Western and Central Pacific Fisheries Commission

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E-REPORTING TRIALS CONDUCTED BY SPC
IN WCPFC TUNA FISHERIES

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1. Introduction

The SPC/OFP has been requested by several of their member countries to investigate the potential of E-Reporting in WCPFC Tuna Fisheries in collaboration with the FFA, WCPFC and the PNAO.

SPC/OFP is currently collaborating with the WCPFC to look at the **broader potential of E-Reporting and E-Monitoring in the region**[2] as an important 'top-down' approach in the move towards large-scale implementation in the future.

SPC/OFP is also considering one of the many 'bottom-up' approaches that are currently being trialled by different agencies throughout the region with two E-Reporting trials:

- **eTUBS**: On-board observer data entry system[3]
- **eTUNALOG**: an on-board logsheet data management system for fishing vessel which has at its core the smart PDF form [4]

These trials are aimed at gaining some practical experience in implementing and managing E-Reporting initiatives and obtaining feedback on what might/might not be possible at the technical level, but acknowledges that it is important to have an overarching 'framework' for E-Reporting (and E-Monitoring), which is the subject of the separate WCFPC/SPC collaborative study[2].

The following sections provide a brief update on the status of these trials and readers are directed to the respective web site links below for further background information. The SC is encouraged to review the information in this paper and provide feedback and/or expressions of interest for further trials.

2. Trial of on-board observer data entry - eTUBs

eTUBS is a web-based OBSERVER database management system developed by the SPC/OFP to enter purse seine and longline observer data collected on the Regional standard observer forms (compatible with WCFPC Regional Observer Programme [ROP] data standards).

eTUBs has been installed and operational in the SPC/OFP offices since late December 2012 and is used to process all observer data, including the designated ROP data. **eTUBs** is also installed and operational in the WCPFC Secretariat offices, FFA offices (for the US purse seine Treaty observer programme observer data), in addition to the offices of PNG National Fisheries Authority and Solomon Islands Fisheries, on a trial basis.

Features of eTUBS include:

- User-friendly data entry forms that correspond to the regional standard observer data collection forms;
- Extensive on-line error checking built into the system to ensure the data quality;
- Compatible with common web browsers, maximising the user-friendliness and logical navigation between forms;
- Comprehensive reporting system providing information retrieved from one observer trip to all observer data.

Trials for on-board observer data entry by the observer using the previous version of TUBs installed on a laptop in the purse seine fishery were successfully conducted in collaboration with the

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[2] http://www.spc.int/oceanfish/en/ofpsection/data-management/wcpfc/e-reportingmonitoring/383-spcwcpfc-e-reportinge-monitoring-study-project-objectives

[3] http://www.spc.int/oceanfish/en/ofpsection/data-management/spc-members/e-reporting/380-etubs-on-board-observer-entry

[4] http://www.spc.int/oceanfish/en/ofpsection/data-management/spc-members/e-reporting/379-etunalog-smart-pdf-manager

Federated States of Micronesia (FSM) National Oceanic Resource Management Authority (NORMA) during 2011-2012. SPC/OFP and NORMA are planning more comprehensive trials during the second half of 2013, with an E-Reporting consultant contracted to oversee the trials of on-board observer data entry out of in Pohnpei over a 3-4 month period.

3. On-board observer data entry – a potential scenario ?

The following scenario for large-scale implementation of on-board observer data entry is currently being investigated. Essentially, it places the onus of purchasing and maintaining equipment used by the observer on the vessel, and the establishment of technical support staff in each of the major ports for purse seine unloading/transhipments to oversee the training of observers in using eTUBs, installation of eTUBs and conduct of technical audits of the computer equipment used by observers on-board vessels.

- **National and regional authorities consider establishing guidelines** with the requirement for fishing companies/vessels to support the observer data collection and data processing on-board the vessel. This will include, but not be restricted to:·
  - o Clear specifications for the configuration of computer equipment/software (i.e. Windows-based laptop) to be purchased and maintained by the vessel in sound working order, including backup equipment in the event of failure;
  - o Requirement for the vessel to cover the costs for purchase, ongoing maintenance and replacement of the "observer" laptop (that remains on-board the vessel) according to specifications;
  - o Requirement for the observer's laptop to be available for software updates (e.g. latest version of eTUBs) and hardware/software technical audits at any time by the authorised on-shore technical support staff;
  - o Requirement for the vessel to act on the recommendations from the technical audits prior to embarking on the next trip; and
  - o An indication of what will happen in the event of non-compliance with these requirements (which would require the observer to fall back to manual recording on the hard-copy forms).

- **The observer will only enter non-sensitive ROP observer data** on-board the vessel using the eTUBS system, so, potentially, the vessel would be authorised to receive these data. Non-sensitive data make up the most of the data entered by the observer. The observer would continue to record the sensitive observer data (e.g. GEN-3 form) on hard-copy forms and, since the volume of non-sensitive data is very small, these data can be entered during the debriefing session when the observer returns to port.

- At the end of the trip, the observer will back-up their data onto their own external hard-drive through an option in the eTUBs system.

As soon as possible following the end of the trip, the observer's data will be audited as a part of the debriefing process which will involve the locally-based technical support officer and the observer debriefer.

