

The Electronic Fishing Logbook Application

E-Logbook



In creating the e-logbook, WWF is taking advantage of smartphone technology—an efficient, reliable, and cost-effective way to collect data—to improve the quality and quantity of fisheries information around the world.

The Problem

Daily harvest, fishing effort, and incidental catch information from many fisheries is limited or absent, particularly from small-scale fisheries in developing countries. This lack of essential fisheries data is hindering efforts to sustainably manage fisheries resources.

For the fisheries that do have some monitoring systems in place, the data is usually recorded through paper-based systems that are not conducive for efficient data integration or timely analysis to inform decision makers.

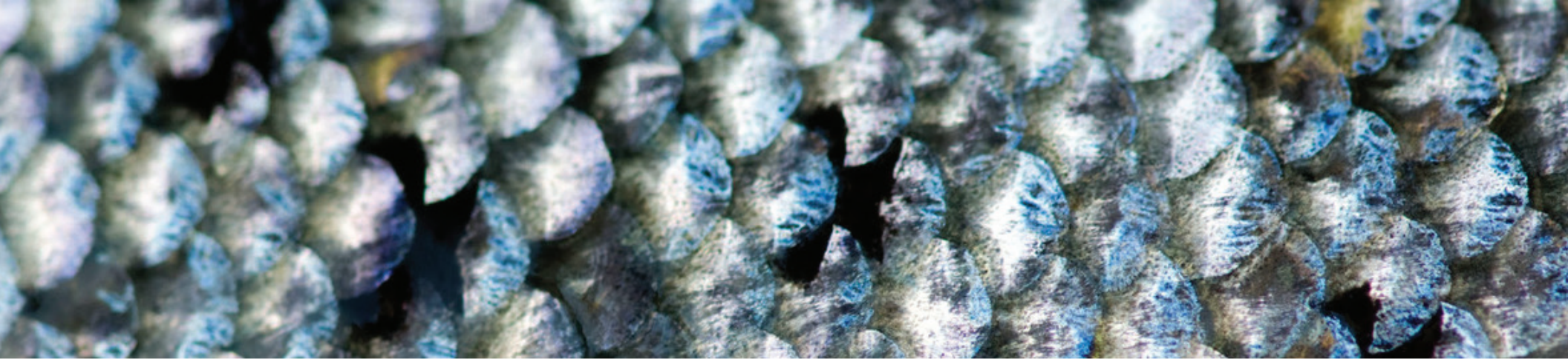
The Solution

Smartphone technology is an efficient, reliable, and cost-effective tool to help fishers self-report their catch data, and help fisheries managers monitor fishing vessels' activities and track the origin of seafood products.

Together with fishers, authorities, researchers, and onboard observers, WWF co-designed and developed an e-logbook system that allows fishers to use their mobile devices to electronically record and transmit fishing catch and effort data, where it is immediately available to fisheries managers on the e-logbook website.

By providing timely fishing activity information, the e-logbook system increases fisheries data quality, quantity, and availability to help fisheries managers make better, faster decisions to combat illegal, unreported, and unregulated (IUU) fishing, establish accurate conservation goals, improve catch documentation, and comply with international market traceability requirements to export seafood.

The e-logbook was developed with funding from the Walton Family Foundation and the WWF-US Innovation Fund.



The mobile-based application component

The user-friendly e-logbook mobile-based application (app) allows industrial and artisanal **fishers** to digitally record—in real time—the date and time, geographic position, duration, and catch information for every fishing trip using their mobile devices in their fishing zone. At this time, the app is supported on Android devices.

The data can be recorded without an internet or cellphone signal. When connected to the internet, the app will automatically send the information to a secure online database. In this way, the app directly links the information generated at sea with the fishery managers that need it for fisheries monitoring, catch traceability, and stock assessment.



The online database component

The online database systematizes the collection, storage, and digital analysis of e-logbooks submitted by fishers. It generates summary reports [e.g., total catch by species, number of fishing days, catch per unit effort (CPUE), positions on a map, among others] that can be easily accessed through a website.

