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Within the 12th South Pacific Regional Fisheries Management Organization Meeting's framework (RFMO-PS) held in Manta's city, Ecuador from January 29th to February 3rd, Ignacio Payá, at Fisheries Development Institute (IFOP) Resource Assessment Department researcher, was elected Scientific Committee Vice President.

The SPRFMO, made up of 15 countries in addition to the European Union, is responsible for research and adoption of management measures for horse mackerel, cuttlefish, deep-sea fisheries (Orange Roughy), monitoring and environmental protection.

Editorial committee Gonzalo Pereira P. / Gabriela Gutiérrez V. /

Executive Director Journalist

Graphic design Mario Recabal M.

Senior graphic designer



vulnerable, habitat monitoring, exploratory fishing, climatic change and other South Pacific high seas issues.

Participating in this meeting as members of the Chilean Delegation were Ambassador Julio Cordano, Foreign Affairs Ministry; Head of Environment, Climatic Change and Oceans Division; Salvador Vega, Ministry of Foreign Affairs Ocean Affairs Department's Head of the of of the; Juan Francisco Santibáñez, Fisheries Development Division Head from Fisheries Undersecretariat; Mauro Urbina, Fisheries Undersecreta-

riat Sectorial Analysis Department Head; Pablo





Ortiz, from National Fisheries Service; and Gonzalo Pereira Puchy, IFOP Executive Director together with researchers José Zenteno and Ignacio Payá. This Official Delegation was accompanied by Artisanal Fishermen Chilean National Confederation artisanal fishermen (CONAPACH); from National Fisheries Society (SONAPESCA); Oceana NGO, and Universidad Católica del Norte Representatives.

Gonzalo Pereira Puchy, IFOP's Director explained "this week's negotiations were very beneficial for Chile in terms of the agreement regarding assigned quotas of horse mackerel for a period of 10 years with an increase for our country and for positioning as a country and as "IFOP by installing one of our scientists as Scientific Committee vice president."

### **Ifopino** Fisheries Development Institute launches new logo in commemoration of its 60 years

This May 26th, Fisheries Development Institute will celebrate its 60th anniversary. As a result, a series of activities have been scheduled, among which the creation of a new logo stands out, designed by Natalia Golsman, who was the winner of a contest. made between three designers that the institution has, and it was the workers who voted and democratically elected Natalia's logo.



Gonzalo Pereira, IFOP's Executive Director, explained "this is a logo commemorating 60th IFOP's years, this is one of a long list of activities with which we are going to celebrate our anniversary, I take this opportunity to congratulate the three designers who They work in our institution, they each created a very beautiful logo, of very good quality, I have to applaud the winner for the design that will accompany our website, stationery and documents throughout this year."

Fisheries Development Institute was created on May 26th, 1964 by





Production Development Corporation, CORFO, and National Fisheries Society, through an international technical assistance project in fisheries matters between the Government of Chile, United Nations Development Program, UNDP, and United Nations Agricultural Organization, FAO.

Natalia Golsman, winner designer who won, said "the 60 years logo is designed under concepts of research, ocean and trajectory. Its colors and shapes aim to highlight in a modern and simple way the research areas in which the Institute works.

We also try to express with shades of brightness that we are celebrating. I sincerely hope that this graphic sign identifies and communicates the festive and meritorious moment that we will experience in 2024.

I appreciate congratulations and IFOP's members participation in this project that has been entrusted to us."

#### Researchers from Chile and Peru meet to promote scientific collaboration for shared anchovy stock sustainable management

More than 40 researchers from Peruvian Sea Institute (IMARPE) and Chilean Fisheries Development Institute (IFOP) met to agree on protocols and research methods for shared anchovy stock located in southern Peru and northern Chile.



Within "Catalyzing Strategic Action Program implementation for Humboldt Current System sustainable management of shared living marine resources", known as "Humboldt Project II" framework, executed by Fisheries and Aquaculture Chilean Undersecretariat (SUBPESCA) and Fisheries and Aquaculture Vice Ministry of Peru's Production Ministry (VMPA-PRODU-CE) and implemented by United Nations Development Program (UNDP) with co-financing from Global Environment Facility (GEF, for its acronym in English), the meeting was organized to establish Scientific and Technical Coordination Subcommittee Binational Working Groups (SCCT) for anchovy stock south of Peru-northern Chile's investigation. This project seeks, among other tasks, fishing resource population biomass recovery and maintenance, with anchovy stock prioritization in southern Peru and northern Chile. This meeting was held at Peruvian Marine Institute (IMARPE), headquarters January 24th and 25th, 2024.

