ROLE OF CAMERA SYSTEMS AND ELECTRONIC MONITORING IN THE WESTERN CENTRAL PACIFIC FISHERIES
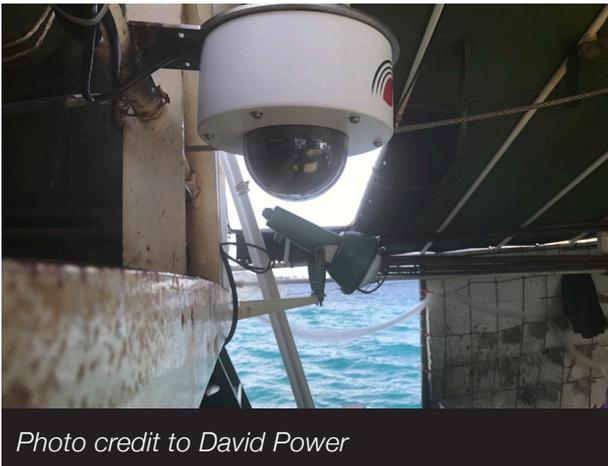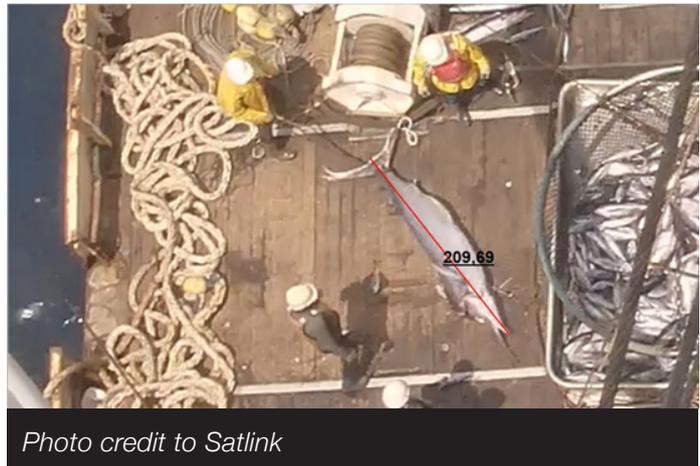

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Effective fisheries management relies on fisheries managers and compliance officers making informed decisions based on reliable and timely data.

In the Pacific region, FFA members are increasingly using electronic data reporting (e-reporting) and monitoring (e-monitoring) to support national decision making, reliable stock assessment, measure bycatch and identify illegal and unreported fishing. These electronic tools complement and enhance existing logsheet and observer programmes that are the foundation of fisheries data collection.

E-reporting is the electronic submission of fisheries data from the original source to a database via an internet connection

E-reporting includes data entry and transmission of standardised logsheet and observer data from the boat at sea or from the port of landing. Other information includes vessel licence and registrations, port sampling and unloading data, activity notifications and boarding and inspection data.

E-monitoring is the use of electronic means to independently collect fisheries data and support verification of reporting and compliance

E-monitoring systems include sensors that record and transmit real-time data and can be linked with camera systems to record imagery of fishing activities. The Vessel Monitoring System (VMS) is an example of e-monitoring that is used as a tracking tool in the Pacific. Camera e-monitoring technology has been trialled worldwide for over fifteen years. The data collected from e-monitoring helps scientists, fisheries managers and compliance officers verify what is caught, where a boat is fishing, and the type of activity a commercial fishing boat is engaged in.

