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the standard of an international scientific vessel in terms of emissions.

So, what is expected for the future?

-The first thing is to thank transversal support we received by allocating resources and carrying out this remodeling. Thanks to the efforts of many, especially our Marine Operations personnel, we finished it successfully, but the change of the engine and

some equipment that we are evaluating is still pending.





On April 13th, remodeled scientific vessel Abate Molina arrives in Valparaíso

AFTER SIX MONTHS OF SHIPYARD WORK IN PUERTO MONTT, THE SCIEN-TIFIC VESSEL ABATE MOLINA RETURNS COMPLETELY RENEWED. THE SHIP, WHICH FOR MORE THAN 32 YEARS HAS BEEN FISHERIES RESEARCH EMBLEM IN CHILE, UNDERWENT A PROFOUND MODERNIZATION OF ITS SYSTEMS AND ACCOMMODATIONS

Abate Molina scientific vessel is operated by Fisheries Development Institute (IFOP) and carries out seven annual fishing and oceanographic research cruises between Arica and Chacao channel, involving up to 240 days of navigation.

Luis Parot, IFOP executive director, expresses the institute's great satisfaction for this initiative successful completion, although he anticipates that modernization of the engine and other equipment is still required to meet

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-For a long time there has been a request for a new scientific ship, to replace Abate...

-Strictly speaking, it is not a question of decommissioning Abate Molina, but rather having another modern vessel, with new capabilities, and one that can operate without Abateś restrictions. We must do some scientific cruises in leased vessels that operate in the same fishery, which is not recommended, because IFOP must jealously guard its independence and the trust of all actors.

"That is to say, will Abate remain operational?"

"We hope so." There is a growing demand for environmental, ecosystem, and climate issues knowledge, and this requires research and scientific ships available at an affordable cost, conditions that Abate fulfills very well. The ship can continue executing cruises from Valparaíso to the north and the rest of the time it would have available, execute cruises for universities and other centers interested in researching the ocean and its resources. There's a debt there that we can



help pay off. Investing in the Abate continues to be very good for research and for Chile.

But, what is the new ship's project?

-2022 Budget Law assigned IFOP the task of executing this project in its initial stage and we are making progress: we have already defined requirements, on May 15th we will raise international tender for design and construction, and on August 15th the bids will be received.. With them in hand and once evaluated, they will be presented to the Ministry of Economy and the Budget Directorate so that we can be authorized to award the construction. In any case, we will take the protection of being able to do so until January 15th, 2023.

"What kind of ship are you looking for?"

-Essentially, a modern scientific vessel for fishing and oceanographic research, with state-of-the-art equipment, that facilitates science on board, that can navigate properly along the entire coast to Magallanes, and with a low operating cost. If all goes well, she should be active in the first half of 2025.

"What is the useful life left to Abate?"

-Abate Molina is reconditioned. However, modernization of engines and other equipment is required to meet an international scientific standard for vessel emissions.

The Abate has a conventional diesel engine that, although in good condition, does not meet noise standard (euro 309), and some equipment such as fishing winches and electrical and electronic boards need to be replaced by modern equipment that takes up much less space. and require fewer repairs and less maintenance.

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"What, then, is the ship's diagnosis?"

-The Abate is the same as an old car that is kept in very good condition, and can continue to operate for a while longer. Now, like an old car, it is somewhat obsolete if we consider the requirements of current fisheries and oceanographic research, and the demand for more and more complete research to understand the impacts of climate change on fishery resources and ecosystems.

Source: La segunda

IFOP signed a collaboration agreement with Flanders Marine Institute, Belgium

IFOP Fisheries Development Institute, represented by Luis Parot Donoso its Executive Director, signed a collaboration agreement with Flanders Marine Institute, Belgium, which was represented by the Governor of West Flanders, Carl Decaluwe, and by its Director, Dr. Jan Mess.

This Agreement purpose is to promote cooperation between the two institutes, through researchers exchange and historical oceanographic and biological data analysis, which allow a better understanding climatic change effects on fishery resources and marine ecosystems.

