TECHNICAL AND COMPLIANCE COMMITTEE

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STATUS REPORT ON IMPLEMENTATION OF THE REGIONAL OBSERVER PROGRAMME

WCPFC-TCC2-2006/11
15 September 2006

Paper prepared by the Secretariat[1]

Introduction

1. A major task of the Commission is to develop a Regional Observer Programme that supports both scientific and compliance functions, and be coordinated, to the extent possible, with existing national, regional or sub-regional observer programs to avoid duplication. The Commission will also need to develop standards and procedures, including training and certification procedures, so that existing observer programs can contribute to the Regional Observer Programme to the maximum extent possible.

2. In relation to the Regional Observer Programme, the second regular session of the Commission (Comm2) agreed to proceed with the hybrid option recommended by PrepCon Working Group 1 and identified in WCPFC/TCC1/14, also taking into account transshipment observer programs of other tuna RFMOs, and requested the Scientific Committee, and the Technical and Compliance Committee to begin to develop a program of work for its implementation.

Observer Programme Coordinator

3. Comm2 endorsed a recommendation by TCC1 that the Commission's Observer Programme Coordinator be recruited in 2006 as opposed to 2007 as recommended in WCPFC/PrepCon/37. It has not proven possible to recruit an Observer Programme Coordinator in 2006 on the terms and conditions offered for this post. The Executive Director is currently seeking an inter-sessional decision to re-grade and re-advertise this position so that an appointment will be made in late 2006 or early 2007.

Program Document

4. The first task of the Observer Programme Coordinator would have been to draft a program document describing:

a. the immediate objectives of the Regional Observer Programme;

[1] Attachment 1 of this report was prepared by MRAG Ltd, 18 Queen Street, London, United Kingdom.

b. institutional arrangements for its implementation;

c. science, technical and compliance-related elements of the program, including collaboration between the Scientific Committee, and the Technical and Compliance Committee; and

d. a timetable and plan for implementation of the Regional Observer Programme across all fleets operating in the western and central Pacific Ocean (WCPO).

5. In the absence of an Observer Programme Coordinator the Commission Secretariat chose to approach this part of the work program by means of a consultancy. Following a competitive request for expressions of interest in developing a program document for the Regional Observer Programme, in mid-July 2006 the Commission Secretariat contracted MRAG Ltd., London, United Kingdom to undertake this work.

6. The objective this consultancy was to draft, in consultation with interested CCMs, a program document for the Regional Observer Programme that was to be initially considered at the second regular session of the Scientific Committee (SC2), held at Manila, Philippines from 07 to 18 August 2006. Due to time constraints, this draft program document was not presented to SC2, but is included in MRAG Ltd's report entitled 'Design Elements of a Regional Observer Programme for the Western and Central Pacific Ocean Region' appended at **Attachment 1** for consideration by TCC2.

Collaboration between the Scientific Committee and Technical and Compliance Committee on the Regional Observer Program

7. Comm2 endorsed a recommendation by TCC1 that the Scientific Committee, and the Technical and Compliance Committee formally collaborate to consider the scientific, and technical and compliance elements of the regional observer program by convening a joint meeting in association with SC2 or TCC2. Following discussion of options for promoting broad collaboration between the SC and TCC, SC2 agreed to recommend to the Commission that the SC Chair should attend TCC meetings and the TCC Chair should attend future SC meetings, for the purpose of developing collaborative approaches, and that this participation should be supported from the Commission's annual budget.

Improving observer coverage in the Convention Area

8. Comm2 agreed that early consideration be given to improving observer coverage in the Convention Area, particularly in relation to longline fishing and fishing on the high seas, noting that *inter alia*, observer safety, vessel size and costs are important considerations in improving observer coverage. With respect to observer coverage, SC2 recommended that the objective of the Regional Observer Programme should initially be to attain a minimum coverage of five (5) per cent of fishing effort (longline: total hooks deployed, purse seine: days fished and searched) across all strata to allow identification of specific issues.

9. SC2 further recommended that the distribution of observer effort is to be representative of species of interest, fishing areas, seasons and fishing fleets (types), noting that the initial coverage will not deliver on all possible objectives, e.g. five (5) per cent coverage may not be adequate to reliably quantify the incidental catch of sea turtles and seabirds.

Scientific objectives of the Regional Observer Programme

10. SC2 recommended that there are five (5) scientific objectives that should be considered in the development of the Regional Observer Programme, all of which have high priority:

a. to record the species, fate (retained or discarded) and condition at capture and release (e.g. alive, barely alive, dead etc.) of the catch of target and non-target species; depredation effects; and interactions with other non-target species including species of special interest (i.e. sharks, marine reptiles, marine mammals and seabirds);

b. to collect data to allow the standardization of fishing effort, such as gear and vessel attributes, fishing strategies, the depths of longline hooks, FAD use and setting activities of purse seiners, and other factors affecting fishing power;

c. to sample the length and other relevant measurements of target and non-target species;

d. to sample other biological parameters, such as gender, stomach contents, hard parts (e.g. otoliths, first dorsal bone), tissue samples and collect data to determine relationships between length and weight, and processed weight and whole weight;

e. to record information on mitigation measures utilized and their effectiveness.

Conclusion

11. Despite the absence of an Observer Programme Coordinator the Commission Secretariat has supported the Scientific Committee, and Technical and Compliance Committee to begin to develop a program of work for the Regional Observer Programme. CCMs are invited to consider the draft program document for the Regional Observer Programme and make recommendations to the Commission on the Regional Observer Programme in regard to:

a. its objectives;

b. its compliance elements;

c. its financing arrangements;

d. its institutional arrangements;

e. a timetable for its implementation;

f. collaboration between the SC and the TCC; and

g. improving observer coverage in the Convention Area.

Western and Central Pacific Fisheries Commission

Design Elements of a Regional Observer Programme For the Western and Central Pacific Ocean Region

Final Report

Prepared by

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September 2006

List of Acronyms

CCAMLR	Commission for the Conservation of Antarctic Marine Living Resources
CCMs	Commission Members, Cooperating Non-Members & Participating Territories
DBF	(Standard) Debriefing Form
DCC	Data Collection Committee
EEZ	Exclusive Economic Zone
EU	European Union
FFA	Pacific Islands Forum Fisheries Agency
FSM	Federated States of Micronesia
IATTC	Inter American Tropical Tuna Commission
MCS	Monitoring, Control and Surveillance
MTF	Multilateral Treaty on Fisheries
RFMO	Regional Fisheries Management Organisation
ROP	Regional Observer Programme
SDM	Service Delivery Model
SPC	Secretariat of the Pacific Community
TCC	Technical and Compliance Committee
VMS	Vessel Monitoring System
WCPFC	Western and Central Pacific Fisheries Commission
WCPO	Western and Central Pacific Ocean

1. Introduction and Context

The use of observers is now widely recognised as an effective means of collecting information necessary for the monitoring, assessment and enforcement activities required to implement an ecosystem-based approach to fisheries management. Observer programmes offer an opportunity to obtain scientific data directly from fishing operations. They provide important scientific information on target catch, non-target catch (including incidental catch of seabirds, marine mammals and turtles), and the mortality of discards.

Article 28 of the Western and Central Pacific Fishery Convention (Convention) requires a Regional Observer Programme (ROP) for the Convention Area that has the following characteristics:

- Organized in a flexible manner;
- May be undertaken on a contractual basis;
- Coordinated with existing regional, sub-regional and national observer programmes to avoid duplication;
- Consists of independent and impartial observers authorized by the Secretariat; and
- Training and certification of observers will occur in accordance with uniform procedures.

This is a sound basis from which to develop a regional programme; however, placement of observers on vessels is an expensive activity. Programme organisation needs to be efficient and focussed on meeting specific objectives. Careful planning is essential and the decision by the Western and Central Pacific Fisheries Commission (Commission) to draft a Programme Document is an important part of this.

Addressing the Terms of Reference

At its second annual meeting in December 2005, the Commission agreed to proceed with the "hybrid" option for the ROP, as recommended by PrepCon Working Group 1 and identified in WCPFC/TCC1/14, also taking into account transhipment observer programmes of other tuna RFMOs. The Commission requested the Scientific Committee, and the Technical and Compliance Committee to begin developing a work programme for implementation of the ROP. The Commission identified as an urgent task the drafting of a programme document that describes:

- the immediate objectives of the ROP;
- institutional arrangements for its implementation;
- science, technical and compliance-related elements of the programme, including collaboration between the Scientific Committee, and the Technical and Compliance Committee; and
- a timetable and plan for implementation of the ROP across all fleets operating in the western and central Pacific Ocean (WCPO).

Accordingly, the terms of reference for this project involve the production of a programme document that outlines the development of an ROP for the Commission, addressing the above points.

The hybrid option for the programme structure combines the main characteristics of the Scheme of International Scientific Observation of the Commission for the Conservation of Antarctic Living Marine Resources (CCAMLR)[2] with the existing observer programmes in the region[3]: Under this approach, WCPFC Members, Cooperating Non-Members and Participating Territories (CCMs) would be free to choose the source of observers from either the national observer programmes of other CCMs or from the existing sub-regional programmes. Regardless of the source of observers, the programme will be governed by a scheme similar to the approach adopted by CCAMLR.

[2] adopted in 1992 under Article XXIV of the Convention

[3] Technical and Compliance Committee. 2005. The monitoring, control, and surveillance (MCS) component of the Regional Observer Programme. WCPFC/TCC1/14.

As indicated above, Article 28 requires the ROP to coordinate with existing sub-regional and national observer programmes. There are many advantages to this approach, including a reduction of costs, logistical support, and local knowledge. Vessels currently carrying sub-regional observers can continue to use these observers to fulfill the requirements of the ROP. While incorporating the existing programmes into the infrastructure of a large regional programme will not be simple, it is seen as being essential the success of the ROP.

The Pacific Islands Forum Fisheries Agency (FFA) and the Secretariat of the Pacific Community (SPC) have established much of the groundwork required to implement the ROP. Many of the coastal States have developed a working relationship with the FFA. The national programmes are already cooperating with the FFA and SPC for many of their procedures and protocols. Both agencies have practiced protocols for data checking and debriefing. FFA has maintained a database for the treaty observer programmes for over a decade. The existing training programme and sampling protocols are designed to cover multiple gear types and could easily be modified into standardized regional programme training. Based on Article 28.6 (f) of the Convention, to avoid duplication with existing regional, sub-regional and national programmes, and the reasons given above, FFA and SPC should be integral parts of the ROP. In the short term, new components of an observer programme added by the Commission should meet the standards currently set by FFA and SPC. In the medium to longer term, as the ROP develops, there may be an opportunity for further upgrading of standards that would be of mutual benefit to the ROP, and SPC and FFA's programmes.

The main body of this report sets out a *draft* Programme Document for the establishment and implementation of the ROP. It is laid out in sections that cover the four elements listed above in a coherent structure that will be further developed as additional decisions are made. Ultimately it is intended that the Programme Document will be adopted by the Commission, thereby establishing the ROP for the first time.

The Programme Document has been drafted on the basis of existing information and decisions set out in various Commission reports (referenced in the text), and experience drawn from a wide variety of other observer programmes around the world. There is, however, a particular focus on the CCAMLR Scheme of International Scientific Observation, which is an important model for the ROP. To supplement the information available in existing Commission reports, interviews were conducted with key personnel from the Commission Secretariat, flag States with responsibilities for national observer programmes, and sub-regional observer programmes.

2 Draft Programme Document for the Regional Observer Programme (ROP)

2.1 The Nature of the ROP

The Convention states that the ROP should be coordinated, to the maximum extent possible, with other regional, sub-regional and national observer programmes; the ROP shall consist of independent and impartial observers authorised by the Secretariat of the Commission.

The Commission has previously agreed to proceed with the hybrid option recommended by PrepCon Working Group 1 and identified in WCPFC/TCC1/14[4].

The TCC has previously agreed that with regard to the hybrid approach; this approach would incorporate components of the "CCAMLR approach" and the use of existing sub-regional observer programs. Under this approach, CCMs would be free to choose the source of observers from either the national observer programs of other CCMs or from the existing sub-regional programs.

2.2 Observer Programme Objectives

Under Article 28, paragraph 6(e) pf the Convention, the activities of observers shall include collecting catch data and other scientific data, monitoring the implementation of conservation and management measures adopted by the Commission and reporting of their findings in accordance with procedures to be developed by the Commission.

2.2.1 Definition of objectives

Observer programme objectives should provide a clear expression of what it is that the fishery managers and/or scientists need to know and, if possible, how precisely they need to know it. The programme objectives form the basis for required observer coverage levels (Section 2.2.2) and specific data collection activities (2.2.3). The Service Delivery Model (Section 2.3) is designed to meet these requirements in the most efficient and effective way possible.

The objectives of the ROP are divided into those that relate primarily to supporting the science function of the Commission, and those that support the compliance function[5]. The Commission is seeking a programme that primarily collects scientific information but concurrently monitors compliance issues[6]. This is satisfactory for general purposes and reflects the approach taken in other RFMOs such as CCAMLR, but the objectives must address the more specific data requirements and data uses so that observer deployments and tasks on board can be optimized. The specification of quantifiable objectives is also important from the perspective of the assessment of programme performance (Appendix 1, Section 2.7).

2.2.1.1 Science objectives

The observer programme must collect data that directly contribute towards addressing the scientific needs of the Convention. These are essentially two-fold – data needed for stock assessments of target species and data to assess impacts on non-target species and the environment[7]. Stakeholders in

[4] The design of the SDM is based on Option 2 as outlined in Section XI of WCPFC-TCC1-14, but incorporates some aspects of Option 1. This design is intended to allow the Commission to begin placing observers as soon as practicable.

[5] In response to questions about ROP objectives, several stakeholders noted that the same data may be used for both science and compliance purposes, and that the observer programme needs to focus more on high quality data than on the type of end user.

[6] See WCPFC/TCC1/14

[7] Section 2, Article 5 of the Convention requires long-term sustainability and optimum utilization of the region's highly migratory stocks and the use of best scientific evidence available to maintain or restore stocks at levels capable of producing maximum sustainable yield. Section 2, Articles 5 and 6 require application of the

WCPO fisheries have identified two broad science objectives for the ROP: data necessary for "quality" stock assessment and data necessary for estimating by-catch and discards.

The scientific aspects of observer programmes in the WCPO region have been reviewed by Lawson[8]. The interim minimum data requirements for the ROP are those currently collected by the SPC and FFA programmes. However, the Scientific Committee will provide on-going advice to the Commission on priority data for collection (see Section 2.2.3). This will include specification of exactly what data and information the Scientific Committee needs to obtain through the deployment of observers in various fisheries and locations, and the required precision of the estimated quantities derived from those data. In doing this, the Scientific Committee will advise the Commission on the potential benefits of observer data in terms of better stock assessment quality, and improved decision-making.