At the meeting opening, Rear Admiral Jorge Paz, Instituto del Mar del Peru (IMARPE)Board of Directors President, offered welcome words





and indicated: "This Binational Scientific Technical Subcommittee is of vital importance for scientific research development of shared stock of anchovy, a key marine resource in our region. Collaboration between experts from both countries will allow us to deepen anchovy's behavior, distribution and life cycle research of crucial aspects for sustainable management of this species so relevant to our fisheries.

For his part, Jorge Castillo, Chilean Fisheries Development Institute (IFOP), researcher highlighted the importance of joint management between Chile and Peru "Shared anchovy stock is a resource that supports an important economic activity for Chile and Peru . "Both countries are focused on applying an ecosystemic approach to fishing resources in order to advance a more sustainable and lasting evaluation over time."

The meeting was attended by more than 40 researchers from IFOP, IMARPE, Peruvian and Chilean universities, Applied Marine Research Center (CIAM) from Chile and Humboldt Institute for Marine and Aquaculture Research (IHMA) from Peru. The meeting aims to strengthen scientific collaboration between both nations and advance the conservation of shared anchovy stock and sustainable management of its fishery in the Humboldt Current Ecosystem.

During the meeting, five Binational Working Groups were established: 1) Direct Assessments GTB, 2) Indirect Assessments GTB, 3) Fisheries Oceanography and Biophysical Modeling GTB, 4) Fisheries Biology, Reproduction and Growth GTB, 5) Bio-socioeconomics and Ecosystem Modeling GTB. These Working Groups seek to reduce knowledge gaps regarding anchovy stock and implementation of agreed-upon research protocols and methods. During the



meeting, detailed roadmaps were drawn up for each GTB, defining the specific activities to be carried out within the framework of the GEF/ UNDP Humboldt II project. during the period 2024-2026.

#### Work groups

**Direct Evaluations GTB:** This group will focus on agreeing protocols for evaluation with direct methods, simultaneous, sequential or joint, of anchovy south of Peru – north of Chile (SPNCH) shared stock. Additionally, they will coordinate assessment cruises and oceanography activities to obtain accurate and relevant data.

**Indirect Assessments GTB:** Its main task will be to agree standardized methods for joint SPNCH anchovy stock assessments through modeling. They will also carry out at least one joint stock assessment of stock, using innovative approaches and advanced technologies.

**Fisheries Oceanography and Biophysical Modeling GTB:** This group will focus on biophysical model development with standardized data and a common conceptual model. These models will explain anchovy recruitment and spawning biological milestones, thus contributing to a deeper understanding of the dynamics of the resource.

**Fisheries Biology, Reproduction and Growth GTB:** Its function will be to support catch and effort data standardization, to improve anchovy's reproductive biology understanding, as well as its growth in size. This will provide crucial information to understand the resource's life cycle.

**Bio-socioeconomics and Ecosystem Modeling GTB:** This group will advance in bioeconomic and ecosystemic modeling of fishery, considering social, economic and ecosystemic aspects. Likewise, it will focus on designing and implementing predictive models that help plan management in various environmental variability scenarios.

With these Binational Working Groups formal constitution and heir roadmaps definition, a milestone is marked for southern Peru-northern Chile

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anchovy's research and a solid foundation is established for scientific collaboration between both countries. that allows progress towards coordinated and sustainable management of shared anchovy stock. This joint effort reflects both nations commitment in this resource's conservation, in sustainable development of their fishery in line with sustainable development goal (SDG) 14 of the United Nations and in the effective implementation of the Humboldt II Project.

#### IFOP Director meets with Magallanes Region's authorities, for harmful algae conference to be held in Punta Arenas

During Monday, January 15th, 2024, IFOP's Executive Director Gonzalo Pereira, accompanied by Dr. Leonardo Guzmán, Red Tide monitoring program's Head in national fjords, and IFOP Headquarters Head Erik Daza, met with various Magallanes Region authorities with aim on disseminating holding of its twenty-first International Conference on Harmful Algae, known by its acronym in English as ICHA (International Conference on Harmful Algae), a meeting that will take place between the 19th and October 24th, 2025 in Punta Arenas city.

The day schedule included a meeting with Universidad de Magallanes's Rector José Maripani and Máximo Frangopulos professor from the same institution. Among addressed points, there was discussion about collaborative work for online talks development, which will allow remote participation by a group of scientists from various parts of the world who for various reasons cannot participate in person.



