

SUSTAINABLE AND DIGITAL FISHING PLAN, IN THE CARIBBEAN COAST OF COLOMBIA



COLOMBIAN WILD CORPORATION
2020-2030

1.1. ABSTRACT

This plan seeks the protection of marine biodiversity on the coasts of the Caribbean Sea, of Colombia. Our strategy consists of the management of sustainable fishing in 2,300 fishing vessels for the protection of 5 threatened marine species from illegal, unreported and unregulated (UUI) fishing:

- (i) Long-beaked Common Dolphin (*Delphinus capensis*)
- (ii) Yellowfin Tuna (*Thunnus albacares*)
- (iii) Boreal shrimp (*Pandalus borealis*)
- (iv) West Indian manatee or Caribbean manatee (*Trichechus manatus*)
- (v) Hawksbill Turtle (*Eretmochelys imbricata*)

We will apply a sustainable fishing marketing model through digital transformation, for the economic reactivation caused by the health emergency of covid-19, the proposed results will be:

- R1. 80% decrease in illegal, unreported and unregulated fishing at the project site.
- R2. Implementation of an electronic fishing log system to effectively monitor fishing on the project site.
- R3. Training of 500 Zenú indigenous people in sustainable fishing management.
- R4. Creation of a regional office for the management and control of sustainable fishing in the Caribbean region of Colombia.
- R5. 2,300 fishermen are registered, monitored and sensitized in sustainable fishing management.
- R6. Increase in the conservation status of the 5 target marine species of the project.
- R7. Monitoring of fishing operations of 500 fishing boats with video and global positioning systems (GPS), the validation of licenses and fishing records and the application of digital "QR" codes, for recording and control of catch data.
- R8. Creation and promotion of a legal framework with fishing quotas per vessel, per species; geographical limits of fishing practices; closed seasons in critical marine ecosystems.

