Creating a Roadmap for Climate Resilient Fisheries in the Humboldt Current

Workshop Debrief

May 2019

Recently Environmental Defense Fund convened a workshop the brought together the fisheries science and management agencies of the three countries in the Humboldt Current (Chile, Peru and Ecuador) along with key academics and multilaterals (FAO and UNDP) to discuss advances in climate and fishery science and to create a roadmap for improved fisheries resilience and adaptation in the face of climate change. This workshop built off of collaborative agreements (signed MOUs) between EDF and Peru's Institute of the Sea (IMARPE) and Chile's Fisheries Development Institute (IFOP), as progress made to improve high resolution and bio economic modeling of fisheries and oceanography in the region.

EDF facilitated this workshop in order to focus on four scientific aspects of climate change and fisheries in the Humboldt Current, including: (1) biophysical changes driven by climate change (2) increased environmental variability associated with climate change (3) changes in productivity and (4) changes in species movement and distribution patterns. In addition, given the large level of uncertainty that these four areas of impacts will cause for fishery managers, the group discussed how fisheries management in each country and as a region can be best prepared for these uncertainties, especially for critical transboundary zones such as the north of Chile and south of Peru, and the north of Peru and south of Ecuador.

The objectives of the workshop were trifold: (1) To refine and agree upon a scientific agenda for improved fisheries science in the Humboldt Current that will lead to improved ecosystem-based adaptive management (2) Based on the scientific agenda, outline a roadmap for improved fisheries management in the Humboldt Current in the face of climate change and, (3) Together with fishery managers, scientists and academics of the Humboldt Current achieve a common

understanding on what types of fisheries management changes, tools and innovations are needed for creating climate-adaptive fisheries management.

Through discussion and breakout groups, we were able to validate our ten year vision (attached), cross walk our vision with the major projects and programs in the region that receive multilateral funding and support, and determine major risks and opportunities. We also refined our scientific agenda, which now consists of the following outputs between the three countries' scientific institutes with expert facilitation and assistance done by EDF and input from management agencies and academia:

1. A baseline compendium of fisheries information and analysis of the geographic regions to be most in need of attention, and most impacted by climate change in the Humboldt Current, The first volume of work will be for the northern Chile/southern Peru region and the second volume of work will be for the northern Peru/southern Ecuador region, and these will contain a description of impacts and the ways in which climate change is expected to cause these impacts. These volumes are to be completed by 2021 when IMARPE will organize an International Congress on the Humboldt Current. At this event, IMARPE, IFOP, INP and EDF will co-host an event to celebrate the publication of this baseline information and its contribution towards international collaboration on fisheries science and improved adaptive management.
2. Partially based on the information from the above volumes, the creation of the region's first comprehensive system for shared observation, prediction and early warning of climate impacts to inform adaptive management protocols. Called SAPO (Sistema de Alerta, Prediccion, y Observacion), this system will be designed by all three countries collaborating together, with EDF's help as a lead facilitator of the process. This system will provide fishery managers with the information and tools they need to make adaptive management decisions on different time scales given the impacts of climate change on fisheries' productivity, abundance, and movement patterns. The first international design workshop for the SAPO system will take place in Lima next January with IFOP, IMARPE and INP, as well as fishery management agencies and academic experts.

In addition to the major outputs listed above, by end of this year EDF will have completed a roadmap for how to achieve climate adaptive fisheries in the Humboldt Current, incorporating outputs from this workshop and previous workshops with the science and management agencies of the region. We believe this roadmap and the commitments made on an international scale will allow EDF to continue to foster and facilitate a science-driven process for improvements to adaptive management processes that better incorporate ecosystem considerations, increase the speed and precision of management decisions, and result in the creation of innovative tools, such as SAPO, that will provide fishery managers, industry and fishing associations with the information they need to make the best decisions in the face of climate change.