2.2.1.2 Compliance objectives

Observers are not inspectors and should not be expected to have a full knowledge of the regulations and their application. It is not the observers' job to report on infringements. It is their job to report on observations and it is up to others (i.e. the TCC and the Commission) to determine from those observations whether or not an infringement has taken place.

The Commission currently has not established management actions that place restrictions on by-catch and discards of target and non-target species. Current compliance activities focus on the regulations, and terms and conditions of access agreements within the EEZs of coastal States. The compliance role of observers relates to the following activities:

- recording of fishing activity, including vessel position, catch, vessel and gear details;
- sightings of other vessels and aircrafts;
- documenting the vessel's data reporting (filling out of logbooks, completing radio reports etc.);
- validation and monitoring the fate of the catch and by-catch; and
- observations of the vessel and crew's activity and behaviour.

2.2.2 Coverage requirements[9]

The WCPFC Scientific Committee is developing recommendations for observer coverage over the Convention Area. The Scientific Committee has noted that to adequately characterize rare events (e.g. the catch of some endangered species such as sea turtles), up to 100 per cent observer coverage may be required statistically. Pending more detailed advice, the Scientific Committee has recommended that the ROP should aim to observe 20 per cent of the fishing effort (longline: total hooks deployed; purse seine: days fished and searched) over a two-year period. However, mindful of the practical difficulties in a sudden increase in coverage across the Convention Area, (the current level is approximately 0.5 per cent), the Scientific Committee's Statistics Specialist Working Group (SWG) has recommended an interim target coverage of at least 5 per cent of the fishing effort. This coverage level will be reviewed periodically by the Scientific Committee. When areas of greater importance are found, the ROP may be restructured to optimize coverage in these areas.

The coverage level is intended to meet the objective of obtaining data that are representative of species of interest, fishing areas, seasons, and fishing fleet types. It is expected that the interim coverage level will not be adequate for this purpose; for example, coverage rates may need to be higher in certain areas or circumstances to obtain reliable estimates of the catch of some species (e.g.

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precautionary principle, assessment of fishing impacts on target species, non-target species, and the environment, and protection of diversity.

[8] Lawson, T. 2006. Scientific aspects of observer programmes for tuna fisheries in the Western and Central Pacific Ocean. WCPFC-SC2-2006/ST WP-1.

[9] See Appendix 2 for additional information on coverage levels.

seabirds, sea turtles, marine mammals) or species populations that are particularly vulnerable, for fisheries for which information is currently unavailable, and for other specific issues of concern to the Commission. The data collected from the interim coverage will be used to further determine the levels of coverage required to address specific issues of concern to the Commission.

2.2.3 Current data collection priorities

The observers in current programmes conducted through, or with assistance from, SPC and FFA collect data approved by the Data Collection Committee (DCC) (see Section 2.4.1), which addresses requests for data from various data users. The data collection activities of the ROP should reflect these established requirements, but should be kept under review as the programme develops.

Observer data collected for research purposes include primarily species composition of target species, catch data for non-target species, and length data. At its second meeting in August 2006, the Scientific Committee recommended the following as high priorities for data collection from purse seiners and longliners:

- the species, fate (retained or discarded) and condition at capture and release (e.g. alive, barely alive, dead etc) of the catch of target and non-target species; depredation effects; and interactions with other non-target species including species of special interest (i.e. sharks, marine reptiles, marine mammals and sea birds);
- data to allow the standardisation of fishing effort, such as gear and vessel attributes, fishing strategies, the depths of longline hooks, FAD use and setting activities of purse seiners, and other factors affecting fishing power;
- length and other relevant measurements of target and non-target species;
- other biological parameters, such as gender, stomach contents, hard parts (e.g. otoliths, first dorsal bone), tissue samples and collect data to determine relationships between length and weight, and processed weight and whole weight; and
- the use and effectiveness of mitigation measures.

The Scientific Committee also recommended that that the Secretariat should commission the drafting of objectives and priorities for data to be collected by observers for fisheries other than purse-seine and longline, for consideration of the Statistics SWG. According to the Scientific Committee, the Commission should develop long-term data collection, monitoring and research programmes dedicated to all species identified as higher risk in the productivity-susceptibility analysis.

2.3 The ROP Service Delivery Model (SDM)

2.3.1 Outline of the Hybrid SDM

The ROP aims to cover the whole of the Convention Area (Figure 1), including both high seas and EEZ areas, except for domestic vessels operating solely within the national jurisdiction of their flag State[10]. To achieve this, the Service Delivery Model (SDM) is designed as a hybrid between existing national and sub-regional programmes and the international observer programme model used by CCAMLR[11]. This is referred to as the Hybrid SDM.

A great part of the Convention Area is contained within the EEZs of the nations of the Commission. The national observer programmes form an essential part of the ROP because they provide the majority of the observer coverage within these EEZs. Although the national programmes are limited in their ability to collect data on the high seas, high seas data collected under these national programmes and by observers deployed under bilateral agreements are pooled and used on a region-wide basis.

[10] Article 28(4)) of the Convention.
[11] http://www.ccamlr.org/pu/e/sc/obs/intro.htm

There are two sub-regional observer programmes that place observers on purse seine vessels operating on the high seas and with the EEZs. The FFA Secretariat coordinates these programmes in accordance with the Multilateral Treaty on Fisheries (MTF) and the Federated States of Micronesia (FSM) Arrangement.

Under the MTF, the FFA Secretariat places observers on United States' flagged tuna purse seine vessels fishing in the EEZs of Member States[12]. The programme targets a 20 per cent coverage level on an average of 35 to 40 vessels annually, although more recently the fleet has gradually decreased to approximately 13 vessels. Observers acting under the MFT will not collect data outside a defined area as set out in the treaty, except in the case of the IATTC convention area (west of 150 degrees west) under which they have been authorized to act as observers.

The FSM Arrangement authorizes the Member States of the Parties to the Nauru Agreement (PNA)[13] to fish in the EEZs of PNA Member States, provided they carry an observer. The Member States provide observer candidates to the FFA Secretariat, by whom they are trained and deployed. This programme currently targets an annual coverage level of 50 fishing days per vessel for 36 vessels.

In contributing to the Hybrid SDM, observers from national and regional programmes will be required to collect the same, standardised data in both EEZs and on the high seas.

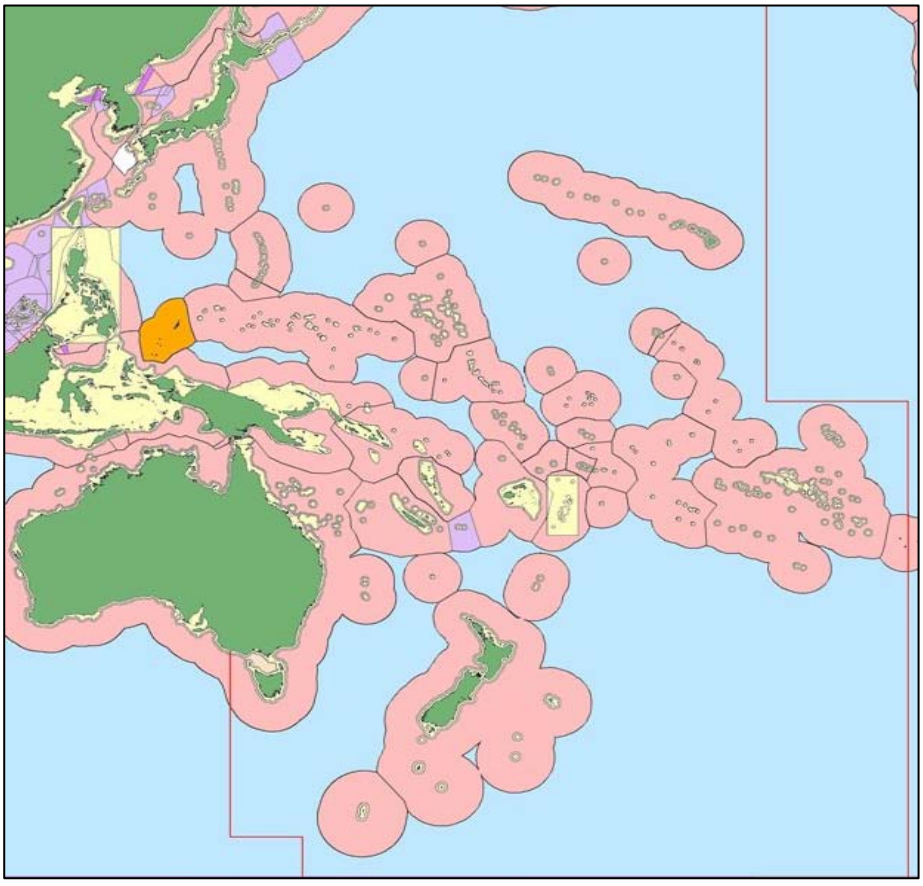

Figure 1 **Map of the Convention Area showing indicative EEZs (note, Palau has a Fishing Zone rather than an EEZ).**

[12] Australia, Cook Islands, Federated States of Micronesia, Fiji, Kiribati, Marshall Islands, Nauru, New Zealand, Niue, Palau, Papua New Guinea, Tokelau, Tonga, Tuvalu, Samoa, Solomon Islands and Vanuatu

[13] Federated States of Micronesia, Kiribati, Marshall Islands, Nauru, Palau, Papua New Guinea, and Solomon Islands

2.3.2 Implementation of the Hybrid SDM

The jurisdictional complexities of the region, combined with the Commission directives described in Article 28 of the Convention require an observer programme with an infrastructure based on the ability of national and sub-regional programmes to recruit, retain, and deploy observers. Under the guidance of the Commission, all coastal and flag nations will, to the extent possible, provide for the recruitment, standardized training, deployment and retention of observers.

2.3.2.1 Responsibility for achievement of coverage requirements under different jurisdictions

The Commission Secretariat will be responsible for monitoring the achievement of mandated coverage levels throughout the Convention Area, according to the requirements of the Commission. The coverage level for the ROP will be less than 100 per cent for the foreseeable future (see Section 2.2.2). The SDM therefore requires a process by which vessels and vessel trips are selected for observer deployment and observers are provided. Article 28, Paragraph 4 of the Convention, identifies three types of fishing trips by fishing vessels that may require observer coverage:

1. vessels fishing exclusively on the high seas in the Convention Area;
2. vessels fishing on the high seas and in waters under the jurisdiction of one or more coastal States; and
3. vessels fishing in waters under the jurisdiction of two or more coastal States.

Under Article 28, vessels operating solely within the national jurisdiction of a flag State do not require observer coverage under the ROP. In addition, When a vessel is operating on the same fishing trip both in waters under the national jurisdiction of its flag State and in the adjacent high seas, an observer placed under the ROP will not undertake observation duties when the vessel is in waters under the national jurisdiction of its flag State, unless the flag State of the vessel agrees otherwise.

Some of the basic options for servicing the observer coverage requirements of these types of trips are described in Figure 2. This is for illustrative purposes only and is not intended to cover all possible options and scenarios and it shows three basic scenarios for vessels requiring observer coverage:

1. a vessel operating on the high seas in the Convention Area.
2. a non-local vessel (either from another state within the region, or from a distant water fishing nation) operating within an EEZ; and
3. a local vessel operating exclusively within its own EEZ.

Scenarios 1 and 2 cover the three types of trips set out in Article 28(4). Scenario 3 is included for completeness, but, as indicated above, a local vessel operating exclusively within its own EEZ is not obligated to take part in the ROP.

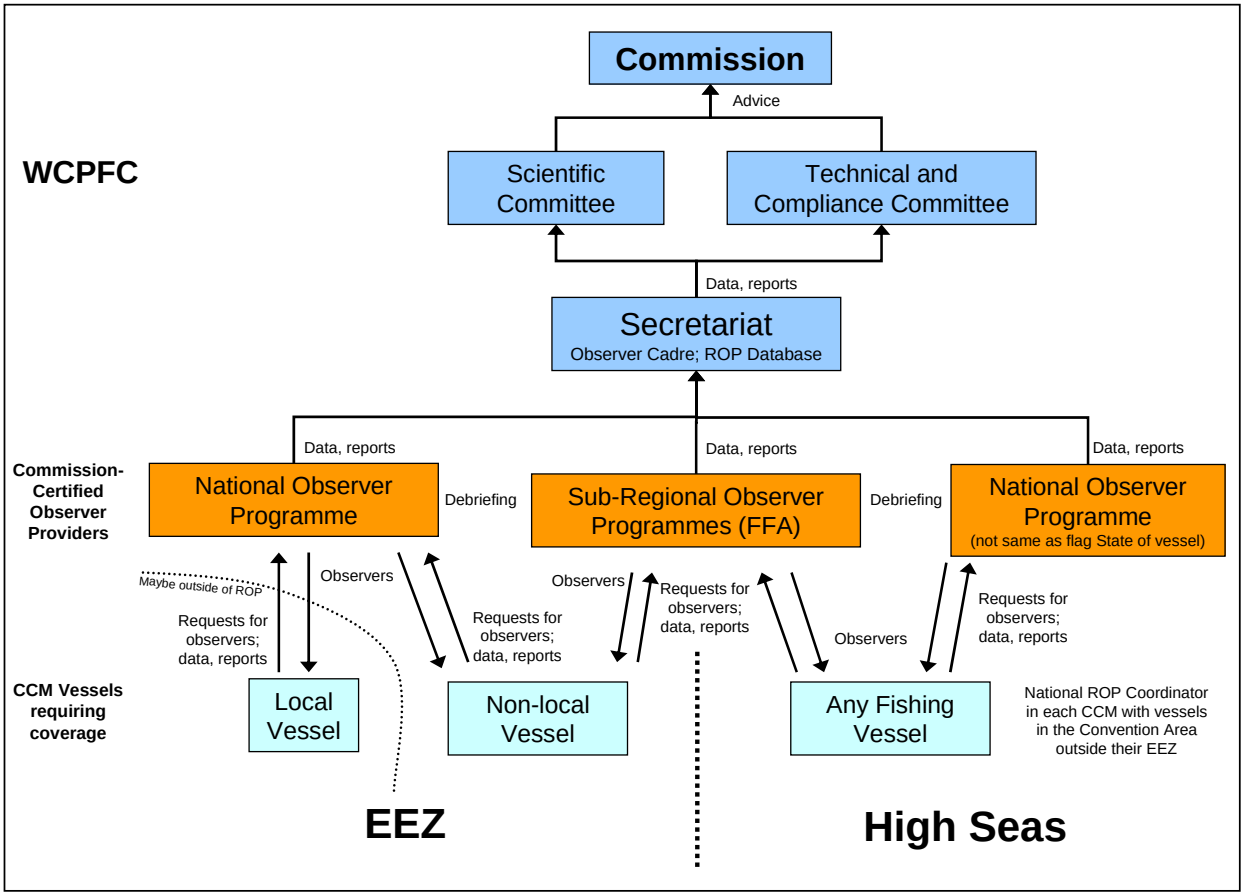

Figure 2 Basic options for the servicing of the observer needs of vessels in the Convention Area under the Hybrid SDM (not intended to cover all possible observer deployment options).