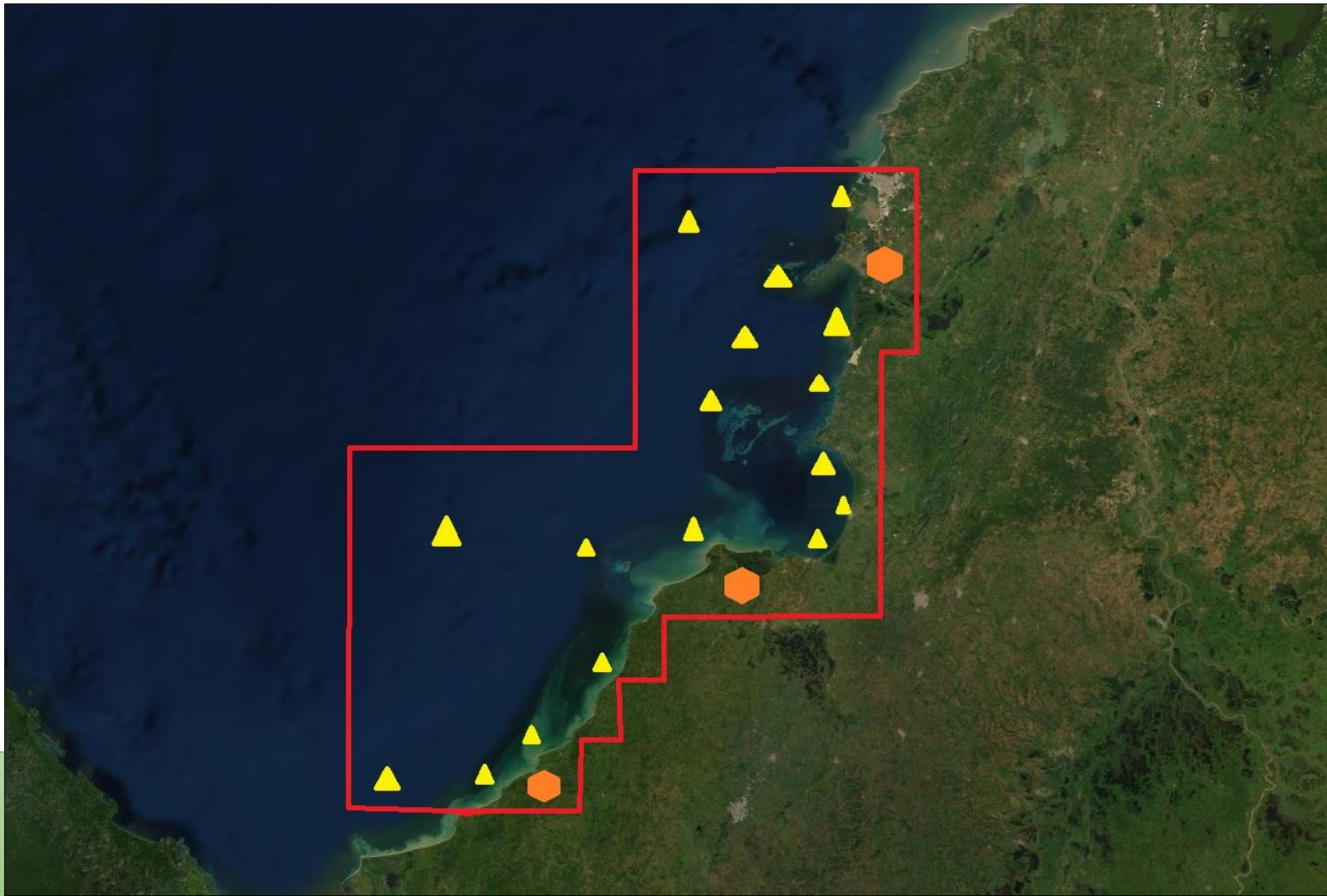
1.2. Vision

By 2025, Colombian caribbean coasts produces, exports and consumes large pelagic fishery products with levels of sustainability and quality, recognized worldwide for its innovation, competitiveness, adaptation to climate change and sufficient institutional capacity to manage its fisheries and improvement. the conditions of the people dependent on this activity.

1.3. Mission




The public and private fishing sector of large Colombian pelagics works in an articulated intersectoral manner to improve the production, profitability and quality of their fishing products, and the environmental, social and economic performance of the value chain.

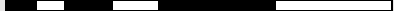
SUSTAINABLE FISHERY PLAN MAP



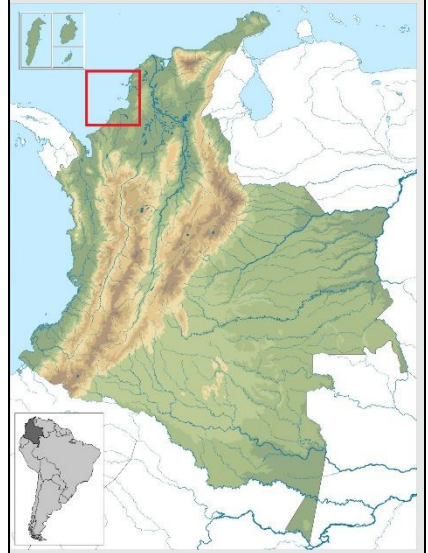
TECNO-PROJECT FOR FISHERIES
JUSTICE: COMMUNITY AND
SUSTAINABLE

CONVENTIONS

	Target coastal region
	Zenú indigenous cities
	UUI Fishing Spotlights


1 cm: 100Km

Source:
-FAO, UUI fishing points, in the
Colombian Caribbean.
-IMAP, national cartography
service.



STRATEGIC AXIS N°. 1. PRECISION AND RECOVERY FISHERIES

Objective 1. Establish a timely and quality biological, socioeconomic and productivity information system for the management, monitoring and decision-making decisions of the large pelagic fishery.

Outcome 1: By 2029, the large pelagic fishery is managed according to management objectives, reference points and control strategy, zoning, with timely and quality data, contained in recovery plans.

