Case study: Luen Thai/Lian Cheng involvement in electronic monitoring of tuna fisheries in the Federated States of Micronesia

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Although there is general agreement that the use of electronic monitoring (EM) aboard tuna vessels could be a valuable tool for managing tuna fisheries, there is considerable discussion and debate about the most appropriate manner to initiate the uptake of EM by fishing companies. This report presents a case study of a fishing company operating in the Federated States of Micronesia (FSM) that adopted EM without being compelled to do so by government regulations. It provides some insight into motivations, concerns and opportunities associated with the adoption process, which may be applicable to fleets operating in other countries.

This report consists mainly of information supplied by the senior vice-president marketing of Luen Thai Fishing Venture (LTFV), the executive director of FSM's National Oceanic Resource Management Authority (NORMA), the Luen Thai and NORMA websites, comments from fisheries specialists, and published studies (Brown et al. 2021; Campling et al. 2017).

Backgound

The Luen Thai Group, a component of a large Hong Kong-based company, was founded in 1965 primarily for garment manufacturing in Saipan, Commonwealth of the Northern Mariana Islands. The company became involved in fishing through its subsidiary, LTFV, in 1994 when it acquired the Majuro, Palau and Pohnpei facilities of a defunct fishing company. Lian Cheng is the China-based, vessel-owning and operational component of Luen Thai.

A Lian Cheng longline vessel

Forty-seven Lian Cheng longline vessels are based in FSM. Thirty-nine are freezer boats and eight are able to carry both fresh and frozen fish. The LTFV facilities in Pohnpei consist of a dock, a processing plant leased from the government, and (soon) a cold storage facility. In Kosrae they have a transshipment base (shipping about 40 containers per month) consisting of a crane and large dock with plug-in electrical facilities for containers. In Yap, LTFV has a small offloading and transshipping operation. LTFV (or its sister companies) have leases on portions of government docks in Kosrae, Pohnpei and Yap.

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A Lian Cheng longline vessel. (Image: © Lian Cheng)

Initial involvement in EM

LTFV has highly skilled information technology staff based in Shanghai. For some time, they have been developing systems to remotely monitor activities on their distant-water fishing vessels. About 2013, they used cameras on board their longline vessels in FSM for commercial purposes, such as fish quality control, accidents and broken gear. Other forms of EM were developed for use aboard the LTFV vessels, such as alarms for problems with onboard cold storage, and for when the monitored vessel closely approached another vessel.

On request from FSM's NORMA in 2014, five Lian Cheng vessels based in FSM participated in the "TNC-Pacific Islands Cooperative Longline EM Project", along with other vessels operating in the waters of the Marshall Islands and Palau. The aims of the project were to: 1) estimate differences between EM and logbook reporting rates for the main market tuna species (yellowfin, bigeye and albacore) and key bycatch groups (all species other than the main targeted tuna species, including sharks, turtles, billfish and other fish species); 2) compare catch rates from EM to human observer data; 3) compare EM and logbooks for species composition; 4) investigate whether EM can inform bycatch mitigation by looking at how fishing practices affect clustering of bycatch within sets; and 5) explore the representativeness of the current EM trials, to make suggestions for the utility of EM to improve monitoring coverage of different fleet components.

During the TNC project, the five Lian Cheng vessels carried two sets of EM gear: one from the project and one from LTVF. The project EM gear was carried by the vessels for five or six years.

In the EM introductory process, LTFV management indicated there was not much resistance or concern by vessel captains. There was one case of a camera being blocked in the early period, and a few cases of EM equipment failure – but those early problems appear to have been resolved. Captains seemed to have become accustomed to the EM alarms, and even appreciated the cold storage warnings.

Current involvement in electronic monitoring

Since the original LTFV EM gear was installed in 2013, many improvements have been made to their system. The system now onboard the vessel is considered to be "fourth generation" with advancements made in several areas, including the use of artificial intelligence, improved video reviewing, reliability, and tamper-proofing.