As shown in Figure 2, national and sub-regional programmes will supply and manage the deployment of observers on selected trips that take place within EEZs and on the high seas in the Convention Area[14]. Required coverage levels will be agreed by the Commission, based on recommendations from the Scientific Committee, and the Technical and Compliance Committee (TCC). These levels will be specified, as necessary, by various strata, including fleet, target species and geographic area. The responsibility for selection of trips to be observed and achievement of mandated coverage levels rests with the flag State of the vessels. Each CCM must ensure that vessels under its flag that operate in the Convention Area receive the necessary observer coverage in all areas of operation, including EEZs and high seas.

Regarding the sampling of trips, some CCMs are well equipped to do this, but others may require technical support to ensure trips are selected according to the required sampling protocols (e.g. stratified random designs etc.). The Commission Secretariat will provide the necessary support either directly, or through contracting with external suppliers. Trip selection will need to comply with sampling protocols approved for specific fisheries by the Commission.

[14] Although Figure 2 suggests that a non-local vessel operating within an EEZ should carry an observer either from a sub-regional programme or the local national programme (providing this is a certified observer provider for the ROP), such a vessel may also obtain its observer from another certified national programme. Therefore, a vessel already carrying an ROP observer from another national programme when it enters an EEZ is not required also to take on board an observer from the local national programme, unless this is a specific requirement of the coastal State (i.e. a requirement outside of the ROP).

In order to qualify to provide coverage under the ROP, the national and sub-regional programmes will need to be certified as conforming to the requirements of the ROP (see Section 2.3.2.2 for further details of the certification procedure). Certification may be applied to any of the existing observer programmes in the region (as depicted in Figure 2). CCMs may use private observer companies to facilitate the recruitment, training, deployment and recovery of their observers, but the responsibility for meeting the requirements of the ROP rests with the CCMs of both the observed vessel and the observer. Certification therefore applies to the national or sub-regional programme of which the commercial provider may be part, but not the commercial provider itself. The Secretariat will keep these procedures under review and will report to the Commission on their implementation.

A CCM flag State requiring an observer for a specific vessel trip will be free to choose to obtain an observer from any other CCM that is a Commission-certified observer provider, or from a sub-regional programme. Existing national and sub-regional observer programmes will offer their expertise and observers to CCMs other than those they have covered to date, thereby increasing the options for those seeking observer coverage. Unless a CCM vessel is operating exclusively within its own EEZ (in which any observer coverage is outside that required by the ROP), it must receive an observer from another CCM.

The arrangements between the CCM (flag State) of the vessel and the CCM of the observer (i.e. the national observer provider) must be covered by a contractual arrangement. This can be in the form of a Memorandum of Understanding (MOU) that mandates the various requirements of the ROP, including data collection protocols and reporting requirements (Section 2.4), observer competence levels (including training) (Section2.5), and the rights, duties and responsibilities of observers, captain and crew (Section 2.6). An MOU can be agreed for multiple observer deployments between the same CCMs over a period of time[15].

While local vessels operating exclusively in their own flag State's EEZ are not required to carry observers under the ROP, a CCM can use the procedures of the ROP when placing observers on its domestic fleet from its national programme if it so chooses. If a CCM requires observers for its domestic fleet operating in its EEZ, but is unable to source them locally, it can also make an arrangement with any other CCM's national programme or a sub-regional programme to supply an observer. The Secretariat should monitor such deployments and liaise with the CCMs involved (i.e. the flag State and the observer provider) to determine the extent to which they contribute to coverage requirements under the ROP.

To meet certain special observer coverage needs, the Commission Secretariat may set up a cadre of experienced observers that is able to react rapidly to specific situations. This Observer Cadre will also play a part in observer data quality control (Sections 2.3.2.4 and 2.4) and may also be in a position to provide assistance to national programmes seeking certification to provide observers to the ROP.

2.3.2.2 Certification of observer providers and use of standardised procedures

The Commission will outline procedures for the certification of observer providers. Certifiable observer-providing organisations for the ROP will include national and sub-regional programmes (see Section 2.3.2.1) regarding the use of commercial observer companies). This certification system will be implemented and maintained by the Secretariat. It is expected that the existing sub-regional and most existing national observer programmes will achieve certification without difficulty (See Appendix 2). Those national programmes that do not meet the standard for certification at the start of the ROP will receive guidance from the Secretariat on the requirements for certification and how this can be achieved as quickly as possible. Certified observer providers will be required to accept periodic assessment by the Commission, to be carried out by the Secretariat.

[15] There is no precedent under the CCAMLR Observer Scheme for an MOU between a CCM of an observed vessel and a sub-regional programme such as the MTF and FSM Arrangement programmes (such programmes do not exist in CCAMLR waters). Even if the observer were supplied by a sub-regional programme, the MOU would therefore need to be between the CCM flag State of the vessel and the CCM of the observer. The Commission should review the possibility of an MOU being agreed between CCMs and FFA to cover ROP observer deployments from the sub-regional programmes.

The following basic standards for observer providers will form the basis for the certification system:

A certified national observer provider will maintain a shore based staff[16] that provides the following services, *inter alia*:

- Recruitment, selection and training of individuals (note, training may be provided centrally by a third party such as SPC, which will also receive certification from the Commission for this purpose);
- Capability to implement the technical and operational protocols for the observer role and tasks, including data management issues, as required by the Commission;
- Day to day management of observers, including all personnel and financial matters, and the co-ordination of all logistical components;
- Capacity to handle efficiently and effectively the deployment and recovery of observers;
- Capacity to arrange for debriefing of observers and primary checking and validation of data collected and reports prepared.
- Maintenance of good communications links with client States, companies and vessels receiving observers

Ideally, a certified observer provider will have senior observers with substantial prior experience and/or industry experience to act as mentors to new observers entering the fishery for the first time. The Commission will approve standardized observer materials to be used by observers and observer providers throughout the Convention Area. These materials will include observer data reporting forms, data collection procedures and training guidelines. Standard procedures will be set out in an observer manual to be prepared and maintained by the Secretariat.

Some CCMs may opt not to establish their own full-scale national observer programme and rely instead on other certified providers to meet their observer coverage requirements. However, irrespective of whether there is a national programme in place, each CCM must designate at least one **National ROP Coordinator** to deal with issues related to the ROP and coordinate observer deployments and maintenance of coverage levels on their flagged vessels that operate in the Convention Area outside their EEZ. Observer exchanges and recruitment from other CCMs is encouraged to maintain consistency and increase mutual trust.

2.3.2.3 Observer deployments

Each CCM shall be entitled to have its nationals included in the observer programme. Once a vessel has been identified by its flag State as being required to carry an observer under the ROP on a forthcoming trip, the vessel (assisted by the flag State) must make arrangements to obtain an observer from a certified observer provider and have that observer embarked on board.

The flag State of the vessel must ensure that a reasonable period of notice is given to the receiving vessel that a forthcoming trip must be observed. Observers will embark on board vessels at ports of trip origin for complete trips unless otherwise agreed between the vessel's CCM and the observer provider (see Section 2.3.2.1) regarding observation of trips that cover both the EEZ of the flag State of the vessel and waters outside that EEZ.). Deployment directly from fishery patrol vessels may also be possible where facilities exist.

While on board the vessel, the vessel operator shall provide to the observer, at no expense to the observer or observer provider, food, accommodation and medical facilities of a standard equivalent to

[16] This staff may be part of a CCM's national authority itself, or it may be provided through a contract between the national authority and a commercial company. In the case of the latter, the services and structures of the commercial company will be assessed as part of the certification process, but the responsibility for certification rests with the CCM.

those normally available to an officer on board the vessel and as may be acceptable to the Observer Provider, whose representative is serving as the observer.

While at sea, particularly in the case of long trips (more than one week) the observer provider will maintain regular contact with the observer to offer technical support, personal support, and information on new developments in the observer programme as necessary. Regular contact offers an opportunity for the observer programme to obtain initial indicators for quality assurance, assure the provider the observer is in good health and help maintain morale.

2.3.2.4 Observer recovery and debriefing

A single observer trip should not normally exceed three months. Observers will be recovered and repatriated by the most efficient and rapid means possible. Disembarkation should take place as soon as possible after the completion of fishing activities for which observer coverage is required[17]. The receiving vessel shall make every reasonable effort to enable observers to be disembarked near to their home State. Repatriation to the observer's home State should normally be possible within two days of disembarkation from the vessel, depending on available flights etc.

The 6th Pacific Island Regional Observer Coordinators' Workshop produced a document outlining a Proposed Regional Debriefing Policy. This outlines the importance of introducing a harmonised and effective debriefing strategy for the ROP (including the national and sub-regional observer programmes) to maintain data quality and programme performance standards. The Workshop recommended that an observer's Vessel Trip Monitoring Form is reviewed and any critical incidents followed up.

The Commission Secretariat will provide a standardized procedure for the debriefing of all observers deployed under the ROP at the end of each trip. This includes the preparation of standard debriefing form (DBF) to recording the results of the debriefing[18]. Debriefing will be conducted only by certified debriefers from certified observer service providers (national and sub-regional observer programmes or other certified providers) and may be monitored from time to time by the Secretariat. The Secretariat will develop procedures for certification and decertification of debriefers, to be implemented by certified observer providers[19]. A pool of observer debriefers will be built up over time within certified observer programmes across the region to service the debriefing needs of the ROP[20]. This will not only ensure that the debriefing staff understands the issues the observers deal with but will also provide motivation for observers to stay in the programme and produce good data so they become eligible to become certified debriefers. The aim will be to establish an appropriate ratio between number of debriefers and observers, e.g., one debriefer per five observers [21].

Once the standard debriefing policy is in place (see Section 3), it will be possible for observers to be debriefed by debriefing agents from outside the programme from which they originated (i.e. an agent from another national or sub-regional programme or other certified provider). It is very important, however, that the debriefer understands the context in which the data were collected. Observers should return to port with data forms complete and all information ready for debriefing. The debriefing is a vital opportunity for checking through the data records and resolving any issues immediately following the observed trip (see Appendix 4). The observer provider should make

[17] In the event that fishing activities are continuing over an extended period, and further observer coverage will be needed within the same trip, the observer may remain on board, providing the break in fishing activities requiring observation is no more than [one week]. For longer periods, a specific agreement is needed between the receiving vessel and the certified Observer Provider.

[18] Standard debriefing forms have already been produced for most observer programmes in the region.

[19] Minimum requirements will be established to become a certified debriefer, e.g., a minimum number of days and trips at sea, other fishing industry experience, references, and completion of a competency course.

[20] It is possible that debriefing certification will be gear-specific. Observers will therefore need to become familiar with different gear types, through direct experience, in order to become fully certified.

[21] It is expected that experienced observers from the larger national programmes such as Papua New Guinea and the Solomon Islands could be certified rapidly at the start of the ROP. So as not to limit the number of trips that can be debriefed at the start of the ROP, additional debriefers could be recruited from outside the region, particularly to help with new and emerging national observer programmes.

arrangements for the data to be entered into the Commission's Observer Database as soon as possible by qualified data-entry personnel

A DBF must be completed by the debriefer during the debriefing. Any references to instances of harassment, safety concerns, fisher interference with or intimidation of the observer, and any refusals to carry an observer, must be documented and affidavits completed. These documents should contain a detailed explanation, including what, whom, when, where, why and how. The DBF will also provide space to document discussions, errors, misunderstandings, and to substantiate changes to data forms. The debriefer must keep a clear record of all questions and resolutions with regard to data and include this information on the DBF. The debriefer must contact the observer's originating programme and forward a copy of the DBF immediately after the debriefing has taken place. The DBF is part of the observer report and must be submitted by the observer provider, with the data and the rest of the observer's report to the Commission Secretariat within one month of the observer's debriefing. All outputs from an observed trip (data and reports) must also be sent directly to the National ROP Coordinator of the CCM (flag State) of the observed vessel within the same time limit.

Under extraordinary circumstances, it may not be possible to conduct a standard debriefing at the end of an observer trip. In this case, the observer must still receive a copy of the debriefing form as soon as possible after the trip and the completed form must be sent to the originating observer provider without delay. In any event, a full debrief must be carried out as soon as is practicably possible. It is particular important that if debriefing is to cover multiple trips on various vessel types, observers are required to record all details of the sampling methodology for each vessel prior to placement on the next vessel.

Arrangements for recovery of the cost of debriefings carried outside the originating observer programme must be agreed between the originating programme and the programme providing the debriefer. With the movements of vessels and hence observers around the region, it is expected that a reciprocal understanding will develop such that the costs of debriefing are naturally shared amongst the programmes without the need for a formal cost recovery system. Should one or a few programmes find that they are having to shoulder a disproportionate burden of the debriefing responsibilities, the Secretariat will assist in developing a cost recovery plan.

2.4 Data Collection and Reporting

2.4.1 Standard formats

The ROP will implement a standardized data collection process, including standardized reporting formats. All observer programmes contributing to the ROP must collect the same basic information. Some national programmes may collect additional data; however, the minimum standard applies to all observers placed on Commission authorized vessels (see Section 2.2.3 for data collection priorities). The primary forum for formulation of harmonized data collection and reporting procedures will be the Data Consultative Committee (DCC) in which all Members of FFA participate (in conjunction with the SPC)[22]. All of the national observer programmes currently use DCC-endorsed formats. The Commission will nominate a representative to participate in the DCC to ensure that Commission interests are represented[23].

