## Table 1: Summary of additional MCS measures

<table>
<thead>
<tr>
<th>Additional MCS Measure</th>
<th>Risks Addressed</th>
<th>Purpose</th>
<th>Expected Resource Implications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>General Measures</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Integrated information management systems and analytical capability</td>
<td>Various (e.g. 4.9.1, 4.9.2, 4.10.2, 4.12.2)</td>
<td>To collect, store, process and exchange fisheries MCS information for the purposes of enhancing the effectiveness of national and regional MCS activities. To support analysis of regional patterns and trends in compliance to enhance the targeting and effectiveness of national and regional MCS activities.</td>
<td>Major See Project 3</td>
</tr>
<tr>
<td>Standard MCS Operating Procedure Manual</td>
<td>Various</td>
<td>To strengthen and harmonize MCS operating procedures across the FFA membership.</td>
<td>Minimal</td>
</tr>
<tr>
<td><strong>FFA Regional Register</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Compliance Indices</td>
<td>Various</td>
<td>To track the compliance history of each ‘entity’ on the Register (e.g. vessels, masters, owners) to support improved targeting of MCS activities.</td>
<td>Minimal/Moderate</td>
</tr>
<tr>
<td>Pre-fishing inspections</td>
<td>Various</td>
<td>To independently validate vessel information, generate updated photos, distribute education material, as well monitor compliance with relevant measures (e.g. vessel markings, bycatch mitigation equipment on board, etc)</td>
<td>Moderate</td>
</tr>
<tr>
<td>Register of fishing masters</td>
<td>Various</td>
<td>To (a) to raise awareness of regional rules, regulations and reporting requirements amongst fishing masters, (b) improve direct communication between FFA members and (c) allow for the administrative tracking of fishing masters.</td>
<td>Moderate</td>
</tr>
<tr>
<td>Register of vessel owners</td>
<td>Various</td>
<td>To support analysis of patterns and trends in the compliance histories of vessel owners.</td>
<td>Minimal</td>
</tr>
<tr>
<td><strong>VMS</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>RFMO Information sharing</td>
<td>2.3.1, 2.3.2</td>
<td>To allow for the tracking of movement of vessels between ocean basins.</td>
<td>Minimal</td>
</tr>
<tr>
<td>Reciprocal arrangements between WCPFC and FFA/members</td>
<td>2.6.2</td>
<td>To allow coastal states to view VMS polling positions of high seas vessels in near real time where they enter their EEZ.</td>
<td>Minimal</td>
</tr>
<tr>
<td>High Seas Buffer zones</td>
<td>2.6.2, 5.1, 5.2</td>
<td>To allow coastal states to view VMS polling position of high seas vessels in near real time up to 100nm outside their EEZ boundary.</td>
<td>Minimal</td>
</tr>
<tr>
<td>Enhanced VMS data sharing between FFA members</td>
<td>2.5.2</td>
<td>To allow visibility of vessels in adjacent (or other) EEZs.</td>
<td>Minimal</td>
</tr>
<tr>
<td>Port-to-port monitoring</td>
<td>2.5.2, 4.1.2, 4.3.2, 4.14.2, 5.1, 6.1, 5.4.2</td>
<td>To allow for the tracking of licenced vessels throughout their range for the duration of the licence by the licencing state.</td>
<td>Minimal</td>
</tr>
<tr>
<td>Optimised use of alerts</td>
<td>Various (e.g. 2.5.2, 4.3.2, 4.5.2)</td>
<td>To optimize the effectiveness and efficiency of VMS operations at the national level.</td>
<td>Minimal</td>
</tr>
<tr>
<td>Stricter manual reporting requirements</td>
<td>4.3.2 (and others)</td>
<td>To send the message that fishing should not occur unmonitored inside the FFA area and to encourage the carrying of MTU spares.</td>
<td>Minimal</td>
</tr>
<tr>
<td>‘No-go’ zones around sensitive areas (e.g. isolated communities)</td>
<td>4.5.2</td>
<td>To better protect remote and/or sensitive areas where it is difficult and/or costly to deploy an aerial or surface response asset.</td>
<td>Minimal</td>
</tr>
<tr>
<td><strong>Logsheets</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enhanced priority on logsheet submission</td>
<td>4.13, 4.9.1, 4.9.2, 4.10.1, 4.10.2</td>
<td>To continuously improve rates of timely and accurate logsheet submission to 100% in the near future</td>
<td>Minimal</td>
</tr>
<tr>
<td>EMTUs</td>
<td>4.13</td>
<td>To facilitate improved communication with fishing vessels and to improve timeliness of data submission.</td>
<td>Minimal (cost to industry in replacing units)</td>
</tr>
<tr>
<td><strong>Observers/remote monitoring</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Regional Observer Strategy</td>
<td>Various</td>
<td>To support the implementation of the goals and objectives of the FFA Regional Observer Strategy agreed at FFC 67</td>
<td>Variable</td>
</tr>
<tr>
<td>Increased observer coverage on LL</td>
<td>Various</td>
<td>To improve independent monitoring/validation of catch and effort information from the LL fleet, including catches of target species,</td>
<td>Major</td>
</tr>
<tr>
<td>Measure</td>
<td>Description</td>
<td>Cost</td>
<td></td>
</tr>
<tr>
<td>------------------------------------------------------------------------</td>
<td>-----------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>Remote monitoring techniques (e.g. LL drum monitors; on board cameras)</td>
<td>Various To provide independent monitoring of vessels where opportunities to deploy an observer are limited (e.g. by space, habitability, remote operation, etc). To remotely detect and monitor fishing activity.</td>
<td>Moderate (costs involved in trialling and installation)</td>
<td></td>
</tr>
<tr>
<td>100% coverage on all domestic PS vessels</td>
<td>4.7 To monitor compliance with catch retention, FAD prohibition and other management measures.</td>
<td>Minimal (marginal additional costs)</td>
<td></td>
</tr>
<tr>
<td>Sanctions</td>
<td>Administrative sanctions Various To provide an immediate, cost-effective and proportionate response to minor infractions. To increase level of deterrent to minor offences.</td>
<td>Minimal</td>
<td></td>
</tr>
<tr>
<td>WCPFC IUU listing</td>
<td>Various To provide a cost effective method of ‘longarm’ enforcement where effective action is unable to be achieved through traditional methods.</td>
<td>Minimal</td>
<td></td>
</tr>
<tr>
<td>‘Fleet-wide’ sanctions</td>
<td>To strengthen deterrents to non-compliance and encourage voluntary compliance through peer pressure amongst organized fleets of fishing vessels.</td>
<td>Minimal</td>
<td></td>
</tr>
<tr>
<td>Port State Measures</td>
<td>Port State Measures Agreement Various To strengthen cooperation with external ports in enforcing conservation and management measures within the FFA region.</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td>Cooperation with foreign ports</td>
<td>Various To capitalize on the MCS opportunities available at key regional ports.</td>
<td>Major</td>
<td></td>
</tr>
<tr>
<td>Supply Chain Monitoring</td>
<td>Transshipment verification, including 100% observer coverage on carrier vessels Various (e.g. 5.1, 5.2, 4.9.1, 4.9.2) To better monitor/validate catches through the post-harvest supply chain.</td>
<td>Moderate/Major</td>
<td></td>
</tr>
<tr>
<td>Catch Documentation Scheme</td>
<td>4.9.1, 4.14, 4.15, 5.1, 5.2 To (a) better monitor catches of key species throughout the supply chain including supporting the effective implementation of WCPFC CMMs, (e.g. CMM 08-01), (b) improve catch and effort information for scientific purposes and (c) deter IUU fishing.</td>
<td>Likely to be moderate/major</td>
<td></td>
</tr>
<tr>
<td>Voluntary Compliance</td>
<td>Education Various To encourage voluntary compliance by raising awareness of relevant laws, licence conditions, best practice approaches etc</td>
<td>Minimal/Moderate</td>
<td></td>
</tr>
<tr>
<td>Participatory Planning</td>
<td>Various To raise awareness of industry requirements and encourage high rates of voluntary compliance by engaging fishers in the process of developing management frameworks.</td>
<td>Minimal</td>
<td></td>
</tr>
<tr>
<td>Market-based incentives</td>
<td>Various To encourage high rates of voluntary compliance using market based incentives such as eco-labels and non-IUU certification schemes.</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td>Surveillance and Response</td>
<td>Targeted aerial surveillance Various (e.g. 2.3.1, 2.1, 2.5.2, 2.6.2, 4.1.2, 4.3.2) To respond to risks that are unable to be dealt with through more cost effective measures; to improve the MCS planning and information base.</td>
<td>Major (if air hours increased)</td>
<td></td>
</tr>
<tr>
<td>Increased rates of boarding and inspection</td>
<td>Various (e.g. 4.4.2, 4.6.2, 4.10.2, 5.3.2) To increase rates of inspections for offences where compliance inspections are best done in situ; to increase deterrence to non-compliance</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td>Industry/community reporting</td>
<td>Various (e.g. 4.5.2, 2.3.1, 2.5.2) To expand effective surveillance coverage by facilitating industry and community reporting of non-compliance</td>
<td>Minor</td>
<td></td>
</tr>
<tr>
<td>WCPFC</td>
<td>Harmonization of MCS regimes with other RFMOs Various (e.g. 2.3.1) To enhance the cost effectiveness and efficacy of MCS responses for vessels working in multiple ocean basins through improved coordination, information sharing and harmonization between RFMOs.</td>
<td>Variable</td>
<td></td>
</tr>
<tr>
<td>Strengthened compliance review process</td>
<td>Various (e.g. 4.15) To better monitor CCM compliance with CMMs and other obligations (e.g. submission of scientific data).</td>
<td>Minimal</td>
<td></td>
</tr>
<tr>
<td>Other measures</td>
<td>Institutional strengthening in SE Asia 1.1.2, 1.2 To improve data collection and to enhance the capacity of SE Asian nations to effectively implement WCPFC management measures.</td>
<td>Major (funding already secured for WCPFC WPEA project)</td>
<td></td>
</tr>
</tbody>
</table>
### Global Register of Fishing Vessels, incorporating UVIs