All of the technical support for the LTFV EM system is provided "in-house" by technicians based in China.

Although NORMA has the EM data from the TNC project, it has not asked for the LTFV EM data. Should they ask, the company indicates that raw video data would be provided.

Video cameras can be placed in several locations on a longline vessel. (Image: © Lian Cheng)

NORMA had people to review the video data during the TNC EM project. The company spot checks their EM data, but does not do a full review of video recordings, except for trips with incidents such as accidents or fish quality problems. The company has the attitude that the purpose of EM is to help them with technical issues, not for compliance purposes: "no point in self-policing". They did, however, do spot checks for shark finning in 2013, when finning became a major global concern. When technical issues are detected in the review process, they are reported to the chief operating officer and fleet manager.

Has EM data from Luen Thai vessels ever uncovered damaging incidents? According to Luen Thai management, during the TNC EM project, two embarrassing situations were detected by NORMA staff reviewing the EM data. One concerned the unhooking of a ray on deck, and the other was about a small whale on deck.

Why has Luen Thai embraced EM?

There are several reasons why LTFV has adopted EM without being forced to do so by the FSM government. As mentioned above, EM was originally developed as a tool for the company to monitor their distant-water fleets, and it has been quite effective for that objective. Other reasons cited by the company are:

- The low threshold requirement of 5% human observer coverage for longline vessels required by the Western and Central Pacific Fisheries Commission leaves a significant gap in monitoring logbook data that can be captured by EM.
- The Technology for Tuna Transparency (T-3) Challenge, an initiative of the FSM president to move towards full transparency in tuna fisheries, was a motivating factor in getting LTFV to be more involved in EM, consistent with being a good corporate citizen.
- LTFV is in a fishery improvement project (FIP) with the Thai Union Group, a Thailand-based producer of seafood products. The terms of that FIP stipulate that for LTFV to sell tuna to the Thai Union Group, there must be EM on the vessels within two years (i.e. by September 2023).
- Throughout the world, the management of tuna fisheries is increasingly making use of EM, and it is only a matter of time before EM is a requirement for participation in the major tuna fisheries of the central and western Pacific.
- Following from the above point, LTFV with its IT capabilities saw a future business opportunity in providing EM support (including video review services) to a large number of non-company vessels.

The above points together created a situation in which it is simply good business sense to Luen Thai to have EM onboard their vessels.

Cost considerations

According to LTVF management, the current initial cost of onboard EM gear is about USD 4000–5000 per vessel. The monthly cost of EM per vessel is about USD 1500, which is mostly for analysis for company purposes of the data generated. Luen Thai's thinking is that the company can and should bear those costs of this monitoring tool because it is being used for their own commercial purposes.

On the other hand, Luen Thai feels that the cost of the analysis of EM data (including video review) by a non-Luen Thai entity for other purposes, such as compliance, should be the responsibility of that agency. Simply stated: "If they want it, they should pay for it".

Concluding remarks

A favourable situation has come about in which Luen Thai has adopted EM on its longline vessels in FSM for its own commercial purposes, and has offered to make the raw EM data available to FSM's fisheries management agency.

In many respects, this could be considered a win-win situation. For Luen Thai, EM is both an operational tool and supports the sustainability certification (Marine Stewardship Council certification), but the company needs an independent party to verify compliance with FSM's laws and regulations. NORMA provides that independence, scrutiny and verification and, should NORMA wish, is also able to obtain raw EM data to determine compliance of the company's fishing activities with the country's legislation.

Although this arrangement seems quite positive, further consideration appears to be required in two areas:

- The issues associated with using EM for commercial monitoring purposes versus using it for compliance purposes: Can a vessel operator function properly and impartially when in control of an EM system that aims to fulfill both roles effectively?
- The costs associated with using company-generated data for compliance purposes: Will the government or non-governmental organisations be willing to shoulder the costs of the components of the EM system that are associated with compliance?

References

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