The ROP will use the series of forms developed by SPC for observers aboard longline, pole and line and purse seine vessels[24]. In addition, there are a number of general forms completed by observers aboard all vessel types. Each form is accompanied by detailed instructions defining data format and codes as required. All forms include instructions that guide observers through the collection and sampling process with the exception of the longline forms, which provide detailed instructions for form filling only. Existing data collection forms are listed below:

[22] WCPFC/TCC1/14, paragraph 46.
[23] The DCC meetings are held every other year, with the next one scheduled for December 2006.
[24] http://www.spc.int/oceanfish/Html/Statistics/Forms/index.htm#Obs

General Forms	Field data collection instructions
	GEN-1 - Vessel and aircraft sightings and fish transfer log
	GEN-2 – Species of special interest sighting and interaction reporting form
	GEN-3 - Vessel trip monitoring form
	GEN-6 - Pacific regional pollution report
Longline forms	LL-1 - Longline general information
	LL-2/LL-3 – Longlining set and hauling information form
	LL-4 - Longline catch monitoring
	LL-5 - Longline conversion factors
Pole and line forms	PL-1 - Pole and line general information
	PL-2 - Pole and line daily log
	PL-3 - Pole and line catch details
Purse seine forms	PS-1 - Purse seine general information
	PS-2 - Purse seine daily log
	PS-3 - Purse seine set details
	PS-4 - Purse seine length frequency
	PS-5 - Purse seine well loading

2.4.2 Data handling, quality and security

A central ROP database will be designed and implemented by the Secretariat to receive the standardized data[25] (see Appendix 4). This will include a data entry module that can be used by observers and observer providers for the primary entry and checking of the data. Data and/or information collected by the ROP will be verified for accuracy and quality control purposes and transmitted in a timely fashion to the Secretariat for inclusion in the central database. The Secretariat will provide oversight and quality assurance of data, but the responsibility for primary data quality control will be at the point of debriefing (Section 2.3.2.4). In addition, the Secretariat may hire and train experienced observers as part of the Observer Cadre (Section 2.3.2.1) to be Data Quality Control Officers. These individuals may be deployed to the major ports and observer programme offices to verify data quality through additional targeted debriefing (i.e. in addition to the standard debriefing of observers by the observer provider).

Data confidentiality is a major concern. All parties must understand the confidential nature of the data collected by the ROP. Security standards for data handling by observers and other personnel and computer systems on which confidential observer data are stored will be developed and approved by the Commission in accordance with its Information Security Policy. The maintenance of these standards will be the responsibility of the Secretariat (see Appendix 4).

Individual vessel data will be available to only authorized persons as per the data access procedures of the Commission.

2.5 Observer Competencies and Training

2.5.1 Recruitment

The Secretariat, in consultation with existing programmes, will establish a minimum standard for observer selection to be used by certified observer providers (see Appendix 2). During the first year of implementation of the ROP, the Secretariat will review observer qualification standards for each of the existing programmes, and determine a minimum level for observers in the ROP. During the second year of implementation of the programme, all certified observer providers must meet the recruiting standards for all new recruits.

[25] The SPC OFP will initially receive and process all observer data until the ROP database is fully functional.

2.5.2 Training

Much of the training of observers for the national and sub-regional programmes is conducted by the FFA Secretariat in conjunction with the SPC. The training is delivered through a course organised by experts from the FFA Secretariat and the SPC, assisted by the U.S. National Marine Fisheries Service based in Hawaii. The standard course lasts approximately four weeks, and is both comprehensive and intensive.

This arrangement will be utilised for the ROP to ensure a training standard is established at the earliest possible stage. All certified observer providers will be expected to put their observers through a training programme organised in this way.

Participants will be selected to attend training after being nominated by their respective CCM. From these nominations, participants who pass the entrance criteria developed by the FFA Secretariat and the SPC will be selected for training. Training includes the following elements:

- Health and safety in transit and onboard vessels and Sea Survival (Appendix 5);
- Observer code of conduct (Appendix 6);
- Background information on fisheries in the WCPO including the WCPFC and the prevailing culture and attitudes towards observers;
- Gear technologies and operational procedures of selected fisheries (purse-seining, long-lining, pole and line;
- Basic navigation;
- Species identification
- Monitoring Catch and Vessel activities,
- Environmental monitoring;
- Species of Special Interest Interaction Reporting
- Sampling design/strategies
- Data management; and
- Report writing and production.

For select courses, observers are also introduced to the Inter American Tropical Tuna Commission (IATTC) formats that must be used on vessels that cross over into the Eastern Pacific.

Training workshops will be organised so as to:

- encourage standardization across regional/national programmes;
- explain the role of the ROP as a management tool;
- describe the evolution and position of the ROP within the activities of the Commission;
- demonstrate support of the observer role amongst CCMs;
- contain familiarization exercises that introduce observers to training topics;
- utilise the experience amongst the observer cadre, e.g., have experienced observers provide demonstrations;
- devise practical lessons where possible and utilise field training opportunities, e.g., biological sampling, measuring gear;
- use exercises to illustrate training topics and test attendees, e.g., data entry;
- ensure experienced individuals are available to work with inexperienced observers;

- include representative material of the fishery to illustrate training topics, e.g., images or video footage.

2.5.3 Safety Standards

The Commission Secretariat will establish health and safety standards for observer placement. This includes the requirement for all observers to pass through a certified safety at sea course, including procedures for survival in a life raft prior to their first deployment. All observers will be required to have a valid, up to date certification from an accredited safety at sea course prior to deployment. ROP training materials will include a detailed section on safety at sea (see Appendix 5).

All vessels that have been selected for observer coverage under the ROP must posses a valid sea going certification from their flag State that is available for the observer to inspect on boarding. If available, a maritime safety organisation must conduct a safety inspection of the vessels to certify minimum safety levels.

Observers must be permitted to carry out an inspection of health and safety standards (covered during training) and general living conditions on board their allocated vessel prior to leaving port. If the observer is unsatisfied with any arrangements a reporting system must be established in order to resolve issues. Observers should not be forced on to unsafe vessels.

2.6 Rights, Duties and Responsibilities of Observers, Captain and Crew

Guidelines for the rights, duties, and responsibilities of observers, captains, and crew are provided in Appendix 6. Observers and the personnel on board vessels selected for observer coverage under the ROP must be made aware of these guidelines by the certified observer provider. Alleged breaches of these guidelines will be investigated by the Commission Secretariat. Where possible, observer providers should develop a standard written agreement between the observer provider and the vessel, to be signed by the observer (as the provider's representative) and the captain of the receiving vessel. This agreement will state the role of observer, the tasks he/she is permitted to perform, the standard of living conditions on the vessel to which they are entitled; and their rights onboard (i.e. access to data and communication facilities).

The role of the observer and code of conduct, including matters such as confidentiality and use of data or images, will be covered in detail in the agreement between the observer and the certified observer provider.

2.7 Monitoring and Review (Programme Performance Assessment)

Evaluation of programme performance will occur at two levels: (i) performance of individual observer programmes that provide observer coverage and (ii) performance at the ROP level, including coverage level and data collected. Criteria for performance evaluation will be adopted periodically by the Commission according to ROP objectives. Performance evaluation will be under the primary responsibility of the Commission Secretariat. A periodic (e.g. every five years) independent evaluation will also be undertaken.

2.7.1 Evaluation at the individual programme level

Performance evaluation at the individual programme level will focus on the provision of services by certified observer providers in accordance with the standard procedures set out in this document. This will include:

- review of vessel and trip selection procedures
- verification of the timeliness of observer embarkation/disembarkation
- evaluation of observer performance based on debrief and reporting

- audit of data collected[26]
- assessment of maintenance of data security
- assessment of observer conduct through communication with vessel captains
- evaluation of debriefing reports to ensure maintenance of standards
- evaluation of the implementation of observer training and safety protocols
- review of observer compensation across the region

2.7.2 Evaluation at the ROP level

Performance evaluation at the ROP level will include:

- achievement of coverage levels by (*inter alia*) fishery and geographic area
- statistical performance against specific data objectives (measures of error and bias etc.)
- assessment of maintenance of data security

[26] See Appendix 4 regarding data audit.

3. Summary of Responsibilities and Implementation Plan

Table 1 summarises the responsibilities of the Commission Secretariat and the CCMs (including certified observer providers based in the CCMs). A draft implementation plan with a provisional time line for the establishment of the ROP is provided below.

Table 1 Summary of the responsibilities of the Commission Secretariat and the CCMs (including certified observer providers based in the CCMs)

Item	Responsibilities of the Commission Secretariat	Responsibilities of CCMs and/or certified observer providers based in the CCMs
Staffing requirements	Appoint Observer Programme Manager to oversee Commission responsibilities with respect to the ROP. Start development of the Commission Observer Cadre as needed (Section 2.3.2.1).	Each CCM with flag vessels requiring observer coverage under the ROP must appoint a National ROP Coordinator (Section 2.3.2.2).
Observer coverage requirements in the Convention Area	Communication of agreed coverage levels (fleets, target species, geographic coverage etc.) to CCMs. Monitor coverage levels relative to Commission requirements. Advise CCMs of coverage progress during season as information becomes available. Provide support to CCMs requiring technical assistance with implementation of sampling protocols (Section 2.3.2.1).	Select fishing trips by flag vessels in EEZs (other than domestic EEZ) and/or the high seas in the Convention Area for observer deployment under the ROP to meet Commission coverage level requirements (fleets, target species, geographic coverage etc.) according to approved sampling protocols (Section 2.3.2.1).
Certification of observer providers	Develop standards for certification under instruction from the Commission; undertake reviews of providers seeking certification and issue certification documents where appropriate; carry out periodic review and inspection of certified observer providers; provide expert advice to CCMs with national programmes that require upgrading to meet certification standards. (Section 2.3.2.2)	Those CCMs with National Observer Programmes seeking to be part of the ROP to ensure they meet the standards for certification agreed by the Commission (FFA and SPC to do the same for the sub-regional programmes). Make arrangements for observers to attend approved training for the ROP, coordinated through FFA and SPC (Section 2.5.2).
Observer selection and training	Commission to establish minimum standards for observer selection, to be disseminated by the Secretariat ready for implementation after the first complete year of the ROP. Review training programme implemented by FFA and SPC relative to the requirements of the ROP. Establish revised training standards as necessary to be implemented through a centralised system such as that presently operated by FFA and SPC.	Meet the recruitment standards set by the Commission. Meeting the standards will be voluntary in the first year, but compulsory thereafter. Ensure that all observers pass through the required training programme and meet the standard required prior to first deployment in the ROP.

Item	Responsibilities of the Commission Secretariat	Responsibilities of CCMs and/or certified observer providers based in the CCMs
Deployment and communication with observers while at sea	If observers are deployed from the ROP Observer Cadre, the Secretariat will take on the role of observer provider for those individuals, and will maintain contact with them while deployed at sea.	Arrange with certified observer provider for supply and deployment of observers on selected fishing trips. The vessel must accept an international observer from a CCM observer provider that is other than the flag State. An MOU must be signed between the CCM of the vessel and the CCM of the observer. The observer provider must maintain close contact with their observers while deployed on vessels (Section 2.3.2.2).
Safety at sea	Establish health and safety standards for observers at the start of the ROP. Review existing standards applied by the sub-regional programmes (Section 2.5.3).	All observers must pass through a certified safety at sea course and have an up to date certification prior to deployment. Allow observers to conduct an inspection of health and safety standards (covered during training) and general living conditions on board their allocated vessel prior to leaving port.
Standardised data forms and data collection procedures	Develop observer manual to explain data collection protocols and formats, covering (for observers) all aspects of observer deployments and activities. Maintain templates of approved data collection forms. Disseminate manual and templates to CCMs and certified observer providers (Sections 2.3.2.2 and 2.4.1).	Provide observers with observer manual and the required number of approved data collection forms. Observers to collect data in line with the current priorities and protocols established by the Commission.
Data handling	Development of the central observer database in line with DCC guidelines, including software for primary data entry to be used by observers and observer providers in the field. Database should be ready for deployment in the second year of implementation of the ROP. Commission to nominate a representative to sit on the DCC. Provide oversight and quality control of data and hire, train and deploy experienced observers as Data Quality Control Officers (Section 2.4.2)	Use the ROP database to enter and check data in the field. Provide facilities for data entry by qualified data entry personnel wherever possible. Submit data to Commission Secretariat in electronic form. Cooperate with Data Quality Control Officers appointed by the Secretariat.

Item	Responsibilities of the Commission Secretariat	Responsibilities of CCMs and/or certified observer providers based in the CCMs
Recovery (debriefing) of observers	Prepare and disseminate materials for debriefing, including the debriefing policy, standards for certification of debriefers (by certified observer providers) and the standard debriefing form (DBF); monitor, and where necessary supervise the certification of debriefers by certified observer providers; train experienced members of the Observer Cadre to undertake targeted debriefing and monitor data quality (Section 2.4.2).	Certified observer providers from within CCMs to certify experienced observers as debriefers. Conduct debriefing according to policy and standards set out by the Commission and communicated by the Secretariat. After each observed trip, observer providers to submit data, report and DBF to the Secretariat and the National ROP Coordinator of the CCM of the observed vessel within stated time limits.
Data security	Follow the requirements of the Commission's (developing) Information Security Policy which aspires to ISO17795 standards – see Summary Report of AHTG [Data], 31 July-4 August, 2006 Manila, Philippines).	CCMs and observer providers to maintain strict procedures to ensure all data are transferred securely and confidentiality is maintained. Observers to sign confidentiality clause as part of their contract and submit data only to a certified observer provider. Individual vessel data only made available to authorised personnel (Section 2.4.2).
Rights, duties and responsibilities of observers, captain and crew	Finalise the guidelines for rights, duties and responsibilities of observers, captain and crew. Disseminate to CCMs and certified observer providers. Investigate any alleged breaches of the guidelines	Observer providers to make observers and the personnel on board vessels selected for observer coverage under the ROP aware of the guidelines and monitor their implementation.
Performance evaluation	Conduct evaluation of (i) the performance of individual observer programmes that provide observer coverage and (ii) performance at the ROP level, as per the performance criteria adopted by the Commission.	Cooperate with performance evaluation procedures implemented by the Secretariat.