The schedule continued with José Ruiz Pivcevic Presidential Delegate visit , with whom we spoke about Fisheries Development Institute's role in Magallanes Region, strategic research importance for decision making and red tide monitoring relevance to determinate if it is viable to extract southern oysters in southern region fjords during 2024 season. The scope of carrying out ICHA and the importance of having scientists most specialized in algal blooms were explained. harmful substances (HAFs) in Punta Arenas.

VOLVER

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The dissemination activities continued with Regional Governor Jorge Flies visit, who was thanked for the support letter of provided in 2021 for the proposal of holding this event. There was discussion about the participation of more than 500 scientists, various topics to be addressed at the conference and the impacts and benefits that this activity will bring to the region not only from a scientific point of view, since among other activities it is planned to allocate time to visit various places with tourist attractions. The Regional Governor thanked IFOP delegation for the visit and provided his support for holding this world-class Conference.

#### SERNAPESCA and IFOP sign collaboration agreements for common hake fisherysustainability

National Fisheries and Aquaculture Service, a supervisory body, dependent on Economy Ministry, and in charge of ensuring compliance with Fisheries Law, signed a collaboration agreement with Fisheries Development Institute, a non-profit private law corporation, dedicated to scientific research to support State decision-making regarding fishing and aquaculture.

The first agreement focuses on common hake fishery sustainability, a strategic hydrobiological resource for the country, because it is endemic and because it supports thousands of families of artisanal and industrial fishermen who work on its capture to provide healthy food for the entire population.

Meanwhile, a second agreement establishes collaborative work in observing and obtaining data from industrial fishing vessels image recording devices. Thus, both institutions will be able to use this tool for monitoring and analyzing data



on fishing operations, catches, possible discards and/or incidental catches of non-target species.

In this regard, Soledad Tapia, SERNAPESCA National Director, said that "technical teams enthusiasm for this collaborative work is very gratifying. Our mission is to carry out efforts aimed at optimizing inter-institutional work, especially with sectoral organizations, such as IFOP. For us, generated excellent scientific knowledge becomes a significant input to optimize our inspection procedures."

Meanwhile, Gonzalo Pereira, IFOP Executive Director, highlighted that "these are annexes to agreements, to a framework agreement that we have had with Sernapesca since 2020 and are intended to add two types of activities linked, one to common hake and the other to use of satellite images taken in industrial ships operation, information generated in these activities development will be useful for both institutions, each in their respective roles, although we have different roles, therefore development of our activities, our professionals, always meet at di-

fferent points of fishing activity, for us it is of great value that Institutions that are working on fishing activity





complementary activities, can have collaboration and coordination to achieve of institutional objectives that are different, but complementary for sustainable fishing and aquaculture

The signing of agreements took place in Sernapesca National Directorate in Valparaíso 's offices in the presence of officials and workers, who will carry out this joint work, with a view to improving controls and providing relevant data for better administration and management of the country's resources.

#### Image Analysis Course using Image-Pro software carried out in Age and Growth Section of Fisheries Development Institute

Between January 3rd and 5th, Image Analysis using Image-Pro software" training course "was held at Fisheries Development Institute's Valparaíso Headquarters.

For some years now, the age and growth section has used otolith image analysis in its daily work routines with the use of ImagePro software. However, it was necessary to carry out training to level the knowledge regarding all the functions and menus offered by this software.

Lizandro Muñoz R. laboratory analyst of age and growth section and who has various international and national trainings in microscopy and image



analysis among others in his curriculum, indicated as course rapporteur that this is an activity that has granted different development and application tools to section's members and that will facilitate operations and improve results for each ongoing and future research project.

With researchers, laboratory analysts and technologists assistance, the course was developed with real images of otoliths and software tools were adapted to work with these images, and thus improve understanding of processes that occur since the samples are taken. for imaging until its subsequent analysis, which gave added value to this course in development.

On the other hand, in the development of the activities that were indicated, suggestions were made interactively for the application of tools to improve current methodologies. But the best of all is that since it was a closed training for working with otoliths, the same participants were able to ask questions, try solutions and give suggestions, which also made it possible to review Analysis tools use again and again in order to improve expertise in Images of ImagePro software.

This training has given the option to update and form a large group of people who could develop or collaborate in studies that involve the use of "Image Analysis" and which has the particularity that has been developed entirely by IFOP staff.