E-monitoring is just one of a range of tools that can be used to monitor commercial fishing activities in the Western and Central Pacific Ocean, in addition to onboard observers, port sampling, vessel boardings and inspections. A box full of different tools helps governments collect a wider range of data to help make informed fisheries management decisions and combat illegal, unregulated and unreported (IUU) fishing.
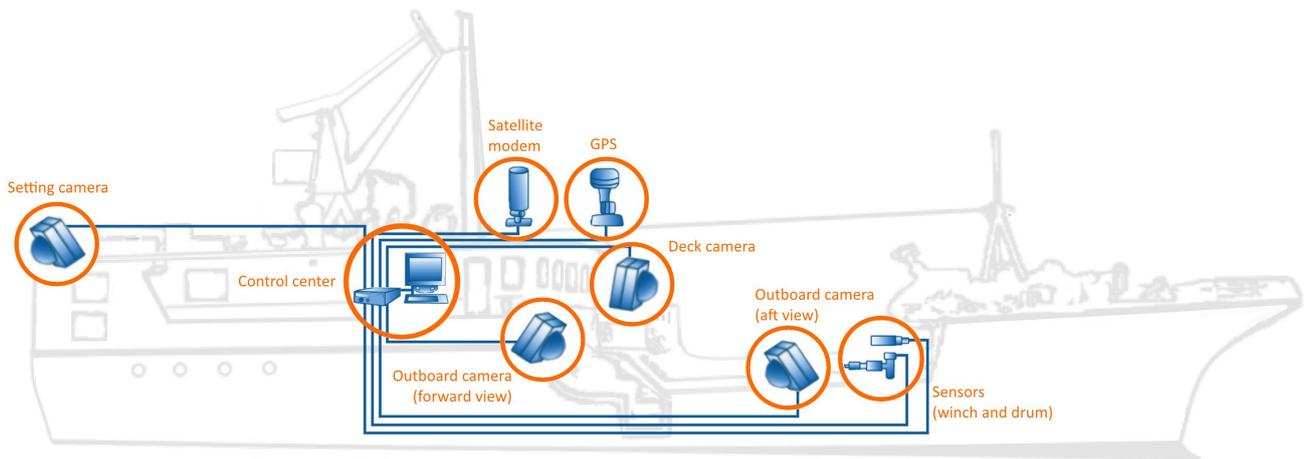
E-MONITORING SYSTEMS

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A camera e-monitoring system usually consists of wide angle digital cameras, a GPS receiver, gear usage sensors, storage and processing devices, and a display screen. Sensors can collect data about boat locations and when fishing gear is being used. Cameras record imagery that can be analysed for determining the effort (number of sets, hooks or baskets), the total catch (species, length, life status and fate) and other noticeable events (e.g. transhipments, crew behaviours). They are "closed systems" that do not allow for manual input or changes to data that is stored.

Sensor data can be sent in real-time via satellite to national Review Centres, and to regional databases. Imagery from cameras is stored on a removable storage devices that are provided to a Review Centre once the vessel returns to port. There is flexibility around whether analysis is conducted at the national level and then provided to regional agencies or vice versa. A feedback report can be sent to the captain of the vessel, to ensure that they keep the systems maintained with cameras and sensors operating effectively. A trip report is sent to the fishery manager and compliance officers to alert them of any issues.
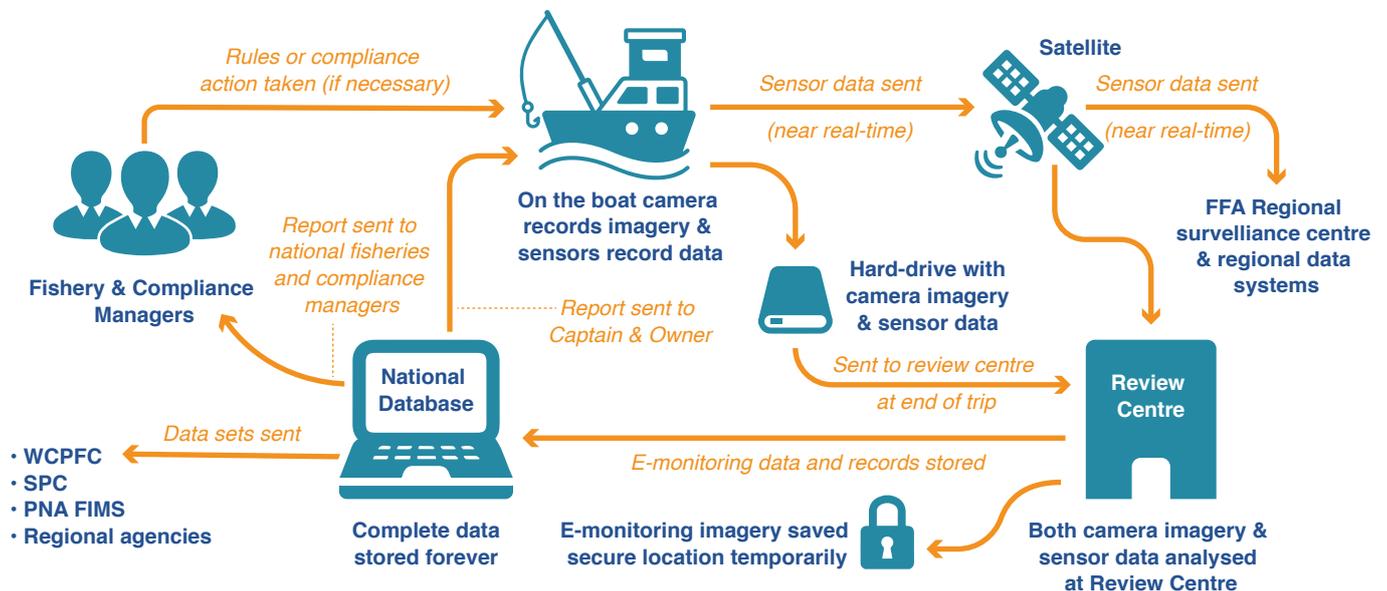
BENEFITS OF E-MONITORING
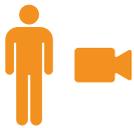
24/7 monitoring of a vessels fishing activity

