Session 8: Services and Information for Maritime Awareness

GEO Blue Planet Symposium
Maryland
Reinforcing and moving beyond Pacific SIDS monitoring of illegal, unreported and unregulated fisheries activities.

James T. Movick
Director-General
Pacific Islands Forum Fisheries Agency

GEO Blue Planet Symposium
College Park, Maryland
May 31- June 2, 2017
1. Defining the problem: Current nature of IUU in the Western Central Pacific Ocean

2. The current FFA regional MCS framework

3. Emerging threats and opportunities
1. Defining the problem: Current nature of IUU in the Western Central Pacific Ocean
Getting a better understanding of IUU in the PIC region

Last formal quantification in 2008 – as part of a global study:
“one in every 5 fish is IUU”
“$23.5 billion”
“If 5 of you go to a restaurant and order tuna, one of you is eating illegal fish”
“PICs losing USD$3 - 5 billion in tuna each year – being stolen from them”

Quantification of IUU Fishing Report launched 15th March 2016
### By risk type

<table>
<thead>
<tr>
<th>Risk</th>
<th>BE (t)</th>
<th>90% range (t)</th>
<th>BE ($)</th>
<th>90% range ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unlicensed fishing</td>
<td>11,078</td>
<td>7,351 – 14,945</td>
<td>$20.65m</td>
<td>$15.28m – $26.22m</td>
</tr>
<tr>
<td>Reporting violations</td>
<td>167,341</td>
<td>157,387 – 179,848</td>
<td>$313.42m</td>
<td>$270.60m – $377.01m</td>
</tr>
<tr>
<td>Other license conditions</td>
<td>88,440</td>
<td>66,957 – 109,557</td>
<td>$117.93m</td>
<td>$92.06m – $143.49m</td>
</tr>
<tr>
<td>Post-harvest risks</td>
<td>39,580</td>
<td>21,429 – 61,151</td>
<td>$164.12m</td>
<td>$81.69m – $266.49m</td>
</tr>
</tbody>
</table>

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**Notes:**
- BE (t) represents the base estimate in tonnes.
- 90% range (t) indicates the 90% confidence interval for the estimate in tonnes.
- BE ($) represents the base estimate in dollars.
- 90% range ($) indicates the 90% confidence interval for the estimate in dollars.
By sector

<table>
<thead>
<tr>
<th>Sector</th>
<th>BE (t)</th>
<th>90% range (t)</th>
<th>BE ($)</th>
<th>90% range ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purse seine</td>
<td>212,895</td>
<td>190,853 – 235,115</td>
<td>$225.20m</td>
<td>$200.35m – $251.56m</td>
</tr>
<tr>
<td>TLL</td>
<td>59,637</td>
<td>42,435 – 82,308</td>
<td>$272.55m</td>
<td>$184.90m - $385.62m</td>
</tr>
<tr>
<td>SLL</td>
<td>33,907</td>
<td>25,108 – 45,177</td>
<td>$118.36m</td>
<td>$87.67m - $158.54m</td>
</tr>
</tbody>
</table>

- **Southern LL**: 11%
- **Purse seine**: 70%
- **Tropical LL**: 19%

- **Southern LL**: 19%
- **Purse seine**: 37%
- **Tropical LL**: 44%
Key messages – better defining the current IUU problem in the WCPO

It’s the licensed fleet!!

- Vessels licensed in FFA EEZs or authorised to fish on high seas responsible for 95% of estimated IUU activity

- Implications for MCS planning and investment

Stronger catch monitoring arrangements are required in the Longline sector

- Very limited independent data to verify LL catch – critical uncertainty in IUU estimates, weakness in MCS regime
Considerable uncertainty exists on the extent of illegal transhipment

- Information base weak
- Key uncertainty in overall estimates, particularly for LL

Illegal, unlicensed, fishing appears to be an issue at the margins

- Both on the fringes of FFA area (e.g. Palau, western PNG, east), and amongst risks – overall, “I” Illegal fishing is only 3.4% of estimated IUU value and less than 4% of total IUU volume
2. The current FFA regional MCS framework
Information is key
Evolution of information management

Disparate national systems, less accessible, harder and costlier to maintain

2010

<table>
<thead>
<tr>
<th>Boarding/Inspection</th>
<th>CDR REG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Licensing</td>
<td>CDR FAL</td>
</tr>
<tr>
<td>TUFMAN1</td>
<td>CDR OBS</td>
</tr>
<tr>
<td>CES</td>
<td>CDR POD</td>
</tr>
<tr>
<td>CDR VAP</td>
<td>FFA VMS</td>
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<tr>
<td>WCPFC RFV</td>
<td></td>
</tr>
</tbody>
</table>
Evolution of information management

Disparate national systems, less accessible, harder and costlier to maintain

More connected systems, more accessible, easier to maintain, easier to integrate data
Evolution of information management

**2010**

- Boarding/Inspection
- Licensing
- TUFMAN1
- CES
- CDR VAP
- CDR REG
- CDR FAL
- CDR OBS
- CDR POD
- FFA VMS
- WCPFC RFV

