Video technology improves data collection on longline fishing vessels

The Yi Man #3 entering the port in Noro, Solomon Islands (image: Malo Hosken).

Earlier this year, two longline vessels departed from the Solomon Islands with the latest video technology onboard to improve data collection in the western and central Pacific tuna longline fisheries for albacore, yellowfin, and bigeye tunas.

The Western and Central Pacific Fisheries Commission (WCPFC) calls for 5% observer coverage onboard longline vessels operating within the Pacific Islands region. However, challenges, including limited space onboard smaller vessels, logistics, and costs have limited human observer coverage on vessels to around 2%. Third-party data — that is, data collected from a source independent from the vessel — are, therefore, lacking on longline target catches, non-target catches, and overall operations. These data are necessary to improve scientific understanding of these fisheries, strengthen management tools, and promote better enforcement of existing national and regional conservation measures. The use of modern technology to supplement the role of human observers offers an opportunity to overcome these challenges in tuna longline fisheries, making this an important and pioneering effort.

This highly collaborative project was developed and launched by Tri Marine, National Fisheries Developments (NFD), Yi Man Fishery Company, Satlink, the Pacific Islands Forum Fisheries Agency (FFA), the Secretariat of the Pacific Community (SPC), and the Solomon Islands Ministry of Fisheries and Marine Resources (MFMR). Tri Marine and NFD are contributing to project management and the installation, maintenance and costs of the electronics. FFA, via the European Union-funded DevFish 2 project, is sharing equipment costs and is playing a major role in overall coordination. Satlink is providing and covering some of the costs of the electronics, while also designating staff for installation, data monitoring and review. Yi Man Fishery Company offered the use of two of its vessels, and allocated valuable time to facilitate the installation, and limited vessel space and resources to accommodate equipment and observers. MFMR has provided observers to overlap with the electronics, while SPC assigned a Field Coordinator to assist with observer placement, data review, and project evaluation and reporting.

This multi-stakeholder effort will assess whether or not video cameras, electronic storage, and vessel monitoring systems (VMS), combined with at-port inspections, can generate information sufficient to fulfill the requirements of the WCPFC Regional Observer Program minimum data fields. Imagery collected will be reviewed after each vessel trip by MFMR, with FFA and Satlink involvement, using customised reviewer software. Human observers will also be onboard conducting regular observer duties, with results to be compared against those collected electronically. The project is being done with two vessels for two fishing trips that might last anywhere from six to ten weeks each, for a total of four trips. Early results will be presented at the WCPFC Scientific Committee meeting in August 2014, followed by a full report summarising the findings, including a cost–benefit analysis and recommendations for further development and implementation.

Although the project is unique and innovative in its application to distant-water tuna longline vessels in this part of the Pacific, it does fall within the broader framework of WCPFC electronic technology development. E-reporting to digitise and streamline data recording by vessel and fisheries department staff has been tested with NFD purse-seine vessels and is being expanded to other fleets. E-monitoring, or EM, is already applied under VMS requirements, and is now being broadened to incorporate video systems like the one being tested with this project. In late March 2013, WCPFC advanced these complimentary efforts by hosting an E-monitoring and E-reporting Workshop at FFA headquarters in Honiara. The objective is to gain member input into progressing E-technology and developing a related proposal for the next Technical Compliance Committee Meeting. An overview of the design and launch of this project has been presented at the workshop, and resulted in feedback to be applied for the second vessel trips.

Although tuna resources are under increasing amounts of pressure, collaborative efforts like this one between industry and fisheries managers provide tangible results that can guide improvements. Modern fishing technology is often blamed for negative impacts on the marine environment, but the strategic application of new innovations can also contribute to improved science, and the monitoring, control and surveillance needed for a more sustainable future.

Camera installation (image: Malo Hosken).

For more information:

Joe Hamby
Tri Marine
jhamby@trimarinegroup.com