Fast, with near real-time verification of fishing activity

Cost effective tool to enhance monitoring & verify what is caught and reported by fishers
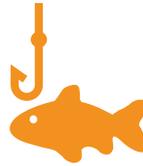
Can't collect all biological data, observers still needed on boats and/or in port

Compliments existing observer programmes with increased coverage in longline fisheries

More reliable data supports improved assessment of stock status and better bycatch data, particularly from longline fisheries

**Promotes responsible fishing and accurate reporting by crew**

Improved safety of operations on vessel

The increasing use of e-monitoring is improving the reliability of the information that managers and compliance officers need to support decision making. E-monitoring systems have proven to be cost effective and robust, and are used across fisheries in Australia, Canada, Denmark, France, Spain, the UK, and USA. In the WCPO fisheries there is an internationally agreed target of 5% observer coverage for longline fisheries and 100% for purse seine boats. E-monitoring is being used to increase monitoring in the longline fishery and to support observer functions and safety on purse seine boats. Observers will continue to be required onboard vessels and/or in port to collect biological samples and data. The use of e-monitoring to compliment established observer programmes will ensure there is a better representation of day to day fishing activities and that more data can be collected from imagery, and checked and verified as accurate.

Data can be collected for both science and compliance purposes on the target species being fished, as well as bycatch and discarding events of non-target species or endangered, threatened and protected species and the gear being used. Data from sensors can be sent in real-time, speeding up fisheries management decisions. E-monitoring systems are durable through all weather events, some maintenance can occur remotely, and health and safety issues with observers or vessel boardings can be minimised.

IMPLEMENTATION

Implementation is being driven at the national level to ensure that monitoring programmes meet their data needs. At the regional level, national fisheries authorities are working with FFA, SPC, PNAO and NGO partners to coordinate trials and implementation. This is supported through a regional strategy to strengthen fishery monitoring and data collection through e-reporting and e-monitoring. The aim is to ensure a compatible approach to e-reporting and e-monitoring between members, regional agencies and NGOs, and encourage collaboration between all parties. E-monitoring process standards are being developed for WCPO fisheries where the goal is for common standards to be implemented more broadly across all members in the WCPFC. E-reporting standards for purse seine and longline fishing logsheets were adopted as voluntary guidelines by the WCPFC in 2016.

LEGAL REGULATORY E-MONITORING ADMINISTRATIVE
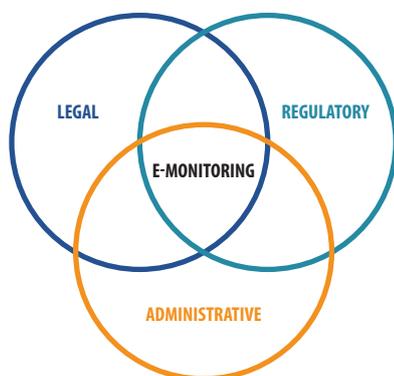
For member countries, a strong legal, regulatory and administrative framework is key to providing the support for implementation of e-monitoring. Some legal concerns that have been raised include privacy, confidentiality and data protection. However, these issues have proven to be manageable through good consultation with industry and the development of clear and transparent policy. To address potential legal issues, national governments may enact specific privacy legislation, and amend existing fisheries legislation to support e-monitoring and e-reporting.

Regional agencies and NGOs are able to assist member countries with their implementation needs. If you are interested in implementing e-monitoring in your country, you can contact FFA, SPC, or PNAO, noting that these agencies have working relationships with a range of partners such as TNC, ISSF, EDF and WWF.

This booklet was produced in November 2017 by FFA and WWF, in collaboration with SPC.

For more information;

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