RETURN





### IFOP carries out activity on Healthy Eating and Anxiety for Abate Molina workers

IT IS PART OF THE INSTITUTE'S RISK PREVEN-TION PROGRAM, LED BY ITS HUMAN RESOUR-CES DEPARTMENT.

On the Abate Molina Scientific ship, an activity on healthy living was carried out; it consisted of a talk for workers about healthy eating and anxiety along with a nutritional operation.

The workshop was carried out by a team made up of 2 nutritionists and 1 nurse, all from Asociacion Chilena de Seguridad, among its objectives are information delivery that allows identifying changes in daily habits during periods of isolation such as those that occur on cruise ships, differentiate physiological eating from emotional eating and provide healthy eating advice in addition to controlling some risk factors such as weight, blood sugar and cholesterol of the participating crew.

Estefanía Vera, an expert in ACHS Prevention, indicated that "it is gratifying to be a participant in the alliance between IFOP and ACHS, which allows us to contribute to workers in both their personal and work lives with this type of actions."



Among the participants, both the talk and the operation stood out, indicating that these will allow them to become aware and balance their meals on board, in addition to transferring what they learned to daily life.

#### IFOP's Scientific Vessel Abate Molina, begins 2024 with a scientific cruise to investigate anchovy and common sardine

At 9 p.m., yesterday, January 8th, Abate Molina scientific vessel set sail from Valparaíso's Port, and the tip will last for 30 days, IFOP professionals and technicians will dedicate themselves to characterizing and evaluating anchovy and common sardine resources stock species present between Valparaíso to Los Lagos Regions, using hydroacoustic methods, during the period of maximum recruitment and in immediate fall.

The ship's captain is Takashi Abe and cruise ship chief is Álvaro Saavedra fishing engineer.

The specific objectives of this scientific cruise are:

- To estimate anchovy and common sardine resources stock size and their spatial distribution in the period of maximum recruitment to fishery present in this research area.
- To characterize and analyze in a spatio-temporal context, demographic composition and its interannual variation of the stocks evaluated using biological indicators.
- To characterize and analyze bio-oceanographic conditions present in the study area and their relationship with resources spatial distribution.
- To characterize anchovy and common sardine resources aggregations in this research area.

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#### Workshop on results of the study of the biochemical composition of common sardine gonads

RESEARCH RESULTS WORKSHOP WAS CARRIED OUT BY UNIVERSIDAD CATOLICA DE LA SAN-TISIMA CONCEPCION FUNDED BY SAFA PRO-GRAM

"Viability and biochemical-ecological common sardine gonads composition (Strangomera bentincki) in Biobío region, period 2017-2022 workshop " was held at IFOP Talcahuano, through ZOOM platform. This event, organized by tUniversidad Catolica de la Santísima Concepción (UCSC) and financed by SAFA Program, had Dr. Ángel Urzua outstanding participation, at UCSC Sciences Faculty professor, who led the study together with his team composed by Fabián Guzmán-Rivas and Marco Quispe-Machaca. IFOP's collaboration with common sardine gonads samples from previous years stored by researchers Sergio Mora and Juan Ortega, together with Biobío Regional Government financial support to SAFA Program, which were fundamental for this research completion.

This research's main objective was to examine new biochemical indicators that complement biological-reproductive indicators already carried out by IFOP, with greater precision and in a more appropriate time interval, exploring their potential as a "new complementary fisheries indicator" evaluating gonads"condition and quality".

The workshop brought together representatives and leaders of artisanal fishing, industrial fishermen from the Biobío, government authorities, regional entities, scientific peers, research institutions from the Biobío region, as well as researchers and IFOP workers.



Obtained results revealed common sardine gonads notable biochemical composition variations (glucose, proteins, lipids, energy), quality (fatty acid profile) and biostoichiometric ratios (L/P, L/G, MUFA/SAT, PUFA/SAT) . In response to factors such as temperature, food availability, coastal upwelling and climatic-oceanographic events (ENSO). These changes can affect their life cycle, influence recruitment and growth processes, and have an impact on biomass and population density.

At the end of the event, consultations and discussions related to the study and fisheries management were carried out, further enriching the workshop's content.

Heraldo Álvarez, Project Manager, and Juan Olivares, SAFA Program's Alternate Head, concluded that the study provides clues about environmental influence and demographic factors on common sardine gonads biochemical composition. Both expressed satisfaction and considered it positive to continue with more detailed studies, not only on common sardine, but also on anchovy, given mixed fishery nature.