Various

To track and identify active fishing and support vessels, as well as trends in global fishing capacity.

Minimal

### Monitoring of effort creep

3.3

To record vessel characteristics and operational patterns to support robust estimates of effort creep over time

Minimal

### Resolution of maritime boundaries

Various

To facilitate effective implementation and enforcement of fisheries management frameworks (e.g., VDS).

Minimal

### Closure of high seas pockets

2.6.2, 5.1, 5.2

To close potential ‘havens’ for IUU activity within the FFA region.

Minimal

### Table 2: Resource implication ratings

<table>
<thead>
<tr>
<th>Resource rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimal</td>
<td>Can be implemented using existing human resources; would require no, or only a small amount of, establishment/ongoing funding (&lt;US$50,000)</td>
</tr>
<tr>
<td>Moderate</td>
<td>Would require a small number of additional staff positions (&lt;5) to establish/operate; would require moderate levels of establishment/ongoing funding (&gt;US$50,000-$500,000)</td>
</tr>
<tr>
<td>Major</td>
<td>Would require a large number of additional staff positions (&gt;5) to establish/operate; would require significant levels of establishment/ongoing funding (&gt;US$500,000)</td>
</tr>
</tbody>
</table>
Additional MCS Measures:

General Measures

Integrated information management systems and analytical capacity
Integrated information management systems are core components of an effective MCS regime. Currently no facility exists for the collection, storage, processing and exchange of MCS information at the regional level, while significant scope exists to improve information management arrangements at the national level. Integrated management systems that allow for the efficient cross-verification of independent data sources (e.g. logsheets, landings receipts, unloading data, observer reports, transhipment reports, etc) can assist in directly addressing a range of key threats (e.g. under-reporting of target and bycatch species), as well as supporting analysis to most cost-effectively target MCS resources. The establishment and optimization of integrated information management systems at both the national and regional levels should be an important consideration for the Regional MCS Strategy. These issues are dealt with in more detail in Project 3.