The signatories agree to facilitate joint initiatives implementation by providing unique opportunities for researchers and analysts, including internships for both, as well as the possibility of internships for postgraduate students.



On behalf of IFOP, in addition to the Executive Director, Dr. Carlos Montenegro, Fisheries Assessment Department head, Dr. Jaime Letelier, Oceanography Department head, and Dr. Jessica Bonicelli, specialist in plankton dynamics, participated.

Luis Parot pointed out that it is a great opportunity for IFOP to expand its links with European fisheries and oceanographic research institutes. "We are interested in sending our researchers to perfect themselves and, also, take advantage of the experience that, in this particular case, they have in identifying plankton. IFOP is executing a program to digitize over 6,000 water samples that are part of its data heritage, and that we hope to soon have available for science".

IFOP participates in the first 2022 South Pacific Fisheries Management Organization coordination scientific committee's meeting

On March 21rst, the first 2022 International South Pacific Fisheries Management Organization Scientific Committee (www. sprfmo.org)coordination meeting was held, chaired by Dr.

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James Ianelli. A telematic meeting that involved different time zones by country, in the case of Chile it was at 10 p.m. Ignacio Payá IFOP researcher, was the Chilean delegation spokesperson for Chilean scientific work coordination to be carried out during 2022 in jack mackerel and cuttlefish fisheries.

Payá mentions that "The agreed work plan includes monthly coordination and advancement meetings of scientific analyzes that will be presented at the annual meeting of the scientific committee in September 2022. In jack mackerel, stock assessment workshop ("benchmark") stands out. of new biological parameters effects (age, growth, natural mortality and maturity) on stock status and biologically acceptable catches. These new parameters are the result of several years of IFOP research applying new techniques for assigning ages to fish. While in the cuttlefish the main topics are the genetic studies of the phenotypes that reach different maximum sizes (small, medium and large), fishing effort analysis in the convention zone, fisheries monitoring and a workshop to analyze different stock assessment methods."





IFOP held "Coastal circulation and larval dispersion between management areas and protected areas in the Great Bay of Coquimbo" Seminar

Within IFOP developed Under Management Areas Regime Fisheries Monitoring Program framework, addressed by, "Coastal circulation and larval dispersion between management areas and protected areas at the Great Coquimbo Bay" seminar. Catherine González, Semi-Senior Researcher and coordinator of the event, pointed out: "The purpose was to share advances in the understanding of coastal circulation and larval dispersal in an area of high value for benthic fisheries and marine conservation, promoting collaboration among various institutions researchers. On the occasion, researchers Andrés Sepúlveda, Eduardo Flores and Sergio Rosales, from the Universidad de Concepción and UCN, presented development of hydrodynamic models advances in the interest. area. Subsequently, Gonzalo Olivares from 3SE, Catherine González from IFOP and Sebastián Insunza from Universidad de Concepción presented advances in the understanding of larval dispersal of benthic species and connectivity between fishing areas".

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Katerina Varas, local GEF-FAO Marine Governance project coordinator highlighted the importance of this seminar for generating dialogue spaces between researchers and the need to disseminate this information to local actors and authorities. for their consideration in marine spatial planning. The seminar was followed by a discussion between researchers in which the need to reduce the knowledge gaps on the larval biology of benthic species in Chile was highlighted, seeking basic financing to advance basic science, input for larval dispersion models. In addition, the need for collaboration between researchers was reinforced, making available hydrodynamic models generated by different work groups, and the data on which they are built, for a better understanding of coastal circulation in the Coquimbo region and at national level.

Álvaro Wilson, IFOP Semi-Senior Researcher, pointed out that: "From the management point of view, our interest in using these modeling and simulation tools, which, together with a better understanding of the biophysical mechanisms and processes involved in transport and larval dispersal, they are helping us to identify, for example, which sectors of the coast could be behaving as source or sink areas for larvae, as well as allowing us to determine the possible existence of sites that act as critical



nodes of connectivity between local populations or even define for some benthic resources (such as loco, locate, among others), "stock units" at a different geographic scale than the one currently considered. Advances in this line of research could provide key knowledge for the sustainability and management of this type of fishery resources...".