**Today**

- RSP
- RIMF/IMS
- TUFMAN2
- Dorado
- PNAO FIMS
- WCPFC RFV/IMS

**Tomorrow?**

- Single user interface seamlessly accessing, integrating and analysing all cloud-based fisheries databases throughout the region

**Disparate national systems, less accessible, harder and costlier to maintain**

**More connected systems, more accessible, easier to maintain, easier to integrate data**
|     | AUS | CI  | FSM | FIJ | KIR | RMI | NAU | NZ  | NIO | PAL | SAM | SI  | TOK | TUV | VAN | AUS | NZ  | FRA | US  | Status         | LICENSE | SURVEIL | VMS | OBS | VESSEL LOG | VESSEL VIOLATION | ACCESS AGREEMENTS |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----------------|----------|----------|-----|-----|-----------|------------------|------------------|
FFA Regional Surveillance Picture (RSP) Data fusion and analysis

AIS
WCPFC VMS
FFA VMS

Green
Orange
Red
<table>
<thead>
<tr>
<th>Reported By</th>
<th>CI Type</th>
<th>Date</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>FSM Maritime Police</td>
<td>Boarding</td>
<td>20 Jun 2015</td>
<td></td>
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<tr>
<td>FSM Maritime Police</td>
<td>Boarding</td>
<td>31 May 2015</td>
<td></td>
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<tr>
<td>FSM Maritime Police</td>
<td>Boarding</td>
<td>04 Jan 2015</td>
<td></td>
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<td>FSM Maritime Police</td>
<td>Boarding</td>
<td>30 Nov 2014</td>
<td></td>
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<tr>
<td>FSM Maritime Police</td>
<td>Boarding</td>
<td>21 Nov 2014</td>
<td></td>
</tr>
</tbody>
</table>
### TAIYO Pohnpei (FFA VMS)

**Compliance Index**: 🌟🌟🌟🌟🌟 0

**Remarks**: 

06° 59.0' N, 158° 10.1' E (FM) at 25th August 2016, 00:36:00 UTC

**Update**

<table>
<thead>
<tr>
<th>Name</th>
<th>Type</th>
<th>End Date</th>
<th>Details</th>
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<tbody>
<tr>
<td>Taiyo Micronesia Corporation</td>
<td>Vessel Owner</td>
<td>2017-06-11</td>
<td></td>
</tr>
<tr>
<td>Ikuo Kimura</td>
<td>Fish Master</td>
<td>2015-04-30</td>
<td></td>
</tr>
<tr>
<td>Kazunori Oyama</td>
<td>Vessel Captain</td>
<td>2015-04-30</td>
<td></td>
</tr>
</tbody>
</table>

3 related vessels located

**FFA Internal Use Only**
How successful is it?
World leading….

- Bulk information collected
- Sharing exceeds anywhere in the world
- Systems convert data to intelligence
- It works…

IUU estimates (m)

2009   2016
3. Emerging threats and opportunities
Currently FFA RSP and MCD framework looks primarily at tuna IUU fishing – NOT:

- “Blue boats” – adaption underway
- Coastal fisheries MCS small boats <10 metres
- Fisheries related crime (tax)
- Other transnational risks: (Immigration and people smuggling; Drugs and other “civil” contraband; Weapons movement and proliferation)
“Tuna vessels”  All vessels
Vietnamese wooden vessels fishing for beche de mer (sea cucumber)

Investigations suggest vessels are being displaced from fishing illegally in Indonesia by stringent enforcement action.

Caught/Detected in Palau, FSM, RMI, PNG, New Caledonia, Australia, Solomons Islands and Vanuatu
• Information and Intel are only useful if there’s a response capacity
• PPB, and now PMSP provide that
• Sharp declines in illegal fishing (now only 4%) are due to high visibility operations
• Guardian Class vessels will be another boost
Taskable Aerial Surveillance
ffa commenced trials of satellite imagery to complement RSP-Sentinal1

- About 50 images at various resolutions obtained to date (Expensive!)
- Secured ability to integrate into RSP
- Trials revealed potentially large numbers of “uncorrelated targets” – but unable to verify through visual identification
- Trials also had false negatives – imagery missed known contacts
- Keen to develop open access detection algorithms
Other surveillance technology - drones and shore radar

- **UAV’s**
  Requires further trials to ascertain viability given regional scenarios, including: type of platforms, remoteness of target areas, size of coverage areas, costs, technical capacity, maintenance, suitable technology etc.

- **Shore based RADAR**
  Blue boats are detectable by RADAR at short range but comes with a number of expected issues including theft of key components, manning and communication requirements and the difficulty in distinguishing between blue boats and other small coastal vessels.
Emerging areas for earth observation

- Potential to sensibly expand the scope of operation to areas of:
  - High seas fishing and transhipment in particular
  - Regional security
  - Regional pollution control
  - Coastal fisheries MCS
  - FAD monitoring
  - Coral bleaching
  - Sea-level rise and maritime boundaries
  - Search and Rescue
  - Improved coordination and understanding of available and new Ocean observation and analysis tools – Marine Sector Working Group
Pacific Tuna MCS Framework is well developed – integrated multinational surveillance and enforcement – a pretty picture with a bite!

Potential to further enhance the regional MCS framework through earth observation cooperation using existing regional cooperative mechanisms

Further potential to expand into broader security and law enforcement