Enhanced information management systems should also be supported by enhanced MCS analytical capacity at both regional and national levels. This capacity should support the continuous monitoring of risks and drivers and supply ‘value-added’ intelligence to assist with better planning and targeting of MCS activities.

Standard MCS Operating Procedure Manual
An FFA Boarding and Prosecution Manual currently exists. This manual should be updated to take account of new developments under the Regional Strategy. Standard reporting formats, consistent with templates required for entry, storage and exchange through the RIMF, should be developed.

FFA Regional Register
The FFA Regional Register is a key component of the MCS regime operating in the FFA area of interest, and will be a central reference point in the RMCSIS. To further strengthen MCS arrangements associated with the Register a number of enhancements are suggested:

Compliance Indices
The compliance history of each entity (vessel, master, owner) on the Register should be recorded and indexed. The RMCS Facility will have the capability to link all “compliance events” relating to each entity including inspection reports, observer reports, surveillance reports, prosecution history and the like and this information can be used to better inform an MCS responses. For example, a vessel with a ‘clean’ compliance history may be considered of lower priority for inspection than a vessel with a history of non-compliance. Further details on the use of compliance indices are included in Chapter 4.

Pre-fishing Inspections
Pre-fishing inspections are currently included in the HMTCs, though are not in widespread practice. Pre-fishing inspections offer the opportunity to independently validate owner supplied registration information about the vessel, update photos and carry out compliance checks on a range of management measures (check vessel markings, licence information, bycatch mitigation equipment is on board, VMS is functional, prohibited forms of gear are not on board, etc). Pre-fishing inspections also offer the opportunity to distribute awareness raising and educational material including information on species identification, bycatch mitigation, reporting requirements, etc. Consideration should be given to requiring a ‘pre-fishing’ inspection as a pre-requisite to annual registration on the Regional Register. We note a mandatory requirement to have vessels inspected in port may result in complementary benefits including providing an
opportunity to embark observers on vessels that would otherwise not come into port. Inspections could be undertaken in Regional MCS Hubs.

Register of Fishing Masters
Consideration should be given to the establishment of a regional register of fishing masters. The key purpose of the register would be to allow for the administrative tracking of masters, as well as to raise awareness amongst masters of their obligations under the various fisheries frameworks operating in the region. Only masters on the register would be permitted to be in control of a fishing vessel in FFA member waters. A pre-condition of registry may be a requirement to attend an annual ‘induction’ session that outlined the relevant rules and regulations for the areas in which their vessel is licenced to fish, including logsheet and other reporting requirements, bycatch mitigation requirements, closed waters, gear prohibitions, etc. The annual session would also outline any recent changes in CMMs, licence conditions and the like, as well as provide an opportunity for masters to be presented with educational materials (e.g. species ID charts, tagging return information etc).

Annual induction sessions would assist in improving levels of direct communication between FFA member countries and the fishing fleet, as well as allowing opportunity for masters to clarify any rules or requirements on which they were unsure. In the event a master was subsequently prosecuted for an offence, the fact they had participated in an induction session could be brought to the attention of the court and may attract higher penalties. Induction sessions may be conducted by FFA officers stationed at MCS Hubs, by officers of national agencies or in relevant distant water fishing countries by arrangement. Agents may also be required to attend an induction session annually.

Similar to vessels, the compliance history of each master should be monitored and indexed under the RMCS Facility. The compliance and prosecution history of a master will be particularly useful when they take control of another vessel.

Register of vessel owners
Consideration should also be given to deriving a register of vessel owners from the Regional Register. Consistent with vessels and masters, the compliance history of each owner should be monitored and indexed. The vessel owner is responsible for vessel certification and registration on the Regional Register, as well as ultimately for the behaviour of the master. Developing a picture of vessel activities may provide an insight into the way an owner operates and assist in targeting MCS efforts.

VMS

The FFA VMS is a powerful tool to support Regional MCS efforts, and is fundamental to the operation of key regional management arrangements such as the PNA VDS (and possible future LL VDS). Moreover, the recently established WCPFC VMS offers unprecedented monitoring coverage of vessels operating on the high seas adjacent to FFA members EEZs. A number of improvements have recently been made to the FFA VMS system including shifting the hosting to the Macquarie data centre and adopting a ‘thin client’ interface allowing authorised officers to access the system through the internet. Consultations in country almost universally suggested these measures had enhanced the functionality and ‘usability’ of the system. Nevertheless, a number of opportunities exist to further optimize VMS arrangements in the region:

RFMO Information sharing

The risk assessment highlighted the possible movement of unauthorized vessels from the Eastern Pacific (and to a lesser extent the Indian Ocean) into the WCPO as a high risk area. A number of EPO-based PS vessels have been prosecuted for unlicensed fishing in recent years, and anecdotal evidence suggests many more may have fished illegally. Moreover, the incentive for unlicensed fishing in the WCPO may increase
as legitimate fishing opportunities are restricted in other ocean basins. The current options for detecting unregulated fishing by vessels authorized in other RFMOs – principally aerial, surface and satellite surveillance – are expensive and their effectiveness is often limited by availability of assets and good intelligence.