IMPLEMENTATION PLAN	Year 1	Year 2	Year 3
STAFFING REQUIREMENTS			
• Appoint Observer Programme Manager			
• Develop Commission Observer Cadre (2.3.2.1)			
• Appoint National Observer Coordinator (2.3.2.1)			
COVERAGE REQUIREMENTS			
• Provide technical assistance, where necessary,			
to CCMs to implement sampling protocols (2.3.2.1)			
• Communication and monitoring of agreed coverage levels to CCMs (2.3.2.1)			
• Select trips for observer deployment to meet coverage requirements (2.3.2.1)			
CERTIFICATION OF OBSERVER PROVIDERS			
• Develop standards for certification (2.3.2.2)			
• Review providers seeking certification and issue			
certification documents where appropriate (2.3.2.2)			
• Carry out periodic review of certified providers (2.3.2.2)			
• Provide advice to CCMs wanting to upgrade current National Programmes			
• Current National Observer Programmes seeking certification to ensure			
that they meet Commission standards (2.5.2)			
OBSERVER INSPECTION AND TRAINING			
• Review of training programme currently run by FFA and SPC			
• Establish minimum standards for observer selection			
• Implement selection standards			
• Review of training programme currently run by FFA and SPC			
relative to requirements of ROP			
• Establish and implement revised training standards			
• Meet recruitment standards set by commission			
• Ensure observers meet minimum ROP training standards			
• Make arrangements for observers to attend approved training for ROP (2.5.2)			
DEPLOYMENT AND COMMUNICATION WITH OBSERVERS WHILE AT SEA			
• Develop system for tracking fishing effort and selecting vessels for sampling			
• Run pilot project on selected vessels to test logistics of deploying observers			
• Maintain contact with those observers deployed from ROP Observer Cadre			
• Arrange with certified observer provider for supply and deployment			
of observers on selected fishing trips			
• MOU between vessel and observer CCM if international observer is used.			
• Observer provider to maintain close conduct with observer while at sea			

Responsibilities of the Commission Secretariat

Responsibilities of certified observer provider based in the CCMs

IMPLEMENTATION PLAN	Year 1	Year 2	Year 3
SAFETY AT SEA			
• Review existing standards applied to sub-regional programmes (2.5.3)			
• Establish health and safety standards and apply to start of ROP			
• Observers to pass and maintain certified 'Safety and Sea' course			
• Allow observers to provide health and safety standards check on vessel			
before prior to leaving port			
RECOVERY AND DEDRIEFING OF OBSERVERS			
• Prepare and disseminate materials for debriefing (debriefing policy,			
standards for certification for debriefers and debriefing forms)			
• Monitor and supervise certification of debriefers by observer providers			
• Train experienced members of Observer Cadre to undertake targeted			
debriefing and monitor data quality (2.4.2)			
• Certified observer providers from within CCMs to certify experienced			
observers as debriefers			
• Conduct debriefings according to policy and standards set out			
by Commission			
STANDARDISED DATA FORMS AND DATA COLLECTION PROCEDURES			
• Specify key outputs			
• Develop observer manual			
• Develop and maintain templates for data collection forms			
• Disseminate manual and templates to CCMs and certified			
observer providers (2.3.2.2 and 2.4.1)			
• Provide observers with manual and required number of data			
collection forms			
• Observers to collect data according to priorities and protocols			
established by Commission			
DATA HANDLING			
• Development of central observer database in line with			
DCC guidelines			
• Development of software to be used by observer providers			
in the field			
• Commission representative to be nominated to sit on DCC			
Train and deploy Data Quality Control Officers			
• Use ROP database to enter and check data in the field			
• Cooperate with Data Quality Control Officers			
Responsibilities of the Commission Secretariat			
Responsibilities of certified observer provider based in the CCMs			

IMPLEMENTATION PLAN	Year 1	Year 2	Year 3
DATA SECURITY			
• Follow requirements of Commissions Information Security			
Policy (from summary report of AHGT [Data])			
• CCMs and observer providers to maintain strict procedures to ensure			
data are transferred securely and confidentiality maintained			
• Observers to sign confidentiality clause as part of contract and			
only submit data to observer provider			
• Individual vessel data only available to authorised personnel (2.4.2)			
RIGHTS DUTIES AND RESPONSIBILITIES OF OBSERVERS, CAPTAINS AND CREW			
• Finalise guidelines for rights of the all parties			
• Disseminate to CCMs and observer providers			
• Investigate alleged breaches of guidelines			
• Observer providers to make observers and personnel on board			
vessels aware of guidelines			
PERFORMANCE EVALUATION			
• Ongoing performance evaluation			
Responsibilities of the Commission Secretariat			
Responsibilities of certified observer provider based in the CCMs			

Appendix 1

Setting Objectives for an Observer Programme

This section should be read in conjunction with Section 2.2 of the main document.

Because of the importance of defining clear objectives as a means to guide development of an observer structure that will achieve those objectives, we have provided an introductory summary of underlying issues based on a Workshop on Fishery Observer Coverage Levels organised by NOAA Fisheries in the US[27].

The Coverage Levels workshop identified a process for developing observer programmes

Figure 3) that also works for further development and rationalization of existing programmes. The process requires three successive phases of 1) planning, 2) design, and 3) implementation. For this project, we will focus on three steps of the first two phases: Setting objectives, estimation methods and sampling design, and assessment of performance.

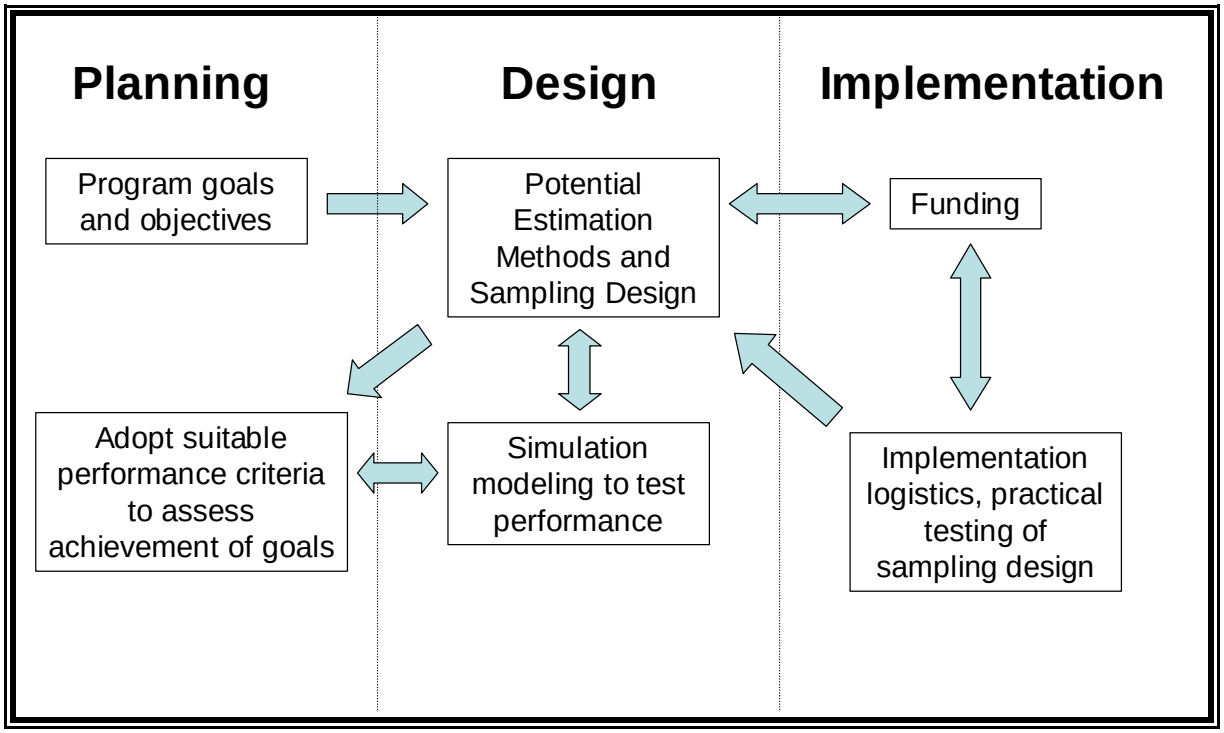

Figure 3 Process for developing observer programmes

Setting Objectives

The Workshop concluded that it is of paramount importance in the planning process for a rationally constructed observer programme to have a clear expression of what it is that the managers and/or scientists need to know and, if possible, how precisely they need to know it. There is a tendency in discussions of observer programme design and implementation to pose questions such as "are the data adequate?", "is the coverage level adequate?", or "what is the level of bias?" Such questions are meaningless unless put in the context of goals and objectives. It must first be determined in an

[27] NMFS Fishery Observer Coverage Level Workshop: Defining a Basis. July 2003, AFSC, Seattle WA.

unambiguous manner for what purpose data are to be deemed adequate or inadequate, what are the fundamental sampling units to be "covered," and what is meant by "bias" and in what quantities we may be concerned with such "bias." The range of sampling strategies and methods of estimation or prediction that may be "adequate" for meeting an intended objective depends first and foremost on definition of the objective. Therefore, the first specific task of this project cannot be completed without an understanding of "adequate for what."

Science objectives for the ROP

Sorting through and agreeing on the prioritisation of science objectives is a major task for the Scientific Committee, and must be driven by the information needs of the Commission's decision-making process.

Stock assessments conducted for major species in the WCPO use MULTIFAN-CL[28]. Stakeholders have expressed two different views on the extent to which observers are required to collect stock assessment data: the first is that observers are needed to collect data required for stock assessment, and the second is that that data obtained from port sampling are sufficient for stock assessment, leaving observers free to collect data for other purposes.

The MULTIFAN-CL model uses three key data sources: catch and effort; length frequency; and tag returns. Catch data do not include discards. Data are stratified into region, time, and fishery categories. Port sampling can provide all three data sources and the information necessary for stratification through biological sampling and logbooks. Observer data collections can supplement and confirm the port sampling data.

Observers must collect data on bycatch and discards as a high priority. Reporting of bycatch on log sheets is poor and is unlikely to improve, even in the long term. With the relatively low observer coverage at present, the total catch of the range of species can only be estimated with considerable uncertainty. Under the ROP, observers will increase monitoring of by-catch and discards through biological measurements and carcass retention/tissue samples of protected species; biological sampling of non-target fish species; and biological sampling of discarded target species. The Ecosystem and By-catch Specialist Working Group (SWG) has recommended improving the identification and reporting of catch to species level and recording fate and condition.

Compliance objectives for the ROP

The Commission may in the future establish restrictions on fishing activities[29] (e.g., total allowable mortality [catch plus discards plus unobserved mortality] by species; allocation of catch and/or discards among states or fleets, by-catch limits, protected species controls, rights based allocations of harvest; minimum size limits). The Commission can use observer data to monitor compliance with these types of restrictions. This does not necessarily require the observer to do anything other than continue to collect data as prescribed by the data requirements for a given trip. The determination of compliance, or otherwise, will be made by the Commission. Some management measures, such as minimum size limits, by-catch and protected species limits may require collection of additional data by observers (e.g. additional random samples of the catch for monitoring species composition and length, or hook tallies to monitor protected species catches).

Whenever compliance enters into the functions of an observer programme, there are impacts on data collection. Observers collecting purely scientific information have significantly reduced likelihood of

[28] Hampton, J., and Fournier, D.A. 2001a. A spatially-disaggregated, length-based, age-structured population model of yellowfin tuna (*Thunnus albacares*) in the western and central Pacific Ocean. *Mar. Freshw. Res.* **52**:937963.

[29] The Commission has passed several resolutions that make recommendations to members and that could lead to management actions. Current resolutions address the IPOA for seabirds (2005-01), avoidance of non-target fish (2005-03), and FAO guidelines for sea turtles (2005-4). Pending resolutions address by-catch, seabirds, sea turtles, and sharks.

being exposed to coercion, threats, violence or bribery than observers with compliance duties. For example, a cap on protected species interactions that has the potential to close a fishery or result in significant enforcement action could result in extreme pressure on the observer concerned. With respect to the detection of alleged violations by observers, it is recommended that observer programme staff should pass those incidents noted by observers to national authorities who in turn may pass the allegation to fishery enforcement staff or enforcement attorneys. For the case of regional programmes this typically entails informing the concerned country for their action in a timely manner. The ability to review observer supplied data and to develop any allegations or case materials should be a key consideration when establishing a Commission-based programme

Maintaining a balance

The Commission has identified that the purpose of the observer programme in its initial stages should be to focus on validation of catch but that other useful information such as vessel sightings could also be reported under the programme. Observers have no enforcement powers and will report on observations only. Compliance issues will be examined by the appropriate authority based on these observations and other information. Observers have no direct enforcement role, and should not send compliance reports from a vessel.

As the Commission develops specific management measures, the compliance related duties of observers will evolve. The TCC will assess the range of possibilities and keep under review the objectives of the programme and the associated priorities for observer activities.

Estimation Methods and Sampling Design

The range of sampling designs and potential estimation methods depends to a large extent on what the managers are prepared or able to do to obtain the data and information that the programme is required to deliver. There is no single correct statistical approach to estimation and inference in the analysis of data from observer programmes or for developing a deployment strategy. There is a need, however, for whatever statistical methods are used to constitute a *coherent* (logically based and internally consistent) set of procedures for estimation of and inference about values desired from observer programmes.

Observer sampling is a three-stage process. Selection of vessels for observation constitutes the first stage of the process. The second stage is selection of hauls or sets for sampling. The third stage involves selection of samples (or sub-samples) from within the haul or set; the need for randomized selection of sub-samples is understood, but practical limitations often compromise this requirement. Because the WCPO observer programmes must cover multiple fisheries, a complete recommendation cannot be developed without understanding the observer deployment tradeoffs for specific fisheries, which could then lead to recommendations across fisheries. Recommendations for sampling design and strategies may include more research for simulation of observer deployment, by constructing hypothetical fisheries with which to simulate observer deployment strategies within fisheries and across fisheries.

Approaches to the statistical analysis of observer data may be considered as falling into one of four categories; the census approach, the survey sampling approach, the modelling approach, and the Bayesian approach. Alternative estimators might take the quantities used in a ratio estimator form to consist of random variables, which would change the theoretical properties of such estimators. A Bayesian formulation of this problem is an attractive alternative[30]. This type of an approach might allow for both improved estimation for observed trips and quantification of uncertainty for unobserved trips.

[30] For example, see Example 2.4 on page 46 of Rubin, D.B. (1987), *Multiple Imputation for Nonresponse in Surveys.* New York: Wiley and Sons.

Appendix 2

Background information for the Hybrid Service Delivery Model

This Appendix should be read in conjunction with Section 2.3 of the main document.

The CCAMLR Service Delivery Model

The CCAMLR Scheme of International Scientific Observation was adopted in 1992 under Article XXIV of the Convention. Under this Scheme, Member State vessels operating in most fisheries (other than krill) in the Convention Area (whether inside an EEZ or not[31]) must carry an observer from another Member State. The basic institutional model within which the observer programme operates in CCAMLR is shown in **Figure 4**.

The placement of observers on vessels in the CCAMLR Scheme is achieved through mutual agreement between receiving (the observed vessel's flag State) and designating (the observer's State) Members. This agreement takes the form of a Memorandum of Understanding (MOU) signed by both Members' governments and is legally binding under the terms of the Convention and the Observer Scheme. It fulfils several functions, including:

- an outline of the observer role and tasks to be undertaken;
- protection of the rights of the observer;
- protection of the rights of the master and the vessel, and
- a signal to CCAMLR that the necessary observer coverage has been arranged for a given vessel/trip.

Responsibility for observer training, equipment and deployment generally rests with the designating CCAMLR Member. Standards are set out in the Observer Scheme. The Member may contract with a commercial observer provider to meet these obligations. Upon completion of an observed trip, the data outputs and a trip report are forwarded to CCAMLR by the designating Member State. Copies of the reports and data are also given to the receiving Member State with a preliminary copy of the report going to the vessel. Data and reports are used by the Commission for stock assessment purposes and assessments of vessels' compliance with CCAMLR Conservation Measures. The compliance assessment and decisions about further action are made by official bodies of the Commission and not by the observer.

[31] Within the CCAMLR Convention Area there are a number of coastal States whose maritime waters are subject to sovereign rights. The Convention allows those costal States to include or exclude there waters from the application of any Conservation Measure or the Scheme of International Scientific Observation and/or the System of Inspection. Some states prefer to operate national coverage in their sovereign waters (e.g. France with respect to Kerguelen and Crozet Islands), but others agree to implement the international scheme (e.g. the UK at South Georgia).

