Thailand National Observer Program

Relates to agenda item: 5.2 Working paper ☑  Info paper ☐

Delegation of Thailand

Abstract

This paper introduces the Electronic Reporting and Electronic Monitoring System (ERS and EMS) that is the requirement by law for the Thai overseas vessel. Although the priority of the using is for compliance purpose, the system has the capacity to record and report the scientific fisheries data and information to fulfill the scientific purpose.

So, the presentation of this paper is to recommend the Scientific Committee (SC) to include study of Thailand on the efficiency of electronic observer program to the SC working plan in order to identify the minimum requirement in the electronic observer devices in complement the human observer scheme. The determination on the proportion of human observer and electronic observer coverage is the main objective of the proposed work plan.

Recommendations (working papers only)

1. SC should review the minimum coverage of onboard observer
2. SC should include the development of the electronic observer program to collecting the scientific information in a SC Work Plan;
3. The objective of the work plan on the development of the electronic observer program should be to identify the minimum requirement in the electronic observer devices in complement the human observer scheme and to determine the proportion of human observer and electronic observer coverage.
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1. Introduction

After a long history of the enforcement of the Royal Fisheries Act B.E. 2490 (1947), the Royal Ordinance (RO) on Fisheries B.E. 2558 (2015) has been issued to supersede additionally with the new implementing rules to control the oversea fisheries. The issuing of the RO 2558 and the according implementing rules is to reflect the current situation and context as well as to conform the SIOFA CMMs that Thailand has become a member, since 21 May 2017. The principle of the control is to effectively monitoring of vessel before port out, during operation and until the vessel return to the port of Thailand.

One among other circumstances of control, the Electronic Reporting and Electronic Monitoring System has been introduced and used. Although the priority of the using is for compliance purpose, the system has the capacity to record and report the scientific fisheries data and information. However, its minimum capacity requirement to be analysed and determined.

This paper introduces the Electronic Reporting and Electronic Monitoring System (ERS and EMS) that is introduced to use in Thai oversea fleet. The paper aims to recommend the Scientific Committee (SC) to include this pilot study into the SC working plan. We expect that with the support of the SC, we will be able to identify the minimum requirement of the electronic observer devices in complement the human observer scheme. Then, the proportion of human observer and electronic observer coverage can be determined.

2. Monitoring Control and Surveillance System

The minimum requirements of the authorized oversea fishing vessels and carrier include the installations of the VMS, ERS and EMS, the submission of the transshipment plan before port out (PO); the submission of logbook, transshipments request and declaration via ER; port-out and port-in only at the designated ports; record fisheries information in the provided paper logbook and placing onboard of human observer (Table 1 and Figure 1). This package of system allows the verification of data and information.

<p>| Table 1 Minimum requirement for Thai oversea fishing vessels and carriers |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|</p>
<table>
<thead>
<tr>
<th>VMS</th>
<th>Transshipment plan</th>
<th>Port-out &amp; Port-in at Designated Port</th>
<th>Paper Logbook</th>
<th>E-Reporting System</th>
<th>E-Monitoring System</th>
<th>Human Observer</th>
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<thead>
<tr>
<th>CCTV</th>
<th>winch sensors</th>
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3. Observer Scheme

3.1 Human Observer

The Royal Ordinance on Fisheries B.E. 2558 (2015) and amendment has the provisions on fisheries observer requirement, Section 50 and 51. Observers have a duty to observe, record and collect data and information for the scientific and compliance purposes. The observers will be qualified and approved by DOF Director General only after obtaining the observer training based on the FAO Guidelines for Developing an at-Sea Fisheries Observer Program. The training course included the onboard training that particularly emphasized the learning on trawl configuration which is the major fishing gear of Thai fleet as well as the species identification in a multi-species situation. Currently, there are 22 qualified observers for SIOFA vessels. The DOF also hold a training course for debriefers or training for the trainer course. Debriefers are the ones who in charge the briefing session for observers befor their deployment as well as debriefing session when they return. The briefing and debriefing will ensure the quality of the collecting data and information as well as to improve observer capacity and performance. Currently, the fisheries biologist, of Department of Fisheries are working as debriefers of observers.

As to comply with the SIOFA CMM 2017/02, CMM for the Collection, Reporting, Verification and Exchange of Data relating to fishing activities in the Agreement Area (Data Standards), DOF requires the authorized fishing vessels undertaking bottom fishing in the Agreement Area having the observer onboard as following criteria.

**Onboard observer coverage:** (a) using trawl gear has observer coverage for the duration of the trip (100% coverage). (b) using any other bottom fishing gear types have 20% onboard observer coverage in any fishing year.

**Transshipment Observer:** In case the vessels request to transshipment at sea, the vessels must have transshipment observer for 100% coverage of the transshipment period.
3.2 Electronic Observer System

The electronic observer system comprises 2 main components: Electronic Reporting System (ERS) and Electronic Monitoring System (EMS).