Vessel owners can use the website to register their fishing boats, create accounts for their captains, and see previous data that they have submitted. **Fisheries authorities and managers** can access an entire fleet's data, including submitted reports and vessels' locations, to quickly determine compliance with regulations and detect irregularities in fishing activity.

Only an authorized group of users has access to this website, to guarantee the confidentiality of the information.



Key Features

The codes to develop the e-logbook app are **free**, **open-source**, and **transferrable** to interested parties. The e-logbook can be **tailored** to any fishery, adapting to its scale, gears, operational language, and target species. Other features include:

- Data to be collected is harmonized with international markets requirements (e.g. US-SIMP).
- Simple, easy-to-use layout.
- Accurate information that is pre-generated in the app, and automatic recording of geographic location, date, and time of entry that reduces errors and misreporting.
- Reliable source of information that can be used to complement and cross-validate data from VMS, onboard observer reports, and landing certificates by fisheries inspectors.
- Online database with one e-logbook per vessel;
 - catch data report by species, fishing gear, and vessel;
 - a map showing location of every fishing tow.
- Secure, password-protected website accessible only to authorized users.

The e-logbook can be configured to comply with the GDST 1.0 seafood traceability standards, enabling state-of-the-art data collection and sharing to maximize connectivity with international markets.

The pomada shrimp fishery in Ecuador

In 2015, WWF conducted its first “on-the-water” trials of the e-logbook system with 38 commercial *pomada* shrimp fishing vessels on the Gulf of Guayaquil, Ecuador, as part of a tenure-rights program to improve fisheries monitoring and management.

Due to WWF’s outreach and training workshops across the fishing sector, the number of participants in the e-logbook pilot project continued to increase each year. By the 2017 fishing season, 53% of the industrial *pomada* shrimp vessels in the village of Posorja had volunteered to use the e-logbook system.

Vessel owners recognized the importance of adopting the e-logbook for capture fisheries, for both improved fisheries management and to demonstrate to authorities that they were not illegally fishing in restricted zones. In 2018, members of an association for *pomada* fishers wrote a formal request to the Ecuadorian Ministry of Agriculture and Fisheries to permanently adopt the e-logbook.

In 2020, the National Chamber of Fisheries in Ecuador is conducting a pilot project for an e-logbook system—based on the WWF *pomada* trials—for 40 small purse seine vessels.

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Improving the quality and quantity of national fisheries data in Chile

Due to the success of the pilot in Ecuador, WWF provided the e-logbook technology to the Government of Chile, one of the world's largest fishing economies. Sernapesca—the government agency that oversees the country's fishery resources—modified and adapted the e-logbook to fit the needs of the country's industrial fishing fleets.

The e-logbook is part of Sernapesca's efforts to control bycatch and discarding, in addition to mandated on-board camera monitoring systems. Both tools are installed across the country's entire industrial fleet of 121 vessels.

Since implementation in early 2020, the e-logbooks have recorded information on more than 1000 fishing trips in the country.

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Improving the transparency of fisheries discard data in Argentina

Following the success of the e-logbook's implementation in Chile, other stakeholders and governments in South America are expressing interest in scaling-up the technology in other fisheries.

In 2020, WWF partner organization Fundación Vida Silvestre Argentina received funding from the USAID-funded project Targeting Natural Resource Corruption (TNRC) to work with the National Institute of Fishery Research and Development and stakeholders in the Variado Costero Fishery in the province of Buenos Aires to pilot an electronic system—potentially the e-logbook. The project aims to improve transparency and data on discards—the bycatch that does not have commercial value and is subsequently thrown back. It is hoped that the data from this pilot will inform activities to advocate for a national law on fisheries traceability to eliminate corruption.

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Get involved

For more information, and to receive the e-logbook codes, please contact Maria Prebble (WWF-US).

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