Finally, Luis Ariz, Management Areas Section Head, highlighted that: "In benthic species populations, which have wide geographic coverage, simulations using coupled biophysical models point to knowledge of the connectivity between spatially explicit subpopulations, with a view to collaborating in improving management decisionmaking. Likewise, an adequate knowledge of primary life cycles of species of interest will allow a better characterization of the particles that are subjected to simulations in their trajectories in the water. Therefore, seminars such as the one held are relevant because they enhance cooperation and synergy between researchers who work on issues that are important for fisheries management."



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An IFOP professional participates in international Scientific Diving course

Alex González Villarroel, Semi-Senior Technologist, assigned to IFOP Management Areas Section, participated at "International Scientific Diving Course Chile 2022", which was developed under"CMAS" World Confederation of Underwater Activities for the CASD Advanced Scientific Diver level established standards it was taught by Underwater Heritage "VALPOSUB"Research and Development Center, jointly with San Ignacio del Huinay Foundation, through CMAS America Zone and FEDESUB-Chile Scientific Committee, under CSDI supervision, World Confederation of Underwater Activities America Zone and Secretary of the CMAS Scientific and Sustainability Committee María Clotilde Zeckua Ramos Scientific Committee Director.

Alex González pointed out that: "The course contents covered international scientific

diving standards, considering safety and accident prevention, regulatory aspects and field activity general knowledge. The matters dealt with were related to diving work carried out by technologists who belong to Management Areas Section. With course approval, Advanced Scientific Diver license (CASD) is obtained. This certification empowers to guide research teams and manage underwater research programs, maintaining training and certification standards that allow replicable research development, ensuring that all scientific dives are carried out maximizing divers protection against injuries, illnesses and/or or accidents.



Alex added that: "The course approval is an important milestone in my personal development and improving my technical responses in my work, for which I am very grateful for all support and facilities provided by IFOP".

Luis Ariz, IFOP Management Areas Section Head: "Diving in marine research is of invaluable importance in in situ underwater observations and measurements, which would

not be possible to carry out otherwise; It allows us to carry out interest benthic species methodological sampling testing, as well as verification of anthropic activities impact, ecosystems changes, among others. In this sense, Alex González participation, in

a Scientific Diving training course, aims to reinforce and improve the practice of diving, both in its research objectives and/or maintenance of underwater equipment, as well as in preventive matters, in accordance with IFOP purposes of improving technicalprofessional responses of personnel involved in fisheries and aquaculture research".

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IFOP announces "Patagonia's Fjords and Channels Oceanography and Numerical Modeling "online dissemination workshop

On Thursday, March 31rst, IFOP's Oceanography and Climate in Castro (chonos.ifop. cl) will offer a new dissemination workshop entitled "Patagonia's Fjords and Channels Oceanography and Numerical Modeling", with the most relevant results and advances achieved in physical oceanography and its applications for productive activities sustainable development carried out in southern Chile marine systems. The workshop presentations address various topics related to Chilean Patagonia oceanography, such as: MOSA oceanographic forecasting operational system implementation, improvements and perspectives; freshwater discharges dynamics and modeling from rivers and glaciers; circulation and water masses transport; Lagrangian connectivity; and biogeochemical description and modeling. Each presentation includes a short space of time dedicated to questions and exchange of ideas from which to build joint knowledge of future research. To comply this objectives, IFOP has considered a range of community representatives to participate in the workshop, including political and administrative authorities (Subpesca, Sernapesca), regional government and researchers from related fields.

Due to COVID-19 pandemic current health contingency, the workshop will be held telematically via Meet (Google video calls) on March 31^{rst} from 09:00 – 13:10 (approximate end time).