**Electronic Monitoring (EM):** Firstly, the component includes a CCTV that equipped to the vessel to continuously records the video of the activities on fishing operation, transshipment and transfer of a whole period of the trip and then used to pursue the monitoring. Secondly, the electronic sensors are the component attached to winches, cranes and hatch. Any move of these gears and equipment, the photo snapshot will be automatically taken and sent via satellite to the Fisheries Monitoring Center (FMC), Department of Fisheries. The signal transmitting from winch means the start and end of the fishing operation which accordingly indicate the fishing effort. In addition, the manual photo snapshot is an available function for competent officer to remotely snapshot a photo of a particular period of time. This EM is the additional components to VMS. Thus, the video and photos will be accompanied with the footage information that synchronized and derived from VMS. So, the activities can be either real-time monitored or examined afterwards from the recording videos.

**Electronic Reporting System (ERS):** is an electronic component comprising reporting and requesting functions. The reporting function is available to report data and information on fishing and transhipment activities from the vessel to the FMC, Department of Fisheries. The first category of the report function is the reporting of the fishing data recorded in the electronic logbook which is built-in the ERS. The required timeframe of the report is at least once a day of data separated in a single set of fishing. So, the information based on the designed logbook template can be received by scientists of the DOF on a daily basis. The second category of the report function is the reporting of activities authorized by the DOF such as transshipment declaration, transfer declaration and loading/landing declaration. The requesting function is available for the master of the vessel to request the authorizations from DOF such as transshipment request, crew transfer request and loading/landing request. So, the ERS is the two-way communication system that allow the FMC, DOF to receive the scientific fisheries data during the trip of the vessel. The data is in electronic format that can facilitate the management and analysis afterwards.
Figure 2 CCTV installed onboard and its snapshots
Figure 3 the electronic sensors attached to winches, cranes and door of fish hatch to detect fisheries activities.

Figure 4 Processors and connectors for satellite data transmission
Figure 5 The display window of electronic system for monitoring by competent officer
A. Opened Hatch  
B. Closed Hatch

Figure 6 Snapshots transmitted via satellite from the detected sensors of the crane and hatch to the electronic monitoring system of officer
Figure 7 Snapshots from polling for suspicious behavior such as drifting of vessel
Figure 8 The display window of requesting for permission and reporting through the electronic Reporting system (ERS)
3.3 Electronic observer in application of scientific purpose

<table>
<thead>
<tr>
<th>Scientific data area</th>
<th>Human observer coverage (%)</th>
<th>Electronic Observer coverage (%)</th>
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<tbody>
<tr>
<td>1. Effort</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Gear configuration</td>
<td>100/20</td>
<td>na (deriving prior to port out)</td>
</tr>
<tr>
<td>• Number of setting</td>
<td>100/20</td>
<td>100</td>
</tr>
<tr>
<td>• Number of fishing hour</td>
<td>100/20</td>
<td>100</td>
</tr>
<tr>
<td>2. Fishing ground</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Position of settings &amp; hauling</td>
<td>100% of tracking</td>
</tr>
<tr>
<td>3. Catch</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• species/amount</td>
<td>100/20</td>
<td>To be studied</td>
</tr>
<tr>
<td>• Incidental catch species/amount</td>
<td>100/20</td>
<td>To be studied</td>
</tr>
<tr>
<td>• Releasing species/amount</td>
<td>100/20</td>
<td>To be studied</td>
</tr>
<tr>
<td>• Discards species/amount</td>
<td>100/20</td>
<td>To be studied</td>
</tr>
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3.4 Cost and Benefit

Thai fleet are mostly the trawlers of the sizes between 100-400 GRT. These overseas vessels are required by national regulation to be equipped with the VMS and electronic observer. However, this equipment is costly. Apart from the first payment for equipping between 20,000-27,000 USD, it also needs a monthly payment for the airtime operation of between 170-1,600 USD, depending on the package size of data choosing by fishers. Moreover, to comply SIOFA CMM 2017/02, the vessels authorized to operate in the SIOFA area of competent are required to placing observer onboard for 100% coverage for trawler. It is another additional cost for fisheries in SIOFA area. Before became a member of SIOFA, Thailand required all overseas vessels to placing observer for only 5% of operations which was comply to the IOTC Resolution 11/04 on a Regional Observer Scheme. The payment for observer was 125 USD/days. It is a very high rate when applied to SIOFA vessels as the prices of multispecies of demersal fish caught by bottom trawling nets are much lower than tunas. Previously, it was not too difficult for fishers to afford on the additional cost for placing observers for 5% coverage. However, when the 100% coverage has been required, this cost factor has affected fishers to decide whether they continue their trawling fishery while observer thought is the more risk on working onboard of the small vessel where shelter is either limited. The negotiation between fishers and group of observers took place many times with the Department of Fisheries as the meditator, but there were no agreed the rate of payment. Lastly, by the end of February, 2018, the Department of Fisheries decided to seek for only the qualified observers who are willing to work with the payment of 70 USD/Day with the intention to reduce the cost of the vessel and maintain fishing operation in SIOFA area accordingly.
With the long term perspective, after effective and stability of an electronic observer the Department of Fisheries propose to complement the human observer with the electronic observer, based on the SIOFA CMM 2017/01 Para. 33 (a), 33 (b) and 33 (c). Thus, this might reduce the cost for fishers in a long-term basis. In this regard, Thailand submitted the working paper to the Scientific Committee to review in the minimum coverage of onboard human observer as well as to determine the proportion of the complimentary of an electronic observer to the human observer.