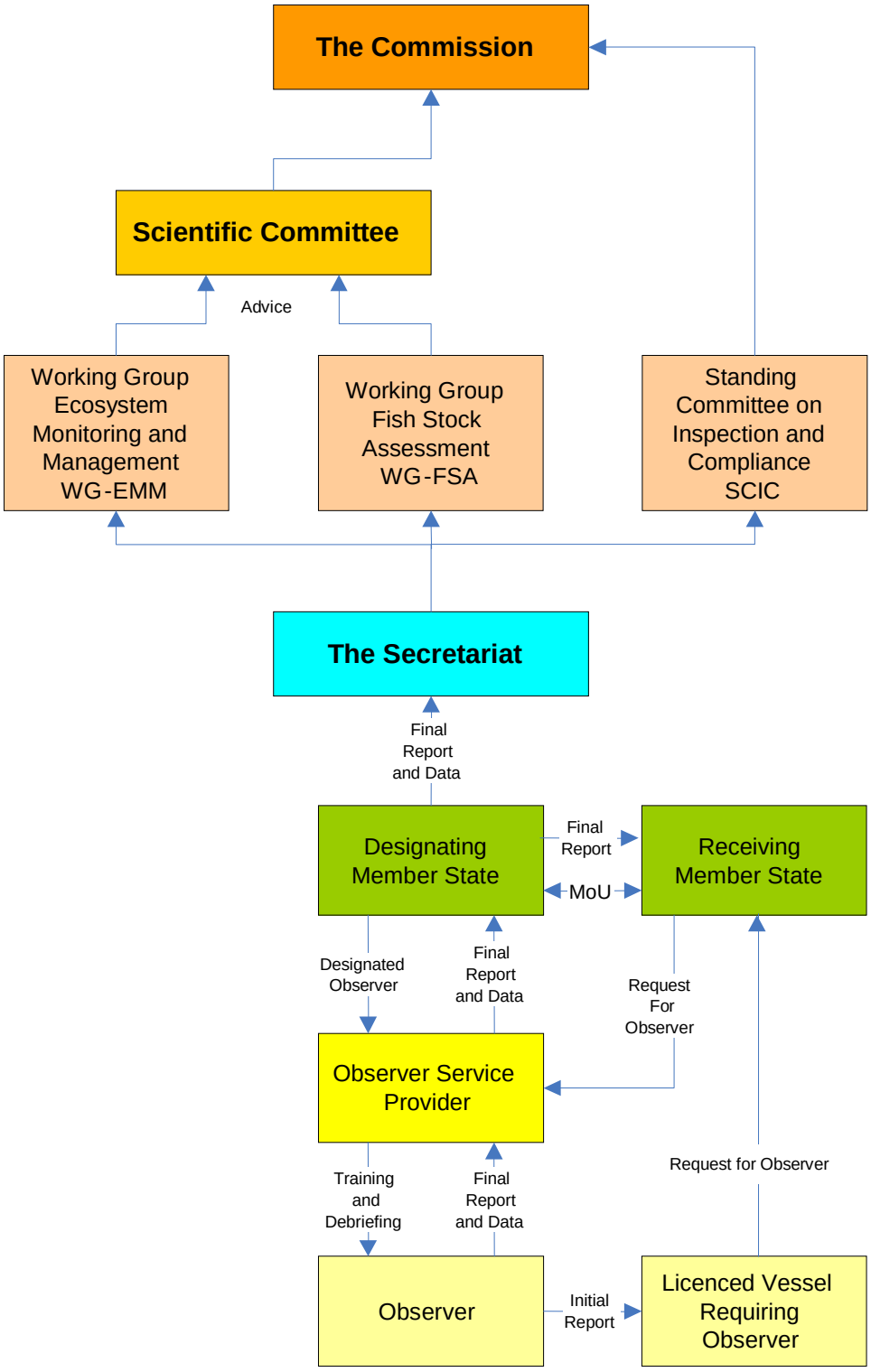

Figure 4 The CCAMLR Observer Programme Service Delivery Model

Observer Coverage Levels

To date, the sub-regional observer programmes in the WCPO have essentially confined their efforts to purse seine vessels. Observer coverage on longline, pole and line, and troll vessels has ranged from none to low. This will change under the ROP.

It is important to note that the design of observer sampling programmes is far from simple. The statistical qualities of the required parameters are often very poorly defined, and rarely lend themselves to that body of statistical theory that deals with normal distributions. Sampling is typically a three-stage process, with three levels that need to be considered – the vessel (i.e. how many vessels to sample), the haul (how many hauls to sample on a vessel) and within-haul (how many samples to take from any sampled haul). Solutions that have been adopted in other international forums may help to provide guidance, but observer programmes will have to be tailored specifically to the species in question and the particular operating characteristics of the various fleets. Furthermore, the ideal statistical sampling method will only rarely be practical to implement within budgetary and logistical constraints. Therefore we would caution at this stage against any decision being made about the correct level of coverage in terms of vessels to be covered, percent of fishing days to be covered, etc., until completion of a thorough evaluation of programme needs. The complexity and size of the fleets that fish in the WCPO (Figure 5; Table 2) may lead to different sampling requirements for the several fleets.

The Report of the sixth Pacific Island Regional Observer Coordinators Workshop pointed out that observer programmes should use 20 per cent as a target coverage rate for the fisheries. The coverage rates (proportion of days fished) in the WCPO region from 2002 to 2004 varied considerably by gear, from no coverage of troll vessels to nearly 20 per cent for purse seine vessels[32]. Longline vessels had coverage less than 1 per cent, while pole and line coverage ranged from about 3-30 per cent during this period. However, Lawson (2006)[33] points out that reliability of CPUE estimated from observer data depends on strongly on the level of CPUE. To achieve a coefficient of variation of the estimate of CPUE of 10 per cent, for unstratified sampling, requires a sampling rate from 8 per cent for skipjack tuna to 100 per cent for great white shark. Therefore, a blanket coverage rate may not achieve all the objectives set out for the observer programme.

This was reflected in a study commissioned in 2002 by the FFA which set out to examine the future of observer work for the Commission[34]. In this study the level of coverage was stratified depending in the type and size of the vessel (Table 2).

Table 2 Observer Projections of the Flewwelling Study (Source Flewwelling (2002))

Type of Fishery	Observer Coverage (%)	No Vessels 1999/2000	Days fished by fishery (estimated)	Proposed Observer Days
Purse Seiners	20	622 (250)*	63,588	5,088
Longliners >30m	15	400	71,679	10,752
Longliners <30m	10	3534 (1,500)	265,358	13,260
Pole & Line	5	1480 (294)	97,308	973
Total		6,036 (2,444)	497,993	30,073

Note: *Brackets are assumed number of vessels that would fish in the WCP Convention Area in either third party waters or high seas.

[32] Report Of The Sixth Meeting Of The Tuna Fishery Data Collection Committee, Appendix 5. SPC/OFP, FFA.
[33] Lawson, T. 2005. Observer coverage rates and the reliability of CPUE estimates for purse seiners in the Western and Central Pacific Ocean. WCPFC-SC2-2006/ST IP-3.
[34] Flewwelling, P. 2002. Western and Central Pacific Fisheries Commission – Regional Observer Programme Proposal. South Pacific Forum Fisheries Agency.

Recent studies of costs per observer day of observer programmes currently operating in the area range from $US56 for the IATTC up to $US92.42 for observers operating under the US treaty[35]. If these figures are applied to the projections from the Flewwelling study then this will give a ballpark range of costs between $US 1,684,000 and $2,767,000 per annum for running the programme with the given rates of observer cover. The Commission would need to decide how these costs would be covered (see section 3.8).

[35] Gillett, R. 2005. A Review of the FFA Regional Fishery Observer Programme. Gillett, Preston and Associates Inc. FFA Report #05/25.

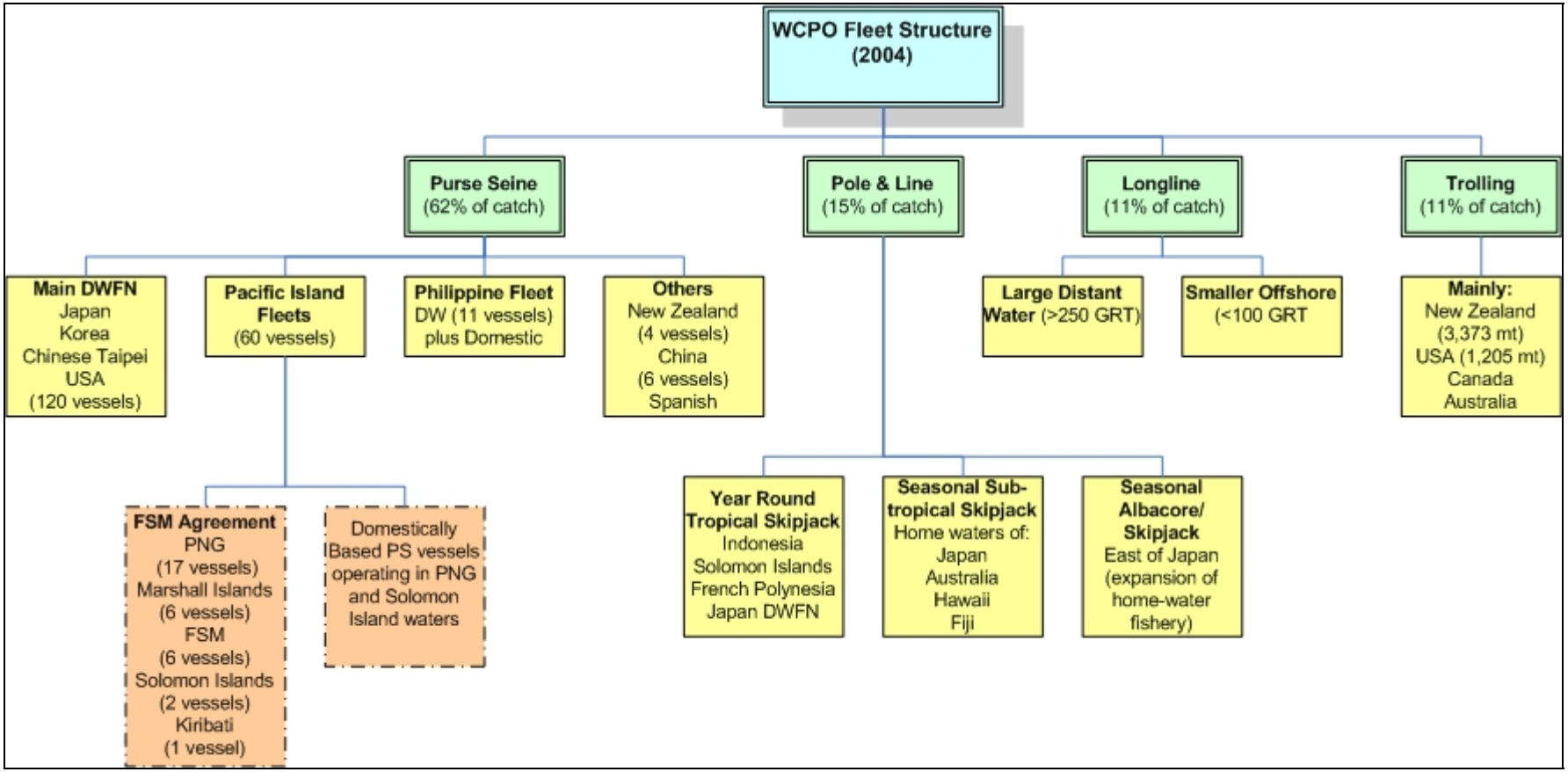

Figure 5 WCPO Fleet Structure

Table 2. Fleet sizes for WCPFC CCMs.

		Longline		Pole and line		Purse Seine		Trolling		Other	
Country	Total	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small
Australia	173	19	103	3	48						
Canada	0										
Chinese-Taipei	1929	655	1240			33	1				
Cook Islands	27	13	14								
EU France	23					23					
EU Portugal	11	6								5	
EU Spain	47	35	1			11					
EU United Kingdom	15	4								11	
FSM	12	6				6					
Fiji	0										
Indonesia	0										
Japan	1528	641	300			221	6		308	52	
Kiribati	0										
Korea	260	202				58					
Marshall Islands	0										
Nauru	0										
New Caledonia	26	7	19								
New Zealand	11	3	3			3	1	1			
Niue	0										
Palau	0										
Philippines	112	22				90					
Papua New Guinea	36	8	13			12					3
People's Republic of China	219	197	13			8				1	
Samoa	0										
Solomon Islands	4					4					
Tonga	12	4	8								
Tuvalu	0										
United States of America	566	30	118	1	11	16	7	14	217	23	129
Vanuatu	107	44	37			22	4				
Total	5118										
Large	2514	1896		4		507		15		92	
Small	2604		1869		59		19		525		132

Observer Recruitment and Retention

Many observer programmes require candidates for observer training to have college degrees. Experience in the WCPO demonstrates that persons without degrees can function as observers at high levels. However, lack of preparation for rigorous observer training could make successful completion of training more difficult for candidates without degrees. A pre-training selection and education programme, such as provided by the Alu Like programme in Hawaii[36], can assist in selecting individuals most suited to observer work and improve their chances of success.

Aside from the requisite educational qualifications in marine science, the basic qualities an observer should possess are as follows:

- be healthy and physically fit;
- display common sense and diplomacy skills;
- to be able to function effectively in a multi-cultural environment;
- be keen and self reliant; and
- have a sense of humour.

Some individuals will be more suitable equipped than others and it is important to identify them and utilise their skills and experience appropriately. Ideally, these would be broad marine science and/or industry based.

In the broader interests of the programme, it is important to retain the services of good, experienced observers for as long as possible. This has direct savings due to reduced time spent on recruitment, selection and training and improved day to day management and internal support. Improved observer retention also brings added benefits as it facilitates continuity and development of the programme, particularly if data needs change as objectives expand.

The interests of the programme and individual observer can be met through:

- Entry levels should be of a suitably high standard, e.g., combination of academic and relevant experience or even an entry exam. This will give selected individuals a quality of "creditability;"
- Work opportunities should be sufficient. This may be achieved by managing a smaller group of individuals (reducing recruitment) and where possible identify other temporary work sources which deter individuals seeking other opportunities. These may be associated within the existing project e.g. providing training to other observers and supportive tasks e.g. equipment acquisition or research jobs.
- Identify possible career paths and opportunities which stem from participation in the programme and provide advice accordingly;
- The objectives of the programme must be politically supported by contracting parties and value of the observer role demonstrated i.e. in the use of data outputs;
- Creating a positive identity for the programme, similar to branding, so that observers feel they are part of a larger/influential organisation e.g. participation in conferences and workshops, creating a logo, advertising the programme: sensitising stakeholders, local FMAs, colleges;
- Fair salary, which is paid on time and reviewed to reflect economic climate; and
- Experience should be recognised in rank and remuneration.

