

# HUMBOLDT CURRENT LARGE MARINE ECOSYSTEM PROJECT

GEF-PNUD-HCLME PIMS 4147 2011-2015

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## **EDITORIAL NOTE: CONSULTANTS CHOSEN FOR FIVE THEMATIC REPORTS FOR ECOSYSTEM DIAGNOSIS**

In both Chile and Peru, the process of selecting consultants for drafting five thematic reports in order to update the diagnosis of the Humboldt Current Ecosystem was finished; (1) Ecosystem Productivity (COSTAMAR in Peru, Universidad de Chile and Universidad de Valparaíso in Chile), (2) Resources and Fisheries (CEDEPESCA in Peru, PROMAR in Chile), (3) Ecosystem Health (MSc. Silvana Fajardo in Peru, INNOVABLE in Chile), (4) Socioeconomic Issues (CSA and IDP in Peru, Dr. Felix Inostroza in Chile) and (5) Governance (CSA in Peru, INNOVABLE in Chile).

## **INTERNATIONAL SPICES SYMPOSIUM, CHILE**

From 7 to 9 January 2013, the International Symposium on "Climate Variability and Change on Marine Resources: Towards an Integrated Ecosystem Studies Program (SPICES) for the South Pacific" was held in the city of Concepción, Chile. The event brought together scientists from around the South Pacific in order to describe the current state of knowledge based on scientific research on marine resources. The South Pacific contains unique ecosystems and landmarks such as the Galapagos Islands in the tropical region, and sub-Antarctic islands bordering the polar region. For the countries of the region, the South Pacific provides significant economic, social and cultural benefits for a whole set of nations that depend on their coastal and ocean resources. However, increasing coastal populations, climate change and the condition of full exploitation or overexploitation of fishing resources demand several actions to ensure future food security and a sustainable resource use. This important international symposium was organized by the Instituto de Investigación Pesquera (INPESCA, Chile) and the Institute of Marine and Antarctic Studies (IMAS, Australia).



*The SPICES Symposium brought together scientists from the South Pacific during three days, who evaluated the responses of species to climate change and other stressors.*

## **SPICES WORKSHOP, CONCEPCION, CHILE**

Taking advantage of the Symposium SPICES developed in the days before, a SPICES workshop was held the 10th of January. The creation of "Integrated Ecosystem Studies Program for the South Pacific" has been long expected, and its foundation would allow technical and scientific coordination between countries on both sides of the

South Pacific. The prospect of SPICES linking with existing official organizations (such as the South Pacific Permanent Commission CPPS, or South Pacific Regional Fishery Management Organization SPRFMO) were analyzed as mechanisms to produce effective contributions to other entities acting in the region which require a multidisciplinary scientific approach. Participants from more than 20 countries expressed their willingness to continue cooperating to find mechanisms to officially commit their nations regarding the support to the SPICES initiative.



Foto: M. Gutiérrez

*During the workshop, Dr. Patricio Bernal, on behalf of the International Union for Conservation of Nature (IUCN) recalled the efforts of the scientific community in the South Pacific during the past decades in the sense of concreting cooperative arrangements that are necessary to achieve a comprehensive understanding of climate variability and future impacts on marine species, fisheries and socio-economic effects and implications for governance.*

## **NORMAL OCEANIC CONDITIONS, PERU**

The National Committee for the Study of El Niño (ENFEN) gathered to review and update the information on weather, oceanography, biologic, fisheries and hydrological conditions in January 2013, concluding that: the South Pacific Anticyclone (SPA) presented a southern configuration, with a position slightly towards the south, which caused temperatures with slightly negative anomalies in the coastline, especially in central and southern areas. On the other hand, winds at middle and upper levels on the west presented anomalies which caused the slight decrease in precipitation in the northern coast of the country. Anomalies of Sea Surface Temperature (SST) in the equatorial Pacific, and along the Peruvian coast continued to show slightly negative variations, while the Mean Sea Level (MSL) along the coast, showed slight positive anomalies. Until December 2012, the Coastal Index EL NIÑO2 (ICEN) for the Niño 1 +2 region remained neutral in the range. Locally, considering what has been described and predictions of climate models to the Peruvian coast, it is expected that the air

temperature, SST and MSL continue around normal conditions for the rest of summer 2013 (Source: ENFEN).



Foto: ENFEN

Despite the increase of rain index and river fluxes the current conditions are inside the expected values for the summer season.