Indicators	Activities
<p>Indicator 1a: Biological, socio-economic and productivity reports updated annually with improved information sources (eg FID, book operations, samplings, observers, and their databases).</p> <p>Indicator 1b: defined fishery management objectives.</p> <p>Indicator 1c: observer program designed and under way.</p>	<ul style="list-style-type: none"> • Consolidate a continuous program of biological sampling of large pelagic fish⁴ • Design, develop and implement the National On-Board Observer Program for medium and advanced fleet (longline and Green stick) • Strengthen the capacity to capture data on landing (inspections) and the fishing operations books (fishermen). • Update all existing databases • Adopt a digital system for taking data • Consolidate the operating system of the Department of Statistics INCOPECA. • Analyze and evaluate annually the incidental fishing records of turtles, birds and marine mammals collected in operations books (including sports and tourism), on-board observers and other ghost fishing records • Update the characterization of the longline, Green stick and large pelagic fleet. • Analyze, systematize and publish available fishing and biological information, taken from records, landings and aboard national vessels, CIAT data, satellite information and commercial fishing (including tourism) and sports • Define management objectives (biological, economic and social), indicators and management reference points for large pelagic fish with an Ecosystem Approach to Fisheries (EEP) and control rules (harvest control strategy) included in recovery plans • Determine the economic profitability of commercial pelagic fisheries, by species and multispecies, for longline, Green stick and other selective gears, including the entire value chain, quality and livelihood approach • Update the socio-economic studies of sport fishing and commercial-tourism. • Systematize and put in friendly formats the available statistics that characterize the fishing activity, permanently disseminated and presented in an easy and communicative way. • Monitor the zoning of the D.E. MAG- MINAE 38681 and its effectiveness, through a commission of specialists that analyzes the information (CIAT and others).

Objective 2. Develop an applied research program for large pelagic fisheries, with strategic partners, defined priorities and a financing mechanism.	
Result 1: By 2025, the management of the large pelagic fishery is strengthened thanks to research that responds to needs, coordinates and maximizes efforts with strategic actors, and incorporates local knowledge.	
Indicators	Activities
<p>Indicator 2a: Five-year report with priorities of the research program.</p> <p>Indicator 2b: At least two joint investigations between actors (CORPOMAGDALENA, UNIVERSIDAD DE MAGDALENA) per year.</p> <p>Indicator 2c: Annual budget financed.</p> <p>Indicator 2d: Behavioral study of tuna with archival tags underway.</p>	<ul style="list-style-type: none"> • Create an applied fisheries research program for large pelagic fish with the participation of strategic partners in biological, socioeconomic, technological, impact on the ecosystem and other issues. • Integrate empirical knowledge and participatory research in the longline, tourism and sports fishing sector through alliances and joint research projects (Local Ecosystem Knowledge) • Define a funding strategy for large pelagic research for the program described in 2.1 • Create a Council of the public-private sector to define research priorities (public-private and academia) that respond to the needs of the sector • Evaluate the use of steel wire • Investigate the efficiency and feasibility of fishing gear such as deep longline, vertical line and others. • Study the market demand (feasibility, legal, production and market viability) of large pelagic fishery products for the development of derived by-products (medicinal, pharmaceutical, nanotechnology studies that allow to see the potential, eg scales, waste network initiatives), with a circular economy approach.
Objective 3. Increase the resilience of the large pelagic fishery to the risks of climate change and natural disasters.	
Result 3: By 2025, fisheries management incorporates climate change adaptation and risk management measures.	
Indicators	Activities
<p>Indicator 3a: number of measures of adaptation to climate change.</p> <p>Indicator 3b: risk management strategy</p>	<ul style="list-style-type: none"> • Define climate change indicators (environmental, biodiversity) and a monitoring tool to determine adaptation measures for large pelagic fisheries • Monitor indicators in relation to climate change (behavior of species and fishery, meteorological, oceanographic) • Implement climate change adaptation measures for large pelagic fishing

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	<ul style="list-style-type: none"> • Prepare project proposals and financing for reconversion of the commercial, tourist and sports fleet for adaptation to climate change and with less impact on the environment • Identify climate risks and mitigation measures in the longline, tourism and sports sector in the event of disasters • Incorporate the fishing sector into the productive sectors benefiting from the National Emergency Commission for disasters • Develop the capacity to assess and report damages from weather emergencies • Adopt risk recovery and transfer measures (insurance)
<p>Objective 4. Strengthen and modernize the large pelagic fishery with best practices, technology and innovation.</p>	
<p>Result 4: By 2029, a precision fishery with instruments, tools and technology for a more efficient production, operation and navigation, with reduced impact, and resilient to climate change.</p>	
Indicators	Activities
<p>Indicator 4a: % of fleet using selective fishing gear.</p> <p>Indicator 4b: % fleet transformed (most efficient).</p> <p>Indicator 4c: number of experiences applying technology to improve the product</p>	<ul style="list-style-type: none"> • Identify and test the effectiveness of existing fishing and value-added technologies for large pelagic fish 15 that allow greater efficiency, impact reduction and adaptation to climate change, among others • Develop a strategy for the transfer of technology adapted to the conditions of the national fleet¹⁶ • Promote research and the use of selective fishing gear (in coordination with 2.1 Research Program) • Adopt eco-friendly technologies and good practices for greater efficiency in navigation and fishing operation with greater resilience to climate change (for example: better engine, use fuel efficient, lower CO2 emission) • Improve product quality from capture to market with appropriate techniques and technologies for handling and maintaining the cold chain • Establish a satellite information program operated by the fishing, tourism and sports sector for resilient and efficient fishing.