[36] http://www.alulike.org/services/kaipu_maritime.html

Sourcing observers from existing programmes

By utilizing the staff of the existing programmes to complete Commission required placements, the Commission can save substantial money and avoid duplication of effort. The national programmes' staffs are much more knowledgeable about the logistical requirements of placing observers in their home country. National and sub-regional programmes can facilitate the exchange of funds, help with visa issues, expedite travel arrangements, and help arrange observer lodging other support requirements.

National programmes will be a primary source of observers for Commission deployments. However, the national programmes are in varying degrees of development. Some programmes, such as New Zealand, Australia, Papua New Guinea, and Solomon Islands, have large, established programmes. These programmes all have experienced teams of observers, capable coordinators, and established infrastructures for hiring, training, debriefing, and logistics. These programmes could contribute immediately to a Commission Observer Cadre, providing experienced observers, logistical support, and knowledge of fishing patterns within their EZZ. Several other national programmes, such as New Caledonia, Cook Islands, Marshall Islands, Fiji, Tonga, and Samoa, are beginning to develop effective programmes. These programmes are establishing an experienced pool of observers, implementing data quality, and adding debriefing checks to their protocols. Many of these programmes are using standardized trainings. These national programmes could mature into reliable, established programmes over time given appropriate logistic and financial support.

The current coordinators and staff of the national programmes will contribute to the placement of Commission observers within their EEZs. The knowledge of local vessel and travel logistical, fishing patterns, and cultural customs that the staffs at the national programmes bring to the table must be integrated into a large regional programme. The national observer programmes may be able to provide debriefing sites for observers in strategic ports, reducing transportation costs and increasing flexibility. By incorporating the resources and wisdom of the national programmes into a regional programme the Commission will avoid many of the growing pains associated with new programmes.

Many of the small island costal states have difficulties establishing long-term observer programmes. The number of observer trips available is insufficient to maintain a reliable pool of experienced observers. Lack of funding or manpower creates a multitude of problems for these programmes. These programmes may initially require a large amount of support from the Commission Secretariat or other sources to enable them to contribute to the ROP.

It may not be necessary for every CCM to provide a full-scale national programme, but all should have an opportunity to provide candidates to the Observer Cadre. Many of the small island nations may prefer to opt to rely on other observer programmes in the region that are part of the ROP, or the Commission Observer Cadre, rather than assembling their own full-scale programme.

The Commission should consider the use of a contractor or proxy to help during the initial phases of the ROP. A contractor could be hired to develop an initial pool of observers and help establish a common certification process for all observer programmes under the Commission umbrella. A contractor could also provide services to the national programmes to enable them to achieve the ROP certification requirements. The Commission Secretariat could utilize a contractor with experience in a variety of different observer programmes to establish a programme that fits the particular nuances of the region and avoid many of the problems that arise in pilot programmes. The role of the contractor could be on an interim basis, until the Commission Secretariat is able to take the role over the running of the ROP, covering the responsibilities listed in Table 1 of the main report. Alternately, the Commission Secretariat could offer a sequence of contracts, one for the initial setup and subsequent contracts issued for the management of the programme.

Observers from other CCMs

CCAMLR requires observers to be nationals of a different Member State than the flag State of the vessel being observed. IATTC allows national programmes to observe their own vessels, but only up to a maximum of 50 per cent of the required coverage. The remaining 50 per cent must be observed

by IATTC-employed observers. In contrast, the Commission for the Conservation of Southern Bluefin Tuna (CCSBT) requires flag States to provide observer coverage on their own vessels at rates and standards specified by the CCSBT. The existence and success of national programmes implicitly suggests that independent and impartial information can be obtained by nationals on their own flag State vessels. Examples include current national programmes in Papua New Guinea, FSM, Australia, New Zealand and the USA. However, some believe that the existence of a national observer programme in of itself does not constitute a reliable compliance oversight mechanism.

These concerns can be partially addressed by a Commission-certified training that all observers must complete. In addition, a Commission-based debriefing system may be required. The Commission could either provide or certify all debriefing/quality control staff for national, sub-regional, and DWFN programmes. A debriefing/quality control staff hired and maintained by the Commission would be an expensive component of the programme. However, it could ensure that all programmes are maintaining data standards. A Commission debriefing staff could be included in the programme "overhead costs", similar to the database management, standardized printing, and training costs.

The Commission may choose an observer programme structure with flag vessels required to carry observers of another CCM. If so, it should consider allowing existing national programmes using observers of the nation that can demonstrate sufficient quality and integrity to continue using their own nationals as observers. Dismantling existing, highly functioning programmes would greatly increase logistic difficulties in establishing the Commission programme. As a practical matter, transporting observers without appropriate visas through some countries will prove impossible (e.g., Homeland Security regulations of the US would prevent citizens of most countries from entering ports in US territories, thereby precluding many non-US observers from functioning on US vessels).

Appendix 3

Jurisdictional issues in the Western and Central Pacific Ocean

Agreements and cooperation with other organizations are currently outlined WCPFC/TCC1/19. This is in response to Article 22 of the Convention that states that the Commission shall cooperate with other relevant intergovernmental organizations. In particular it highlighted:

- The UN Food and Agriculture Organization (FAO)
- The Commission for the Conservation of Marine Living Resources (CCAMLR)
- The Commission for the Conservation of Southern Bluefin Tuna (CCSBT)
- The Inter-American Tropical Tuna Commission (IATTC)
- The Indian Ocean Tuna Commission (IOTC)
- The Secretariat of the Pacific Community (SPC)
- The Pacific Island Forum Fisheries Agency (FFA).

As of the date of the drafting of the document the Commission had negotiated a Memorandum of Understanding with the SPC and a draft MOU with the CCSBT. In addition they decided to appoint a small group to work with the IATTC to promote consistency and avoid duplication of management measures that affect the migratory stocks that occur between the two regions. With the remaining organizations agreements were reached to develop and strengthen relationships throughout 2006 through attendance at future meetings. Figure 4 shows how the main organizations in the area link together.

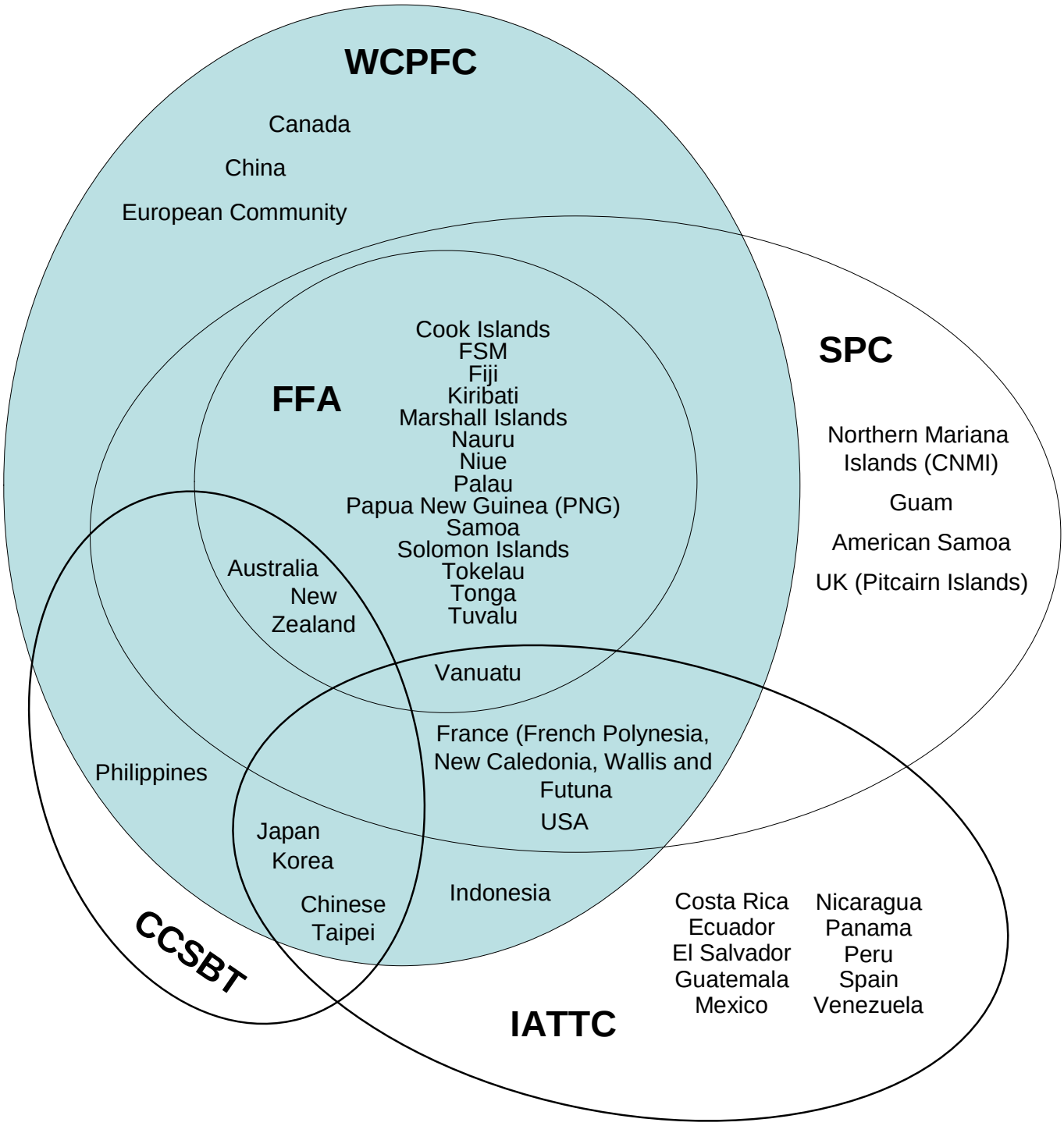

Figure 4 **Participation in the Regional Fisheries Management Organisations relevant to the WCPO**

Appendix 4

Data handling issues

This section should be read in conjunction with Section 2.4 of the main report.

Data auditing

The Commission Secretariat is tasked with the responsibility of checking the validity of data. In this capacity, the Secretariat will have to correspond with data originators to answer any discrepancies that remain in the data following the debriefing. This can be a costly and time-consuming task, but its importance cannot be understated. The Commission staff must assure the quality of data collected by observers, and assure quality of data entered and stored in the Commission database.

To assure quality control of the data and database, observer programme staff should confer with SPC/OFP staff to incorporate SPC protocols until the observer programme can develop and implement an in-house data audit policy.

One important consideration is that the origin of official data is often known to only a few national officers. Requests for clarification several years later, when those individuals have moved on, is much less likely to lead to a resolution of the problem than questions raised immediately following submission of the data. If investment in a data management section of an RFMO is not high, a large number of historical records are likely to have low quality reliability, because of the legacy effect of delayed checking.

Data provided to the OFP are checked both manually prior to data entry and by the data entry and data importing software (Lawson et al. 2002[37]). In observer programmes for which technical support is provided by the OFP, purse seine and longline debriefing forms allow the national observer co-ordinator (or a senior observer) to check each data field systematically and to query the observer as to whether they have followed the correct sampling protocol. The observer database software also screens the data in order to set a number of data quality flags that indicate whether the data can be used for various analyses, such as the estimation of catches of non-target species.

Certified debriefers should be responsible for debriefing observers in port directly after the observation trip. As policy, debriefing of each observer should occur after every trip. The debriefer should ensure that the interpretation of the data forms, based on the sample protocols of the Programme, correspond to what was actually observed. Staff should look over the forms for errors and blank fields first. The objective of this part of the debriefing is to verify that the data are present and recorded clearly.

Any unused data fields should be accounted for. All blanks should be resolved in debriefing as either N/A or unknown/undetermined. N/A should apply to fields that are not supposed to be recorded in these data. Unknown/undetermined fields are fields that should have been recorded, but were not for some reason. These fields should be filled in with an asterisk, numbered (e.g., *1), and addressed in the comments section.

Development of the Regional Observer Programme Database

PrepCon WP-16(rev) noted that in an interim phase of database development, the SPC-OFP could provide database services to the Commission. SPC-OFP capabilities compare favourably with those of organisations charged with handling equivalent data types and volumes.

SPC-OFP technical capabilities (hardware and software associated with the OFP DBMS) demonstrate a relatively sophisticated system, on a par with systems used elsewhere for the management of regional fishery data. The SPC-OFP already compiles fishery data for the entire WCPO region. Data

[37] Lawson, T., P. Williams, C. Millar and E. Schneiter. 2002. Data requirements of the SPC Oceanic Fisheries Programme and status of data. Oceanic Fisheries Programme Internal Report No. 47.

submissions are made on a voluntary basis and comprise predominantly data of coastal state origin, and as a result are not comprehensive. Notwithstanding this, the types of data handled do reflect the priority data types identified by the SCG. There is still some room for increasing the data management workload at OFP without increasing the number of current staff. However, if in the medium term, there is a major increase in data compiled on behalf of the Commission, then the situation may need to be reviewed.

Over a longer term, the Commission may undertake database functions in-house. PrepCon WP-16(rev) identified specific programmes that will likely come into force in the future, e.g., a regionally co-ordinated observer programme, research surveys, VMS, biological and ecological research, and stock assessment. WGII recommended that the Commission contract out some of these programmes rather than conduct them in-house. Some of these programmes (observer, VMS) have substantial confidentiality concerns that suggests that the Commission data management staff be responsible for developing (perhaps with consultant assistance) and maintaining the databases. On this basis, it is anticipated that the Commission will have responsibility for the observer database.

Draft Data Security Procedures for the Regional Observer Programme

Existing confidentiality requirements established by the SPC and FFA should form the basis of confidentiality policies for the Commission until the Commission observer programme staff can review them and, if necessary, recommend revisions.

The Commission should limit access to confidential data to authorized programme employees who interact directly with the data. All authorized employees should understand and sign the Statement of Non-Disclosure.

All observers participating in the ROP must understand that the fishing or processing operations they should observe include proprietary fishing strategies, locations, data, and business practices. Observers should agree not to discuss or communicate any of this information to third parties other than in any communication required by the Commission as a normal part of Observer Programme duties. Data shall not be released, reproduced, distributed, or published without prior approval of the Commission.

All observer data are the property of the Commission. All data, discs, back-up data, reports and other confidential information should be turned over to the certified ROP debriefer at the completion of each trip. No copies of data can be retained for personal use without the express written permission of the Commission.

Completed data forms should be kept in a secure location, and should be turned over to the debriefer following completion. All data should be stored in a secure location following debriefing.