Once the data have been cleared, the technical support officer will facilitate the import into the national TUBS observer system in place, and also facilitate transmission of data to the respective regional agencies (SPC, WCPFC, FFA) according to agreed data protocols.

4. eTUNALOG - Trial of Logsheet entry system for purse seine vessels -

eTUNALOG is an application designed to run on any Windows-based laptop/tablet/desktop installed on-board commercial tuna fishing vessels operating in the WCPFC Area. The application is designed to replace the need for skippers to manually complete hard-copy vessel trip LOGSHEETS for submission to national and sub-regional authorities as a licensing condition.

At this stage, eTUNALOG covers the purse seine fishery but is planned to be extended to the longline fishery by the end of 2013.

eTUNALOG features:

- Use of a user-friendly smart PDF form which is identical to the regional standard hard-copy LOGSHEET form, thereby, satisfying licensing conditions, and the vessel skipper is already familiar with the format for recording information, so there is a quick uptake in using the system;
- Extensive on-line error checking built into the PDF form to ensure the data quality;
- Data in concise format (XML file) are encrypted and sent as email attachment to authorised data recipients;
- Data can be transmitted back to shore via email at any time; that is, complete or incomplete trip data can be transmitted to the authorised onshore base(s) at any time;
- System will allow for many authorised recipients to receive the emailed data simultaneously;
- On receipt at the national fisheries authority offices, the data are easily uploaded into the TUFMAN database system through a series of prompts which includes an audit of the data;
- The data structures can be made available for import into other database systems, as required;
- An in-built reporting system will allow the vessel and the fishing company to produce reports relevant to their requirements;
- Future versions will include PDF digital signatures and fishing company stamps, where these may be required; and
- The application will be available, free of cost, after online registration.

SPC/OFP is currently conducting a trial with several fishing companies in Solomon Islands and New Zealand, with further trials planned in Federated States of Micronesia and Marshall Islands in August/September 2013.

4.1   Solomon Islands purse-seine trial

eTUNALOG was first trialled with the a purse seine vessel from the Solomon Islands National Fisheries Development (NFD) in March 2013, in collaboration with Solomon Islands Ministry of Fisheries and Marine Resources (MFMR). The first trial was very successful and it was quickly extended to the other five vessels in their fleet by June 2013 with the skippers and the company happy with the product. The company acknowledges the following benefits of the system:

- The possibility to transmit the information to NFD in a more timely basis;
- The possibility to have daily updates from their fleet, thus able to monitor in near real-time the catch of their vessels;
- The availability of a reporting tool (later this year), which will enable them to produce their quarterly reports in a more automated way

The main problem encountered with the trial to date is that the MFMR licensing conditions require the skippers to record the vessel's catch/effort data on the standard regional purse seine logsheet form, which in addition to the smart PDF, is double the work and is an added burden on the skippers. This problem has now been overcome with the latest version of the smart PDF which is now identical to the standard regional form and can be simply printed and signed prior to submission to the national fisheries authorities. In the future, the option of having digital signatures automatically

added to the PDF version of the logsheet will be available without the need to print and sign manually.

An **eTUNALOG** XML data file import module has been implemented within the TUFMAN database (installed at MFMR offices) which facilitates the automatic upload of the logsheet data (in XML file format) into the TUFMAN database, thereby avoiding the need for data entry; data for a number of trips have already been successfully imported into the database. This feature will now allow MFMR to report on the catch/effort of these vessels on a much more timely basis than before.

4.2   New Zealand purse-seine trial

SPC provided a presentation of **eTUNALOG** for the New Zealand Ministry of Primary Industries (MPI) staff and two New Zealand fishing companies operating Purse seine vessels in the tropical WCPFC area in July 2013.

An outcome of the presentation/meeting was that both fishing companies have readily agreed to trial the **eTUNALOG/Smart PDF** system on one of their vessels. One company expressed immediate interest in using eTUNALOG on all their vessels, provided they didn't have to enter both the smart PDF and the standard regional purse seine (which is a licensing condition); at the time, this wasn't possible, so to satisfy the licensing obligation, a trial of only one vessel was planned.

Since this issue had been already highlighted in the Solomon Islands trial (and would likely be a common issue elsewhere), the latest version of the smart PDF form in eTUNALOG has been updated to be identical to the regional standard logsheet which should now satisfy the requirement that vessels only need to complete the smart PDF form only, then merely submit a print-out of the smart PDF form after it has been signed. SPC was in the process of getting approval for using the smart PDF submission from the relevant national authorities at the time writing this paper.

Both companies have recently been sent the entire eTUNALOG system for installation on their trial purse seine vessel, and we are now awaiting feedback as soon as they will have completed a fishing trip.

4.3   Other potential trials

SPC, in conjunction with the national fisheries authorities of FSM (NORMA) and Marshall Islands (MIMRA), plan to conduct trials of eTUNALOG in mid-late 2013 on locally-based purse seine vessels. SPC has also received requests for trials of eTUNALOG on longline vessels in the Cook Islands, Solomon Islands and Vanuatu, although these trials are more likely to occur towards the end of the year.