### HERMAPHRODITISM CASE IN ANCHOVY, CHILE

An unusual event was reported during the survey "Acoustic Assessment of Anchovy and Sardine Recruitment between Regions V to X, 2013" carried aboard the B / C "Abate Molina". One case of hermaphroditism in anchovy was reported. It is the first time seen in the 15 surveys in the area since 1999, where they have sampled more than 70,000 specimens of anchovies. The fish was caught with an average water sampling net in the first 20 meters of the water column on January 9th 2013, at 23:49 hours at the port of Constitucion (35 ° 22.1 'S - 72 ° 33.5 'W) at a distance of 5 nautical miles off shore. The captured specimen presented a total length of 15.6 cm, 25.6 g total weight gonad weight equal to 1.7 grams (Source: IFOP).



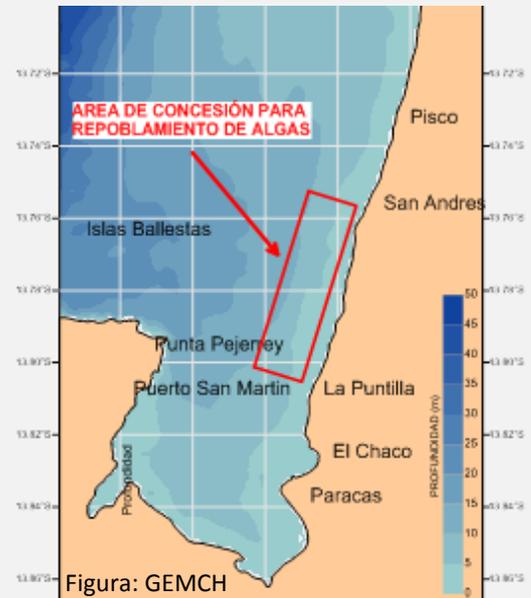
Foto: IFOP

The gonad presents an advanced state of maturity, occupying most of the abdominal cavity of the fish. The male portion shows a milky white coloration with turgid areas on its surface while the female portion has a cylindrical shape with deep orange presence seen at a glance. The gonadal condition described is, in both cases, a state of sexual maturity 3 according to the macroscopic sexual maturity index by Simpson and Gil (1967).

### SEAWEEDS REPOPULATION PLAN, PERÚ

HCLME Project published the Terms of Reference for the implementation of a Comprehensive Plan of Action (PIA), towards the repopulation of natural seaweed beds, via laboratory cultivation and harvesting to achieve further benefits for the Bay of Paracas ecosystem, Ica Region, Peru. The PIA will rebuild the kelp affected by the

indiscriminate extraction, which will also enable the recovery of benthic resources today scarce in the region. PIA will also allow sustainability of economic activity for the community of artisanal fishermen in the area in order to start a sustainable production that includes the transfer of appropriate technologies to them. The PIA implementation will be conceded to an entity engaged in aquaculture activities. It must demonstrate technical experience in seaweed business management and effective links with the artisanal community in the region.



In the Paracas Bay, in the case of seaweeds, the main species are: *Lessonia nigrescens*, *Macrocystis integrifolia*, *Chondracanthus chamissoi* and *sp Gracilariopsis*.

### DEPOMOD WORKSHOP, CHILE

Under the project led by IFOP "International Experience in using DEPOMOD for Aquaculture", a workshop was held in Viña del Mar city between Monday 7 and Friday 11 of January. The DEPOMOD, a particle tracking model, used for predicting the organic carbon load locally, incorporates the water column and the benthos production variables as well as parameters used in fish farming.



Foto: IFOP

The goal of this workshop was to know from firsthand international authorities; both in Scotland and Canada, the use given to the DEPOMOD model, and acquire the knowledge necessary for the implementation and / or evaluation of this Sedimentation Model in Chile, specifically in sectors where activities of aquaculture are developed.

DEPOMOD was developed in Scotland by the "Scottish Association for Marine Science (SAMS) Dunstaffnage Marine Laboratory in Oban" (Cromey et al. 2000) and is currently used as a regulatory tool in Scotland to issue authorizations for discharges of chemotherapeutics and setting biomass limits. In Canada, the DEPOMOD is used as a support tool to evaluate the potential impact of aquaculture, specifically the salmon farming (Source: IFOP).

### WORKSHOP ON ADVANCES AT PUNTA SAN JUAN, PERU

Several organizations have been carrying out certain activities (extraction, ecology research, educational etc) in Marcona, Ica Region, where the Natural Protected Area of Punta San Juan is located, one of three pilot sites of the HCLME Project in Peru. On February 20th, a workshop was conducted to show the progress of ongoing activities that are executed by various entities (IMARPE, AGRORURAL, COPMAR, CSA-UPCH, WWF, ECOCEANICA, IRD, GEMCH) to facilitate the exchange of information, coordination and cooperation toward the common goal of achieving an Ecosystem Approach to Management (EAM) in the area. Participants on behalf of their institutions, expressed the common will to continue cooperating with national, regional and local actions coordinated with the authorities on management of the goods and services of this this unique ecosystem. In this regard, they agreed to present this report to relevant authorities (MINAM, SERNANP, PRODUCE, DICAPE, MEM and GORE-ICA) and request their intervention in the design of solutions to problems that have been identified.