Significant improvements in the cost and operational effectiveness of MCS responses to unregulated fishing by non-WCPFC authorized vessels could be achieved through VMS monitoring. However, this is currently limited by (a) the absence of centralized VMS systems in some RFMOs, most notably IATTC and (b) the absence of agreements to support VMS (and other) data sharing between WCPFC and other RFMOs. The 2nd Meeting of the Tuna RFMOs agreed on the need for an international workshop on ‘improvement and harmonization and compatibility of monitoring, control and surveillance measures’ to be held in 2010. The TORs for this workshop include ‘work to standardize and harmonise, to the degree possible, operational aspects of vessel monitoring systems, including…guidelines for centralized centers at RFMO secretariats’”. In the short term, this meeting represents an opportunity for FFA members to highlight the possible risks and costs associated with unregulated fishing by vessels authorized in other ocean basins and to push for the development of centralized VMS systems in other RFMOs with appropriate supporting agreements to share VMS data on movement of vessels between ocean basins. In the longer term, consideration should be given to supporting in the Regional MCS Strategy improved information sharing arrangements between RFMOs (and FFA members) to support more cost effective detection of vessels fishing without appropriate authorization.

Given the development of any centralized VMS and information sharing arrangement between RFMOs may take many years, consideration should be given to the establishment of other more immediate measures to monitor the movements of vessels between convention areas, such as entry and exit reporting. This may assist in monitoring EPO vessels moving into the WCPFC-CA.

**Reciprocal arrangements between WCPFC and FFA/members**

The risk assessment highlighted the possibility of WCPFC registered vessels fishing illegally in FFA member EEZs as a high risk area, particularly in the longline fishery. A key limitation in the MCS arrangements surrounding these vessels is the absence of measures to allow for VMS visibility in near real time by the relevant coastal state where a high seas vessel enters an EEZ. This is often referred to as the "VMS data gap". A number of possible arrangements appear to exist to provide for coastal state visibility of these vessels, and these are currently being explored by FFA with its members.

**High seas 'buffer' zones**

In addition to monitoring vessels reporting to the WCPFC VMS where they enter an EEZ, consideration should be given to supporting the establishment of 'buffer zones' to allow coastal states to monitor vessel traffic on the high seas adjacent to EEZs. Buffer zones would allow for the active tracking of vessels at highest risk of unlicensed fishing or other IUU activities such as illegal transshipping, and would allow facilitate more effective planning of MCS responses. Over time, visibility through buffer zones would allow for an improved picture of vessel activity and in particular improvements in regional risk assessments. We note that a buffer zone of 100nm has been proposed in recent drafts of the WCPFC’s rules governing access to high seas data for MCS purposes.

**Enhanced VMS data sharing between FFA members**

VMS data sharing arrangements exist between some FFA members, however scope exists to further expand their use in many cases. VMS data sharing arrangements providing visibility of VMS polling in

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1. 3rd Draft Rules and Procedures for the Protection, Access to, and Dissemination of Non-Public Domain Data and Information Compiled by the Commission for the Purpose of Compliance and Enforcement Activities in High Seas Areas and Scientific Purpose.
each other’s EEZs provides enhanced situational awareness, and may allow for more effective MCS planning and responses. Data sharing arrangements are likely to be most relevant between adjacent countries, or between states with relevant linkages (e.g. flag state and coastal state). The benefits of VMS data sharing amongst appropriate states should be highlighted within the Regional Strategy.

**Port-to-port monitoring**

"Port to port" monitoring is the term given to the requirement for a VMS unit to be reporting automatically and normally to its licencing authority throughout the duration of the licence, irrespective of location. Port to port monitoring significantly expands the effective visibility of licenced vessels to national authorities and can assist in addressing a number of high risk areas including illegal fishing by vessels on the FFA register (by reducing the possibility that vessels will exit EEZs, switch off ALCs and return unmonitored) and illegal transshipping (by monitoring vessel movements outside EEZs in high risk areas). Port to port monitoring may also support enhanced port state compliance measures, particularly where licenced vessels land catch in foreign ports, by allowing licencing states to track vessels to destination ports. Currently PNG is the only FFA member to implement port to port monitoring. Consideration should be given to adding port-to-port monitoring to the HMTCs.

**Optimised use of alerts**

A range of automated alerts are available to FFA members that allow for notification of VMS polling in designated areas (e.g. zone entry/exit, closed areas etc). Automated alerts can increase the effectiveness of VMS monitoring by focusing attention on highest priority areas. The optimal range and type of alerts is likely to differ between countries. An important function of the FFA/RMCC should be to work with members on optimizing their VMS alert regime. We note that much of this work has already commenced through FFA.

**Stricter manual reporting requirements**

The HMTCs currently require manual reporting every 8hrs in the event of MTU malfunction, although some jurisdictions have more onerous requirements than this. Consideration should be given to strengthening the manual reporting requirement to every 4hrs or less, with a requirement to return to port within seven days. Stronger manual reporting requirements would send a strong message that fishing within FFA member waters unmonitored is not acceptable, and would also likely encourage the carrying of spares MTU’s amongst industry. Consideration should also be given to encouraging vessels to return to port where an MTU malfunctions more than once in the same trip. Stricter manual reporting requirements in the LL fishery should be considered in light of any move towards a LL VDS.