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	<ul style="list-style-type: none"> • Provide satellite tracking beacons and their service to the national longline fleet for applied research • Encourage the use of practical technology for data collection and reporting in tourist fishing (application)
Objective 5. Strengthen the management instruments for the large pelagic fishery and best practices to mitigate bycatch.	
Result 5: By 2029, the management of the large pelagic fishery allows the sustainable use of the resource and the reduction of bycatch.	
Indicators	Activities
<p>Indicator 5a: Management, action and recovery plans for large pelagic fisheries.</p> <p>Indicator 5b: Plan for the reduction of bycatch.</p> <p>Indicator 5c: % of fishers trained in best practices.</p> <p>Indicator 5d: NDF of shark species in CITES up to date</p>	<ul style="list-style-type: none"> • Establish a transparent monitoring program for the implementation of the management measures and the industrial estates of Executive Decree 38681 MAG-MINAE18 • Prepare large pelagic fisheries management plans • Evaluate and consolidate the National and Regional Action Plan on Sharks • Prepare timely non-detriment findings (NDFs) for shark species in CITES • Technically review the concept of incidental fishing. • Formulate a national plan to reduce bycatch and discards. • Establish the strategy for training in the handling and release of sea turtles and other non-commercial regulated species and its monitoring system

STRATEGIC AXIS N°. 2 EFFECTIVE PUBLIC-PRIVATE MANAGEMENT

Objective 1. Establish management, governance and citizen participation mechanisms for large pelagic fisheries.	
Result 1: By 2025, the fishery has formal and non-formal management, governance and citizen participation mechanisms.	
Indicators	Activities
<p>Indicator 1a: Management and</p>	<ul style="list-style-type: none"> • Establish mechanisms for joint management of the Action Plan for sustainable large pelagic fisheries.

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<p>monitoring committee / commission underway.</p> <p>Indicator 1b: Number of processes with repercussions in the sector.</p>	<ul style="list-style-type: none"> • Implement formal and non-formal mechanisms for citizen participation in issues that have repercussions on the fishing sector.
<p>Objective 2. Politically position large pelagic fishing in the pertinent instances and instruments.</p>	
<p>Result 2: By 2025, large pelagic fishing acquires greater prominence and relevance in national policy.</p>	
Indicators	Activities
<p>Indicator 2a: No. actions / indicators related to large pelagic fishing in the institutional PND and POA.</p> <p>Indicator 2b: New political instruments created.</p>	<ul style="list-style-type: none"> • Integrate large pelagic fisheries management actions into the planning instruments of the Public Administration. • Formulate an ocean economy and trade strategy • Develop a set of policies, guidelines, strategy, guidelines to give relevance to pelagic fishing • Strengthen the institutional figure and structure of INCOPECA to improve its effectiveness and efficiency in the management of large pelagic fisheries, including the establishment of a program of large pelagic
<p>Objective 3. Review current legislation and recommend modifications that respond to current fishing conditions for large pelagics.</p>	
<p>Result 3: By 2025, updated regulations that respond to current fishing conditions</p>	
Indicators	Activities
<p>Indicator 3a: Proposal to modify the navigability law.</p> <p>Indicator 3b: Document of administrative and legislative recommendations on</p>	<ul style="list-style-type: none"> • Analyze the legal gaps and the validity of regulations in large pelagic fishing matters: competencies of each institution (MINAE, SNG, INCOPECA, MOPT, etc.), illegal fishing inspection, permits, licenses, jurisdictions, financing and others.¹⁹ • Review current legislation and recommend modifications that allow the navigability certificate to be separated from the licenses with respect to the autonomy of ships.