Representatives of the artisan fishing sector from Marcona (COPMAR) also attended, as well as government agencies, universities, NGOs and enterprises.

### IFOMC SCIENTIFC COMMITTEE VISITED CHILE

The visit was part of preparations for the seventh edition of the "International Fisheries Observer Conference & Monitoring" (7th° IFOMC). The representatives of international organizations gathered at the School of Marine Sciences of the Catholic University of Valparaiso in order to evaluate and select the abstracts submitted by participants to the Conference. They also analyzed the progress of the organization of the 7th IFOMC, together with the Organizing Committee of the FIGO, headed by its Executive Director, Jorge Toro Da Ponte (Source: IFOP).



Fishing fleets are an essential source of scientific information useful not only for monitoring and control, but to the study of ecosystems. In this regard the work of the fisheries observers is essential and requires close attention of the international scientific community.

### FishITo CEVICHE FACTORY, PERU

In the Ignacio Merino 2283 Avenue, behind the Lince market (near the block 22 of Av Petit Thouars) a very interesting franchise called "Ceviche FishITo Factory" was opened. It is the only restaurant in Lima that offers fresh anchovies on their menu. They also have crispy fried fish potatoes, anchovies in barbecue sauce, mango ceviche and other oily fish originalities. It is a self-service fast food enterprise that must be supported by the public. The menu is good, the idea is great, the extra effort and prices for all economies. Eating anchovy there is a unique experience, Excellent ! (by F. Miranda, OANNES NGOs).



With the entry of this national franchise, new opportunities for the development of fish consumption are opened, based on an offer of "blue fish" such as anchovy or mackerel, rich in Omega 3.

### 2012: 7.1% MORE THAN 2011 IN EXPORTATIONS, CHILE

On the period January-December 2012 1,259,631 tons of capture fisheries and aquaculture products were exported, 7.1% above the figure for the same period last year. In terms of foreign exchange earnings, it generated U.S. \$ 4.564 million, down by 2.8% compared to 2011 and contributing to the total Chilean exports with 5.9%. Note that for this period the product that was exported most was frozen fish (459,389 tons) of which trout contributed 20.5% at an average price of US \$ 5,976 per ton (Source: IFOP).



*Capture fisheries and aquaculture exports in Chile kept a high level in both volume and revenue, despite the overall reduction in catches of jack mackerel agreed by SPRFMO.*

### FORUM IN PUNTA SALINAS MEGAPORT, PERÚ

In order to contribute to the process of social consultation and economic and commercial analysis in the northern provinces of the Lima Region, a forum called “Mega Project on Multimodal Terminal Punta Salinas Bay” was organized on February 19<sup>th</sup> by the Provincial Municipality of Huaura in cooperation with technical developers. This public consultation and coordination activity was performed to collectively identify priorities regarding the opportunity for strategic development of the country's central coast. The forum was held in the main auditorium of the Universidad Nacional José Faustino Sánchez Carrión in Huacho.



*The Salinas Point port project is not new, it has been mooted for about 50 years but has been a constant source of expectations for one of the most fertile agricultural regions of the Peruvian coast.*

### NEW PUBLICATIONS ON ECOSYSTEMS, PERU

Five new IMARPE scientific volumes were presented on February 20<sup>th</sup> at a conference of Dr. Octavio Moron, Chief of the Chemical Oceanography Unit. These five new volumes show current knowledge on the Humboldt Current marine ecosystem, and were funded by the GEF-HCLME project. The five publications are: IMARPE Report Volume 38-1 Oceanographic Aspects of the Peruvian Sea in 2002-2008, containing 17 scientific articles and a scientific note; IMARPE Report, Volume 38-2 on Peruvian hake *Merluccius gayi* Ginsburg assessed in the autumn of 2003, with 16 articles; IMARPE Report Volume 38-3 on Peruvian hake *Merluccius gayi* Ginsburg evaluated during the autumn of 2004, with 12 articles; IMARPE Report Volume 38-4 contains 7 assessment protocols on scallops

(*Argopecten purpuratus*), reproductive processes in pelagic and demersal fish controlled systems, and a diagnosis of the state of macroalgae on the coast of Arequipa. Finally, the Bulletin Volume IMARPE 26.1-2 contains 10 papers presented at the 2<sup>nd</sup> Congress of Marine Sciences of Peru conducted in the city of Piura between 24 and 28 May 2010. The researches described in this volume include a study of Otuma (Ica Region) paleographic records, biogeochemistry research articles and hydrological aspects.

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