**‘No-go’ zones around sensitive areas (e.g. isolated communities, marine parks)**

Scope exists to improve the ‘longarm’ effectiveness of the current VMS system by establishing prohibited or ‘no go’ areas around remote or sensitive areas. Under these arrangements, it would be an offence for designated vessels (e.g. large scale foreign fishing vessels) to be polled within a ‘no go’ zone. Similar arrangements have been established in other parts of the world (e.g. Queensland, Australia around designated ‘scallop replenishment zones’) to great effect. These arrangements negate the need to deploy expensive aerial and surface surveillance assets to detect and apprehend vessels suspected of fishing. Instead, vessels can be successfully prosecuted on the basis of VMS polling alone. Such arrangements may be particularly useful around remote and sensitive areas (e.g. closed waters around isolated communities, marine parks) that are difficult for traditional surveillance and response assets to get to, and for which designated vessels would have no other legitimate reason for being inside.
Logsheets

Enhanced priority on logsheet submission
Logsheets are a fundamental component of an integrated MCS regime, yet compliance with logsheet submission requirements across the region is often poor. Moreover, concerns were frequently raised during in-country consultations about the accuracy of reported information. Greater priority needs to be given in-country to improving rates of compliance with logsheet and other (e.g., landings receipts) mandatory reporting requirements. This may include raising awareness among licensed fleets about logsheet reporting requirements through education, the use of appropriate sanctions to respond to non-compliance (e.g., administrative sanctions for ‘minor’ offences; stronger penalties for major or repeated offences), and linking licence renewal to the timely and accurate submission of logsheets.

EMTUs
Consideration should be given to phasing in the use of EMTUs as a HMTC. EMTUs offer a range of benefits including improved communication with fishing vessels and may also facilitate the submission of more timely and accurate catch and effort information.

Observers

Regional Observer Strategy
The FFA Regional Observer Strategy agreed at FFC 67 outlines a range of broad goals to guide FFA’s involvement in observer programmes in the region. Many (if not all) of the goals, roles and actions outlined in the Strategy address weaknesses and needs highlighted by this assessment, including the need to:

- Ensure observer coverage targets for PS fisheries are met within the region;
- Assist members reach observer coverage requirements for their LL fleets (e.g., by developing a mechanism by which independent and impartial observers may be provided amongst FFA members);
- Improve access to observer information (e.g., by develop a regional observer database consistent with MCS and scientific needs);
- Collect accurate data pertaining to the monitoring of conservation and management measures;
- Fulfill data collection and exchange requirements for integrated MCS;
- Reduce systematic delays in observer data transfer and processing procedures and improve utilization of observer surveillance data;
- Provide active input into the development of FFA fisheries management policies pertaining to regional observer programmes, transshipments, catch documentation and other relevant mechanisms;
- Integrate observer data in MCS systems (e.g., by linking data sources to automate comparison of observer collected information with other sources [logbooks/VMS/transshipment data, etc]);
- Investigate options for real-time reporting of observer information.

A key aim of the Regional MCS Strategy should be effectively implementing the actions already agreed under the Regional Observer Strategy.

Increased observer coverage on LL vessels
The immediate focus of the region in relation to observers is (understandably) to meet the 100% PS coverage requirements of the PNA 3IA and CMM 08-01. Nevertheless, an important longer-term objective should be to increase rates of observer coverage on LL vessels. Current rates of coverage are generally very low, limiting the region’s ability to independently validate catch and effort data (particularly for those fleets whose data underpin regional stock assessments on key species) as well as to monitor compliance.
with a range of LL specific bycatch mitigation conservation and management measures. Consideration should be given in the development of the strategy on measures to support improved coverage of the LL fleet, including those already included in the Regional Observer Strategy. These may include: cross-authorisation of observers from national programs, improved cooperation and coordination between FFA member countries in the supply and deployment of observers (e.g. through regional ‘MCS hubs’), alternative methods for observer deployment and retrieval (e.g. using patrol vessels), coordinating embarkation of observers with mandatory pre-fishing inspections and the like.

**Remote monitoring techniques (e.g. on board cameras; LL drum monitors)**

In parallel with measures to improve observer coverage on LL vessels, exploration should also be undertaken of the costs, benefits and practicality of remote monitoring techniques for those elements of the LL sector where observer placement may be more challenging. For example, on board cameras can provide information on fishing effort and interactions with bycatch; drum monitors linked to VMS may remotely identify illegal fishing activity. Continuous monitoring of emerging techniques to remotely monitor the LL fleet could be undertaken by FFA or the RMCC.

**Purse Seine - Observers on all domestic PS vessels**

The PNA 3IA and WCPFC CMM 08-01 introduce a number of complementary new management measures for the regional purse seine fleet designed to reduce fishing mortality on juvenile bigeye and yellowfin. These include full catch retention provisions and seasonal bans on fishing on floating objects. In order to monitor compliance with these provisions the 3IA includes a requirement for 100% observer coverage on all foreign fishing vessels, while CMM 08-01 requires 100% observer coverage on all vessels (a) fishing on the high seas, (b) fishing on the high seas and in one EEZ and (c) in two or more EEZs. These provisions are strong, however a theoretical gap in coverage exists on domestic vessels fishing only in one EEZ. Given that observer coverage is the only cost-effective and practical means to monitor compliance with the catch retention and FAD closure provisions, the 100% observer coverage requirement should be extended to include all domestic vessels.

**Sanctions**

**Administrative sanctions**

Priority given to the enforcement of a range of ‘minor’ acts of non-compliance (e.g. failure to submit logsheets on time, failure to report bycatch, etc) amongst FFA members is often low, partly perhaps because of a reluctance to engage in costly legal proceedings over small offences. Administrative sanctions provide a flexible and cost-effective means of dealing with ‘minor’ offences, while at the same time strengthening deterrence and signaling the importance of complying with all obligations/licence conditions etc. In that light, we suggest consideration be given to promoting the wider use of administrative sanctions to deal with ‘minor’ offences. Notwithstanding that, we note that some members’ legislation may not provide for administrative penalties and strong measures would need to be in place to prevent abuse of the system.

