Meeting.

C. Expertise

Personnel.

Dr. Dan Crear will be the project principal investigator, coordinating all climate related work for the IATTC. Dr. Crear was the main architect of the IATTC Climate Change Workplan and framework and participated in the East Coast Climate Change Scenario Planning exercise during his prior position with NOAA. Dr. Jon Lopez is head of the Ecosystem and Bycatch Program at

the IATTC and has contributed to all of the IATTC climate work and has developed other climate related tools such as species distribution models and climate projections. Dr. Alex Aires-da-Silva, IATTC's Coordinator of Scientific Research, oversees all projects to ensure that the work can directly be applied to the Commission's needs. Drs. Jean-Francois Pulvenis and Brad Wiley are the Senior Policy Advisor and the Policy Officer, respectively, for the IATTC, and have many years of experience helping to frame policy for the IATTC. Mr. Sylvain Caillot is head of the Data Collection and Database Program and will assist with the development and programming of the communication products. Dr. Angel Saz Carranza will be the project's external facilitator and is Director of the EsadeGeo Center for Global Economy and Geopolitics in addition to being Full Professor of Strategy and General Management at Esade Business School. He has developed scenarios and facilitated scenario-exercises for international institutions, governments, and businesses. He has also published several scenario narratives and research papers on scenario planning, and he teaches scenario and foresight techniques in several universities across the world.

Organization Information.

The IATTC is an RFMO responsible for the management of tuna and tuna-like species within the EPO, which stretches from Canada to Chile and out to 150°W. The Commission currently consists of 26 CPCs, made up of 21 Members and five Cooperating Non-Members. The IATTC is mandated by the Antigua Convention, which entered into force in 2010, to ensure the long-term conservation and sustainable use of tuna and tuna-like species, as well as species belonging to the same ecosystem. Similar to other tuna RFMOs, the IATTC is a consensus seeking body, meaning for any new conservation and management measures to be adopted, all parties must agree. This type of system, although it may result in slower management decisions being made, leads to collaboration and compromise across Members. Unique among the tuna RFMOs, the IATTC has its own permanent scientific staff, which conducts science and research and provides policy advice and information to the Commission and its subsidiary bodies.

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