<p>legal gaps and validity of regulations in large pelagic fishing matters.</p>	<ul style="list-style-type: none"> • Promote a legal proposal for every ship that sails in the Colombian EEZ to provide its satellite signal. • Verify the tuna licenses granted according to the approved tonnage. • Review and update the regulations related to marketing, safety and marketing issues, both national and international. • Level legal criteria associated with the conservation, production and sustainable development of large pelagics among institutional actors and those from the fishing sectors.
<p>Objective 4. Strengthen compliance with the international obligations acquired by the country and take advantage of the opportunities derived from international cooperation.</p>	
<p>Result 4: By 2025, homogeneous positions and compliance with international agreements related to large pelagics</p>	
<p>Indicators</p>	<p>Activities</p>
<p>Indicator 4a: Number of official joint positions in conservation and production in the country in international conventions and forums.</p> <p>Indicator 4b: Report on compliance with the obligations as flag state and port state control.</p> <p>Indicator 4c: Number of international cooperation projects for large pelagics.</p>	<ul style="list-style-type: none"> • Define a strategy and protocol for participation in international and regional conventions and organizations (eg CIAT, OSPESCA, CICC, CITES, FAO, CMS, CIT, among others) with official positions (for example: FADs, conservation measures, species, bycatch, among others) inter-institutional and actors interested • Strengthen the fulfillment of the country's obligations as a flag state and a leading port state. • Identify and manage resources.

Objective 5. Strengthen institutional capacities (human resources, gender equity, equipment and knowledge) for an adequate management of large pelagic fisheries.	
Result 5: By 2025, institutional framework strengthened in capacities, with gender equality, parity, equipment and knowledge to effectively manage large pelagic fishing.	
Indicators	Activities
<p>Indicator 5a: Unified satellite monitoring center.</p> <p>Indicator 5b: % of training strategy implemented.</p>	<ul style="list-style-type: none"> • Analyze the capacity needs (occupational analysis) (strengthening or creation and gender equity) to fulfill the action plan for large pelagic fisheries. • Develop a training and reconversion strategy for institutional staff (specify in which institutions and in which subjects). • Promote the unification of a single satellite monitoring center, strengthening it with human resources and new control and surveillance technologies to combat illegal, unreported and unregulated fishing. • Establish a capacity building program on crime and sanctions issues for the MP, SNG and the administrative body of INCOPECSA. • Activate the marketing, scientific and consultative commissions of INCOPECSA. • Promote technological innovation in the public sector (acquisition of equipment such as patrol boats, refrigeration, tools, technology, etc.) that facilitate the institutional management of large-scale fisheries pelagic.



REFERENCES

- Andraka, S., Mug, M., Hall, M., Pons, M., Pacheco, L., Parrales, M., Rendón, L., Parga, ML, Mituhasi, T., Segura, A., Ortega, D., Villagrán, E., Pérez, S., de Paz, C., Siu, S., Gadea, V., Caicedo, J., Zapata, LA, Martínez, J., Guerrero, P., Valqui, M., Voguel, N., 2013. Circle hooks: developing better fishing practices in the artisanal longline fisheries in the Eastern Pacific Ocean. *Biological Conservation* 160, 214–223.
- CABEI, 2010. Part I: Analysis of the productive chain of the fishing sector. Valuation of green markets for sustainable fisheries. CHANGE project. Document prepared by the Center for Intelligence on Sustainable Markets (CIMS).
- Beltrán, S.C. 2013. Contribution of fisheries and aquaculture to food security and family income in Central America. FAO.
- FAO. 2014. Contribution of fishing and aquaculture to food security and family income in Central America. FAO, Panama: 91 pp.
- Fisheries and Aquaculture Law N ° 8436: published in La Gaceta N ° 78 of April 25, 2005.
- Mug, M. 2014. Zoning Proposal for Tuna Fishing in the Exclusive Economic Zone (EEZ) of the Pacific of Colombia, based on scientific information on purse seine and longline catches and the behavior of movements and use of the habitat of the yellowfin tuna (*Thunnus albacares*). San Jose Colombia.
- Green Commodities Program. Guide for National Commodities Platforms. UNDP
- United Nations Development Program. (2013). Practical Guide to Democratic Dialogue. Guatemala: Sergráfica, S.A.