**WCPFC IUU List**

The use of ‘longarm’ enforcement methods such as WCPFC IUU listing (provided for under WCPFC CMM 2007-03) represents a cost effective means of achieving redress for suspected IUU activities where effective action is unable to be achieved through traditional means. The WCPFC IUU list has recently been used to great effect by FFA members and there is increasing evidence to suggest that embarrassment associated with ‘naming and shaming’ is a great motivator in prompting flag state action against IUU vessels. Increased use of the IUU listing process may serve the dual benefit of achieving effective results on specific cases for FFA members, while at the same time encouraging stronger flag state control over their fleets.
‘Fleet-wide’ sanctions

‘Fleet-wide’ sanctions is a general term for a range of possible sanctions that seek to use collective penalties as leverage where normal enforcement approaches have failed. For example, where a vessel is successfully prosecuted yet fails to pay the appropriate penalty, sanctions (e.g. blacklisting) may be applied to all vessels owned by the same owner. If this fails to achieve the desired outcome, sanctions may then be elevated, for example, to the Association or flag State. Fleet-wide sanctions would be facilitated by maintaining a register of vessel masters, owners etc. Notwithstanding, the application of fleet-wide sanctions may be challenging legally and would require careful investigation.

Port State Measures

UN Port State Measures Agreement

A legally binding Agreement on Port State Measures to Prevent, Deter and Eliminate Illegal, Unreported and Unregulated Fishing has recently been finalized. The Agreement contains a number of measures that may serve to strengthen national and regional MCS regimes operating in the Pacific, particularly where catch taken in FFA member waters is landed in foreign ports. Measures contained in the draft Agreement include:

- Denial of access to ports and port services (unloading, transshipping, etc) where vessels have been engaged in IUU activity;
- Obligations on port states to conduct sufficient inspections to achieve the objectives of the Agreement;
- Transmission of inspection results to relevant States;
- A requirement for enforcement action by flag states where evidence exists of IUU activity.

In developing and updating the Regional MCS Strategy, we suggest FFA members examine the benefits (and costs) associated with the Agreement and consider adopting complementary measures where appropriate. These may include, for example, including as an HTMC a requirement for all product to be landed at a port designated by a party to the Agreement.

Regional MCS ‘Hubs’

Consideration should be given to the establishment of MCS ‘hubs’ at key ports within the FFA region. The overarching purpose of MCS hubs would be to (a) capitalise on MCS opportunities afforded by the fact that the majority of vessels base themselves out of, and unload or tranship product through, a handful of key ports and (b) assist in optimising national (and thereby regional) MCS arrangements in sub-regional groupings of countries attached to the hubs. Ideally, each hub would be staffed by a dedicated FFA MCS officer linked administratively and reporting to the RMCC. The staff member would be nominally based at the relevant key port, but would also travel regularly to assist MCS officers in the relevant sub-regional countries. The possible administrative arrangements for MCS Hubs are explained in more detail in Chapter 5.

Key outcomes being sought from the creation of the hubs would include:

- Improving rates of dockside inspection and catch monitoring in key ports (and thereby cost effectively improving regional monitoring and control);
- Ensuring information collected at key ports is entered into the Regional Information Management Facility (RIMF – see Chapter 4) and is made available to relevant FFA members (licensing state, flag state);
- Supporting relevant countries in the sub-region to ensure information collected in country is entered into the RIMF;
• Improving rates of return for logsheets, landings receipts and other mandatory reporting requirements (particularly for FFA members for whom vessels licenced to fish in their waters base themselves in foreign ports);
• Assisting relevant national agencies to optimize MCS arrangements in country, including providing advice on measures to ensure full implementation of the MTCs;
• Assisting with information analysis, investigation of suspected violations, case development and prosecution as appropriate particularly when the suspected violation affects a foreign State (i.e. an FFA member outside the port State);
• The coordination of observers to improve coverage across the region;
• The conduct of pre-fishing inspections prior to registration on the FFA Regional Register;
• The conduct of ‘induction’ sessions for fishing masters prior to registration;
• Assisting relevant sub-regional countries in fulfilling their obligations to the WCPFC.

The number, location and operation of the hubs would need to be the subject of considerable discussion amongst FFA members, and a range of practical, administrative and resourcing considerations would need to be addressed. For example, some of the outcomes sought from the hub – e.g. improved rates of dockside inspection and catch monitoring – could only be achieved by duly authorised nationals of the relevant key port, and there may be resourcing implications associated with this. We note however that if nationals of the relevant port are implementing enhanced MCS measures on behalf of the region (achieving higher rates of regional boarding and inspection by focusing on key ports; collecting and sharing logsheet information on behalf of a range of FFA members), there is a strong case for regional investment to assist national agencies.

The creation of the hubs would also need to be complemented by regionally harmonised port state measures and sanctions to ensure IUU activity is not simply displaced to ports with weaker MCS.

Cooperation with ports ‘external’ to FFA
Given the global supply chains of fisheries operating in the Pacific, the establishment of strong MCS linkages with key external ports should be promoted. A number of concerns were expressed by FFA members during in country consultations about the lack of MCS coverage on vessels that fish in their waters but unload in foreign ports (e.g. vessels that fish in FSM but unload in Guam). Consideration should be given to the development of cooperative enforcement arrangements between relevant states and may be facilitated where Lacey Act style provisions exist in the port state. Additional opportunities for cooperative port state enforcement may be available under the Port State Measures Agreement.

Supply Chain Monitoring

Control of Transhipment
Considerable work towards the development and adoption of a WCPFC measure on the regulation of transhipment has already been undertaken by FFA members, and in particular by RMI. The results of the risk assessment support the continuation of this work with a view to adopting a comprehensive CMM. Reporting risks, particularly misreporting of target species and bycatch in both the PS and LL fisheries, were identified as some of the highest risks in the assessment and were the most commonly reported IUU activities during in country visits. Moreover, illegal transhipping, particularly from the LL fleet, was identified as a key residual risk not only because of its inherent illegality but also because of its potential to facilitate other forms of serious IUU activity (e.g. laundering catches/products of vulnerable species such as bigeye and sharks).

