Five Years of Electronic Monitoring Onboard Tropical Tuna Purse Seiners

Side Event • Víctor Restrepo, Jon Ruiz, Gala Moreno
Friday, 24 August 2018 • 93rd Meeting of the IATTC
Background

• \( \approx 86\% \) — Percentage of tropical tuna caught by purse seine vessels in the EPO
• \( >230 \) Tropical tuna purse seine vessels authorized by IATTC
• 100% observer coverage only applies to Class 6 PS vessels
• 28% of object sets are made by vessels below Class 6
• Need to improve monitoring: increase coverage and collect new data
• Observers: a single person can not follow all activities onboard
• Some vessels do not have space for a human observers
• Observer safety concerns
ISSF Conservation Measure 4.3(a) requires ISSF Participating Companies to "conduct transactions only with those large-scale purse seine vessels that have 100% observer coverage (human or electronic if proven to be effective). Applies to PS vessels >335m³ (some below Class 6).

First EMS pilot studies on tuna purse seiners: AO, IO, CPO. Funded by ISSF
Since 2012, at least 4 different EMS vendors have been tested on PS.
The ICCAT/IOTC Scientific Committees recommended that standards for EMS would need to be developed, specially for purse seiners.

These minimum standards were developed and adopted by ICCAT/IOTC.

Pilot studies have given way to the implementation of EM programs (e.g. Spain).
EMS capabilities to conduct observer duties

- 73% Capable
- 18% Adjustments needed
- 9% Not capable

- Vessel track
- Fishing set: date/time
- Fishing set: location/FAD vs. FSC
- Total catch by set
- FAD monitoring
- Bycatch estimate
- Bycatch handling (release)
- Discards

- Target species composition
- Size frequency

- Collection of biological samples (e.g. gonads, otoliths, spines)

Some level of human coverage will always be needed
EMS capabilities to conduct observers duties

Location and type of sets

FAD

FSC
EMS capabilities to conduct observers duties

Total catch by set
EMS capabilities to conduct observers duties

Bycatch estimates

Good for large specimens
EMS capabilities to conduct observers duties

FAD monitoring

Good. Also tested on supply vessels
EMS capabilities to conduct observers duties

Target species composition

Needs work
<table>
<thead>
<tr>
<th>CAPABILITIES</th>
<th>POTENTIAL USES</th>
</tr>
</thead>
</table>
| **COMPLIANCE** | • Area/time closure monitoring  
| | • Full retention, or obligation to release certain species  
| | • Total Catch in a given EEZ  
| | • High seas transshipment  
| | • Ecolabels  
| | • Use of FADs |
| **SCIENCE** | • National observer program (limited even if many tasks included in the protocol can be conducted) |
Minimum standards

- EMS pilot studies on purse seiners have shown that EMS should be more than simply installing cameras.
Minimum standards for EM

Before the trip
- Customized to vessel level
- Certified by a third party

During the trip
- Robust
- Secure
- Independence
- Autonomy

After the trip
- Dedicated software
- Data analysis & reporting
- “Dry observer” training
- Standardize output: Compatible with DBs
Data collected by EM would only be useful if it is collected in a consistent way, following developed minimum standards for PS.

Both human observers and EMS are complementary, each with their own weaknesses and strengths.

- **Science**: Currently limited for a purely scientific monitoring program, covering all observers’ tasks. However, EM is valuable where it is difficult to place an observer onboard, or to increase the coverage achieved by human observers.

- **Compliance**: EM has the advantage from the point of view of inviolability of the data, the possibility to review images as many times as desired and the lower cost.

EM also useful when there are human safety concerns with observers
Next steps in IATTC region

Improving data collection

• Proof-of-concept study is in progress
  

• FAD use by Class 1-5 vessels: Electronic monitoring (EM)

• Test EM for collecting catch and operational information, including data on FAD deployments and FAD sets.

Support from fishing industry needed to advance towards EM implementation
Thank you

For more information:

- ISSF 2018-04 Minimum Standards for Electronic Monitoring in Tropical Tuna Purse Seine Fisheries


- ISSF 2018-03 Efficiency of Electronic Monitoring on FAD-Related Activities by Supply Vessels in the Indian Ocean