The improved regulation of transhipment – including 100% observer coverage on all carrier vessels – offers the opportunity to address a number of these risks in a relatively cost effective manner. Key features of the RMI proposal for the regulation of transhipment include:
Appendix 2.3: Additional MCS Measures

- transhipment in a port or in EEZs in accordance with applicable national laws.
- 100% ROP observer coverage on carrier vessels, with observers requiring access to both carriers and catching vessels;
- a process for cross-endorsement of observers between RFMOs.
- Prior notification of high seas transhipments and post transhipment declarations from both the unloading and the receiving vessel.
- Declarations and prior notices about transhipment containing a minimum standard set of information.
- Annual reports by CCMs about transhipment by their vessels or in their waters/ports.
- Prohibition on transhipment to or from vessels not on the WCPFC register of fishing vessels or temporary register of non-CCM carriers and bunkers.
- Application of the measure to fish taken inside the Convention Area even where it is transhipped in areas outside of the Convention Area.

Agreement has been reached on the majority of these measures, however discussion is continuing on some details. Progressing the resolution of a comprehensive transhipment measure, including supporting any capacity building needs of FFA members to ensure effective implementation, should be an important consideration for the Regional MCS Strategy.

Catch Documentation Scheme

The results of the risk assessment support the need for an enhanced program of catch monitoring and validation in WCPO fisheries with a view to:

a) Supporting the effective implementation of national and regional conservation and management measures;

b) Improving catch and effort information for scientific purposes;

c) Deterring IUU fishing.

Significant risks were found to exist in relation to misreporting and under-reporting of catch in both the purse seine and longline fisheries. Information from both in country consultations and observer reports suggested rates of under-reporting (either deliberately or inadvertently) were comparatively high in both fisheries, with strong local incentives to under-report catches in many areas (e.g. where access fees and other local government fees and charges are linked to reported catch volume). Additional incentives to under-report have also been created in new catch reduction measures under CMM 08-01, and these may increase in future as catches become increasingly regulated. The consequences of under-reporting are high, not just because of the economic losses to FFA member economies (e.g. loss of access revenue), but also because accurate catch and effort data is central to robust stocks assessments.

Strong consideration should be given to the adoption of a comprehensive CDS to assist in better tracking catches throughout the supply chain. While some WCPFC CCMs continue to advocate for a less comprehensive Statistical Document Program (SDP), we note that the experience with similar systems elsewhere has been mixed at best and the significant domestic landings of at least one key fleet operating in the region are likely to weaken the effectiveness of a trade based system. A more comprehensive CDS may assist in overcoming a number of weaknesses in the current catch monitoring/validation regime (particularly in the LL fleet where observer coverage is very low, compliance with logsheet requirements is variable and opportunities for in port compliance is limited amongst large sections of the fleet), support the implementation of key CMMs (e.g. CMM 08-01) and work in concert with other measures proposed here (e.g. improved regulation of transhipment). We also note that an appropriately structured CDS is likely to have the dual benefit of meeting the documentation requirements for the EU’s anti-IUU regulation.

Notwithstanding that, we note that the introduction of a comprehensive CDS in the Pacific will not come without its challenges. Some of these include:
• Catches of mixed species, in particular, difficulties in identifying juvenile bigeye and yellowfin tuna
• Exemption of certain fleets or fisheries due to applicability issues for WCPFC Conversation and Management Measures in, for example, archipelagic waters
• Significant export of catches to non WCPFC CCMs (e.g Thailand) which are not bound by WCPFC CMMs but could be requested to cooperate with a CDS on a voluntary basis
• Large volumes of product compared to other CDSs (e.g. CCAMLR) which could lead to higher administrative costs due to the greater volume of paperwork generated
• The need to consider EC IUU regulation equivalency issues alongside WCPFC needs in order to gain EC recognition for the WCPFC scheme and avoid creating duplicative systems

These issues, together with the resourcing requirements and capacity building needs of FFA members, should be carefully considered in the design and development of an appropriate CDS. We note that at least two parallel studies – one being undertaken for FFA and one being undertaken by MRAG Asia Pacific for UK’s DEFRA – are currently considering these issues. We recommend that FFA consider the outcomes of these studies in finalising their preferred approach on CDS, and in the development of the Regional MCS Strategy.

Voluntary compliance

Education

Education, with a view to achieving a highly informed fishing fleet, is an important component of an effective, integrated MCS regime. Anecdotal evidence from in country interviewees suggested awareness amongst industry of relevant laws and obligations is high variable. The risk assessment has identified a range of risks upon which there is widespread non-compliance (e.g. non-reporting of bycatch) that may benefit from improved education. A number of measures have been suggested here that improve opportunities for education including mandatory pre-fishing inspections and annual ‘induction’ sessions for vessel masters.

Participatory planning

Participatory planning is central to achieving voluntary compliance by building understanding of, and support for, fisheries regulations and frameworks amongst fishers. In turn, high levels of voluntary compliance are likely to support the most cost effective use of MCS resources. A range of opportunities are like to exist to encourage participatory planning techniques throughout the FFA region (e.g. in the development of local license conditions) and consideration should be given to promoting their use through the regional strategy.

Market-based incentives

Consideration should be given to the promotion of market-based incentives to encourage high levels of compliance amongst licensed fleets. Market-based incentives may include the use of eco-labels (e.g. Marine Stewardship Council, Friends of the Sea, etc) which provide preferential access to markets based on sound management and high levels of compliance. A number of fleets that are well-placed to seek independent certification have already been identified, including the southern ALB fleet.

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Surveillance and Response

Targeted aerial surveillance
A range of risks identified during the assessment would benefit from increased rates of targeted aerial surveillance. Measures to achieve higher rates of aerial surveillance coverage are addressed in Chapter 6.

Increased boarding and inspections
Increased rates of boarding and inspection have been suggested for a range of risks for which in situ compliance measures are likely to be most effective, or for which at sea boarding and inspections are likely to increase deterrence to non-compliance and form part of effective, multi-faceted MCS approach. Chapters 5 and 6 outline a range of measures to improve the coverage and capability of surface patrol assets operating in the region.

Industry/community reporting
Scope appears to exist to significantly expand effective ‘surveillance’ coverage of FFA members’ waters by establishing a regionwide facility that allows industry and community members to report instances of non-compliant behavior. Most (if not all) industry members interviewed during in country consultations were enthusiastic about the prospect of such a facility, with many independently raising the need. While reports may need to be cross-verified against other forms of independent data (e.g. VMS positions, etc) before any action was taken, the establishment of such a facility would provide responsible fishermen an avenue to assist in ensuring compliance with regulations.

WCPFC Measures
Given the shared nature of stocks across the WCPO, a functional and effective WCPFC MCS regime is an important component in achieving FFA members’ regional fisheries goals. Possible measures to strengthen WCPFC MCS arrangements are discussed below.

Harmonization of MCS regimes and information sharing between RFMOs
Scope exists to improve the efficacy and cost-effectiveness of MCS responses to a range of risks identified in this assessment through improved cooperation and harmonization of MCS regimes between RFMOs. For example, whereas the only practical measure to address risks associated with EPO vessels fishing unlicensed/unauthorized in the WCPO at present is expensive aerial and surface surveillance, MCS responses in future could be significantly better targeted with the establishment of a centralized VMS at IATTC and appropriate information sharing arrangements with WCPFC (and FFA members). Likewise, cross-authorization of observers between WCPFC and IATTC may also assist in addressing this and other risks such as illegal transshipping. The need to better harmonize MCS regimes across RFMOs was an important outcome of the Kobe II tRFMO meeting in San Sebastian earlier this year\(^3\). Consideration should be given in the Regional MCS Strategy to encouraging enhanced cooperation between RFMOs where it would strengthen MCS arrangements within the FFA region. Priority should be given to encouraging cooperation with IATTC.

Development of a strengthened compliance review process
CCM compliance with reporting obligations under CMMs and scientific data requirements has been variable. Failure to supply operational catch and effort information reduces certainty in stock assessments, while failure to supply information relevant to CMMs is, in itself, non-compliance and undermines the Commission’s ability to monitor whether the objectives of CMMs are being met. While a broad process for monitoring CCM compliance was adopted by the WCPFC in 2006, rates on non-compliance remain

high in some areas (e.g. submission of operational catch and effort data\(^4\)). The need for a strengthened process for monitoring compliance was identified as a TCC priority for 2009, and is currently being advanced through a Working Group led by Australia. An important recognition in Australia’s proposal is the need to develop an appropriate regime of responses to non-compliance, including non-discriminatory sanctions where appropriate. The need for effective sanction regimes within tRFMOs was acknowledged at the 2\(^{nd}\) meeting of tuna RFMOs held in San Sebastian, Spain\(^5\). Consideration should be given to reinforcing the need in the Regional MCS Strategy for a strong WCPFC process for reviewing CCM compliance with CMMs and other obligations, including the development and application of an appropriate regime of responses for non-compliance. Consideration should also be given to reinforcing the need for compliance with mandatory data submission requirements, and in particular the submission of timely and accurate catch and effort information, to support robust stock assessments and monitoring compliance with CMMs.

**Other Measures**

**Improved data collection/institutional strengthening in SE Asia**

The risk assessment highlighted overfishing by domestic fleets in SE Asia and weaknesses in data collection as some of the highest risks to FFA members’ regional fisheries goals. A range of initiatives to strengthen relevant institutions in Indonesia, Philippines and Vietnam to support improved data collection and enhanced implementation of WCPFC CMMs and other obligations have been undertaken through WCPFC (e.g. the Indonesia and Philippines Data Collection Project and the recent GEF-funded West Pacific East Asia Oceanic Fisheries Management Project [WPEA]). FFA have also taken steps enhance coordination and cooperation on WCPFC issues with Indonesia and the Philippines. Continued support for these measures, with a view to reducing the risks associated with SE Asian domestic fisheries over time, should be an important consideration for the regional strategy.

**Global register of fishing vessels/UVI**

A global register of fishing vessels is currently under development through the tRFMOs in conjunction with Lloyd’s Register – Fairplay, with a view to “creation of a harmonized list of tuna fishing vessels that is as comprehensive as possible (positive list) including use of a permanent unique identifier for each vessel”. The creation of a global register, including a UVI, would assist in addressing a number of compliance risks in the FFA area of interest and should be supported in the Strategy.

**Monitoring of effort creep**

Opportunity exists with 100% observer coverage requirements in the PS fishery to generate detailed information on vessel characteristics to support ongoing estimates of effort creep over time. Any program to monitor effort creep should be coordinated through SPC.

**Resolution of regional maritime boundaries**

The need to progress resolution of outstanding maritime boundaries is well recognized amongst the FFA membership. Agreed boundaries are critical to effective enforcement of control measures as well in supporting key regional fisheries management frameworks such as the VDS. While it is not the role of FFA to facilitate agreement on maritime boundaries, the need to urgently resolve outstanding boundaries should be given support in the regional strategy.

**Closure of the high seas pockets**

The high seas pockets within the FFA region have long been described as ‘havens’ for IUU fishing given the different, and in most cases, weaker MCS regimes operating in these areas. WCPFC agreed to close


\(^5\) Ibid, Report of the Second Joint Meeting of Tuna Regional Fisheries Management Organizations (RFMOs).
these areas to fishing from 2010, unless otherwise agreed at WCPFC6. The results of this assessment add further weight to the case for closing the pockets with unlicensed fishing by high seas LL vessels and illegal transshipping rated high residual risks. While ensuring compliance with the closures may require the dedication of MCS resources, these costs are likely to be more than offset by reduced in zone MCS costs and strengthened overall implementation of fisheries management frameworks.