The Commission Secretariat should ensure security of its computer network with a three-level approach. The original networking software should contain firewall code that should protect the network from unauthorized access. Access to all network terminals should be by password only.

Data or open computer files should not be left unattended. Confidential data should be gathered from output devices immediately. Any data output not included in reports (e.g. printouts for interim purposes) should be shredded immediately. All computer files associated with, or containing, confidential data should be stored only on computers and computer network systems with appropriate security in place.

All computer terminals and servers should be password protected. Only authorized personnel should have access to terminal passwords. All files containing confidential data should be stored in encrypted directories. Each authorized employee should have a unique encryption password. Passwords should allow access to only select files. For example one observer's encryption password or code should only allow access to files encrypted by that code. The observer should not have access another observer's data, as it should be encrypted with another password. Key Personnel should have an encryption access code that allows access to all programme data. Any transmissions of data should be encrypted to ensure security over the Internet.

If confidential data are stored on a single-user machine, such as a laptop computer, the computer should be accessible with a specific password. Access should be limited to authorized personnel. When not in use, single-user computers should be stored in a locked, padded security case. Single-user computers should only be used for data entry while in the field. All data should be removed following each debriefing.

Specific data types

Vessel Characteristics Vessel characteristics

The concept of a vessel register is now widely accepted as a valuable means of collecting vital information on vessels technical details and capacities (important for analysis of catch per unit effort data) and also for tracking vessel ownership and standing in terms of compliance with national and international management regulations. Fishing operators seeking to access resources managed under a regional fisheries arrangement should be required to register with the regional organisation and provide the required information on their vessel, company, master and catches. In Part V, Article 24 of the Convention text, vessel register information and procedures are discussed. Information requirements set out in Annex IV of the Convention:

- Name of fishing vessel, registration number, previous names (if known), and port of registry;
- Name and address of owner or owners;
- Name and nationality of master;
- Previous flag (if any);
- International Radio Call Sign;
- Vessel communication types and numbers (INMARSAT A, B and C numbers and satellite telephone number);
- Colour photograph of vessel;
- Where and when built;
- Type of vessel;
- Normal crew complement;
- Type of fishing method or methods;
- Length;
- Moulded depth; Beam;
- Gross register tonnage;
- Power of main engine or engines;
- The nature of the authorisation to fish granted by the flag State;
- Carrying capacity, including freezer type, capacity and number and fish hold capacity.

In addition to the information included in the list above detailed information is commonly submitted regarding: fishing gear attributes, including details of power blocks, winches, net type and configuration, hook size etc.; vessel technology in addition to communications equipment such as navigational equipment, fish finding equipment, EPRBs, transceivers (VMS) etc.; and, fishing vessel support, which may take the form of support vessels, helicopters, etc.

Compliance Data

At present, very few Conservation and Management Measures (regulations) passed by the Commission:

- Record of Fishing Vessels and Authorization to Fish – establishes a registry of vessels and flag nation requirements and authorizations to fish particular areas
- Cooperating Non-Members – establishes procedures for non-members to fish in WCPO
- Specifications for the Marking and Identification of Fishing Vessels – requires marking vessels with International Radio Call Sign (or International Telecommunications Union)and WCPFC Identification Number (WIN)
- Conservation and Management Measures for Bigeye and Yellowfin Tuna in the Western and Central Pacific Ocean – establishes requirements for CCMs to limit effort, establishes potential closed areas to gears, restrictions on FAD fishing, and procedure for catch limits
- Conservation and Management Measure for South Pacific Albacore – Establish effort limitation and catch reporting
- Conservation and Management Measure for North Pacific Albacore – Establish effort limitation and catch reporting

Of these management measures, observers can best provide information on vessel marking and noting vessels in fishing areas (for check against registry). Observers can also report any hindrance of observers by vessel crew.

While the Commission currently has limited compliance or enforcement requirements, these needs are likely to grow as Commission management measurements come into force. The Commission may initiate conservation and other regulations in the future, e.g., implement IPOA for seabirds, sharks, turtles that may require limits on by-catch takes or mortality. Commission has adopted (non-binding) resolutions for protection of seabirds (Resolution 2005-01) recommending compliance with IPOS for seabirds; non-target fish (Resolution 2005-03) recommending avoidance and release without harm of non-target fish; and sea turtles (Resolution 2005-04) recommending compliance with FAO guidelines for sea turtles. The Commission may begin to develop management measures for these species at the 2006 Annual Meeting. The Commission may also initiate measures for catch limits for bigeye, yellowfin, and northern and southern albacore. Observers can provide information to assist in confirmation of catch reporting.

As noted, few data elements have an exclusively scientific or exclusively compliance purpose. Rather, data may have multiple uses that include both science and compliance. The Commission has identified the following compliance components that may be applicable to a regional observer programme, taken from the United Nations Food and Agriculture Organization (FAO) Fisheries Technical Paper 414, entitled *Guidelines for developing an at-sea fishery observer programme*:

- Logbook validation
- High-grading and discarding
- Monitoring of prohibited species, protected species, species of interest or incidental catch
- Undersized and spawning species
- Fishing area and season restrictions
- Fishing gear documentation
- Validation of processed fish
- Documentation checks
- Sightings of other vessels
- Transhipment at sea

- Recording and reporting violations

Fish Attracting Device (FAD) fishing

Another area that may be of particular interest, given the target resource issues emerging in the Convention Area, could be having observers document the position of all FAD interactions including where and when the FAD was deployed, checked, set on, and picked up. Additionally, recording any identifying marks on the FAD could be expected as well. This issue will need to be deliberated and vetted with CCMs and their respective industries and commercial interests, given that many may view information related to FADs as proprietary (e.g., FAD construction, deployment and FAD fishing techniques). If these data are collected, they may need to be held and disseminated under elevated levels of control and with enhanced confidentiality standards. The sample design and selection of estimators will require precise definition of those quantities for which estimation is desired and the scale of resolution. For example, estimating length frequency for a species over an entire fishery will likely require a different design/estimator from estimating species-specific discards for an individual vessel. Detailed objectives will help determine the appropriate coverage levels necessary to achieve the objectives. Needs of the programme leading to coverage levels are scheduled as a topic of discussion in upcoming SC and TCC meetings.

Appendix 5

Safety issues

This Section should be read in conjunction with Section 2.5.3 of the main document.

Safety concerns for the ROP

The Commission's need for observer coverage on the longline, pole and line, and troll fleets will have significant ramifications from an observer health and safety perspective. To date, the sub-regional observer programmes in the WCPO have essentially confined their efforts to purse seine vessels. Observer coverage on longline, pole and line, and troll vessels ranges from none to low. In most cases, vessels of these latter fleets are smaller, may be less seaworthy and in some cases remain at sea for very long periods. The challenges of observing this fleet, in terms of observer safety, are significant.

Draft Instructions to Observers Regarding Safety at Sea[38]

Your personal safety is your first responsibility while working aboard a fishing vessel. Commercial fishing is one of the world's most dangerous occupations. Hazards can be made worse by the harsh, cold conditions of higher latitudes. Most vessel accidents and casualties are the result of human error. However, dangers can be greatly minimised through preparation, safe operations, good judgement, and reactions that are quick, calm, and effective.

Consideration should be given for the apposite inoculations that you may require prior to departing on your observer trip. Seek medical advice on the precautions further than the obligatory measures taken for tetanus, hepatitis, polio etc. The flag of the vessel upon which you will be deployed may have some bearing.

Being alert and as prepared as possible is the key to avoiding injury and major accidents. Much of the information that is presented in this section will be familiar to you and appear common sense, and should have been included in your "Safety at Sea Course". Nevertheless, all of the information bears repeating, no matter how familiar you are with it. Preparation is the most important tool for staying safe.

Vessel Familiarity

As an observer working aboard a vessel, you must become familiar with basic procedures and systems that affect your safety, the safety of others aboard, and the safety of the vessel. Common sense and an awareness of safety issues are important. Preparation and forethought are crucial to safety, since most accidents result from an incorrect response to a dangerous circumstance.

It is each Observer's responsibility to learn as much as possible about basic safety before the vessel leaves the dock. Every vessel is different, and general safety issues should be discussed with the operator of the vessel.

Vessel Tour

A safety orientation should begin with a vessel tour that introduces you to the vessel's safety systems and practices. You should ask the vessel captain or a crewmember to alert you to common safety hazards and show the location and use of all safety equipment. It is your duty to follow the vessel's safety rules at all times. You should know the location and use of:

[38]This draft is based largely on information provided in the North Pacific Fishing Vessel Owner=s Association *Vessel Safety Manual* (John Sabella, editor, 1986, Seattle, Washington, USA, 288 p.) and *Personal Survival at Sea*, produced by the Marine Safety Agency (MSA, Southampton, UK).

- Fire extinguishers
- Water hoses
- First aid kits
- Ring buoys, tethering lines, and strobes
- Personal flotation devices (PFDs)
- Distress rockets/signalling devices
- Life rafts and their deployment
- EPIRB (emergency position-indicating radio beacon)
- Survival suits

Always know where your own personal gear is, especially your survival suit.

Moving Around the Vessel

Take care as you move around the vessel until you get your sea legs. Falling is a constant hazard and a common source of injury. It requires a surprising amount of strength to stand up on a rolling deck. Watch where you walk, be aware of slippery decks, and learn what and where to grab to prevent falls. Use the guardrails.

Always face ladders and stairs in a seaway, and hold on. Don't carry loads on ladders; instead you should always pass or hoist them up. Use proper stairways or gangplanks, and not portable ladders. If a portable ladder must be used, make sure it is lashed securely.

Whenever you are going on deck alone at night or in heavy weather, tell someone else that you are going. Take a flashlight if necessary, and wear a personal flotation device.

Stand clear of all rigging that is under tension and any object that is suspended in the air. Do not stand in the direct line of a wire operated by a winch; always stand to the side. Loaded wires have tremendous force if they suddenly break. Also be sure to stay out of "bights" or loops of line or wire. Finally, wear your hard hat at all times when above deck.

Watertight and Weather-Tight Closures

Each vessel has many watertight and weather-tight closures. These include bulkheads, doors, portholes, windows, and covers over hatches, holds, lazarettes, ventilators, or exhausts. For example, passing through companionways may require going through watertight doors.

All watertight and weather-tight closures should always be closed and secure, even in calm conditions, unless there is a specific reason for one to be open. If you open one, it is your responsibility to ensure it is closed and re-secured. This is very important for the stability of the vessel, in case of an emergency.

Personal Gear

When working aboard a vessel, you need to be prepared for whatever weather conditions the vessel encounters. For your safety, MRAG provides the following protective clothing as part of your kit:

- Waterproof jacket and trousers
- Hard hat
- Survival suit
- Flotation suit

Conditions on board fishing vessels are always wet, and often cold. As long as you can stay dry, you can stay warm. Moisture comes from the outside (spray, rain) and the inside (perspiration), therefore proper clothing is important. Heavy-duty foul weather gear and boots are provided to keep the water out even at the seams. Closures should be worn snug at the wrists and ankles. In addition, it is preferable that the gear be a bright, visible colour and has reflective tape on the shoulders. Being easy to see may be your only chance for survival in a man-overboard situation.

For underneath foul gear, wool and polypropylene (and other new, cold-weather fabrics) are far superior to cotton or other fabrics for keeping you warm and dry. They "wick" moisture away from

your body. Your outfit should consist of layers of wool and polypropylene that you can adjust to the temperature.

A wool hat is essential for staying warm in cold conditions. And socks should also be made of wool or polypropylene. Bring an extra hat because it is easy to lose one.

The steel toe-capped Wellingtons protect your feet from injury, water, and cold, and provide traction on wet surfaces. They should be of a comfortable size, large enough to provide circulation around your feet but not too large that they cause you to trip. However, your boots should be easy to get out of in case you go overboard.

Hard hats are an essential piece of safety equipment, particularly aboard icefish and krill vessels. They should be worn at all times whilst on the trawl deck; and in particularly rough weather should also be worn in the factory area.

Another thing to consider is that if you have long hair, wear it tied up if you are working near winches or other moving machinery.

Your Health

It is important that you take good care of yourself. Fatigue and stress are the enemies of safety. Get as much rest as you can, eat well, and try to stay warm and dry. Fatigue affects your strength, co-ordination, judgement, and makes you more susceptible to accidents. Know your limits, and be extra careful when you are tired or stressed.

Pay special attention to your hands: keep them clean, treat cuts quickly, and use a hand salve or cream. Before going to sea, it is important to have an updated tetanus and diphtheria (Td) shot and to visit your dentist. All injuries should be treated immediately, and reported to the vessel captain. Know where the first aid equipment and instructions are, and learn how to use them.

Emergency Procedures

As an observer, you will not have a duty station and specific responsibilities in the event of a crisis such as man-overboard, personnel injury, fire, grounding, collision, loss of stability (taking on water) or loss of power. However, you should participate in all emergency drills and training, and know where you should go in the event of a true emergency. Take this very seriously; it is your responsibility to become familiar with the vessel's safety plan.

You must remain calm and helpful, follow orders issued, and make every effort to reduce the chance of an injury or accident to yourself, the crew, and the vessel. Responding quickly and correctly can mean the difference between life and death.

Drills

Abandon ship, man-overboard, and fire drills should take place aboard the vessel. Drills are extremely important, and not a joke. Being educated will eliminate confusion and mistakes in the event of a real emergency.

As mentioned previously, as an observer, you will not have a "station bill" during a drill or emergency. However, you should participate in all drills and learn the location of emergency equipment, as described above. Your familiarity with what to do in an emergency may save your life.

Items you should be familiar with include:

- Vessel alarms or emergency signals and what to do when they sound;
- When and how to launch a life raft and the precautions to be taken before, during and after launching;
- How to don an exposure survival suit or personal flotation device, and entry into water;
- Boarding a life raft and righting an overturned life raft;

- Knowledge of all equipment carried in the life raft and how to use it;
- Understanding how to survive in a life raft;
- The use of EPIRB and other signalling devices; and
- The dangers of hypothermia and how to minimise its effects.

Man Overboard (MOB)

If you witness someone falling overboard, sound an alarm, throw the person a line or buoy (preferably with a strobe attached), and keep your eye on the person. It is a good idea to continually point to the person and keep them in your view, to make sure that the officers on watch and others have the person in view as well. It is very easy to quickly lose sight of a person's head, particularly in seas that are rough.

Fire

Know the vessel's fire alarm. Be aware of all potential escape routes from living and working areas, and practice getting out in the dark. In an emergency, seconds may save your life.

If you see a fire, your first duty is to sound an alarm. If you feel you are able, you should try to put out a small fire with portable extinguishers or other means at hand. If a fire is large and below decks, isolate the compartment completely by closing hatches, doors, and vents. Follow all orders of those in charge of handling the fire.

For your own safety, be familiar with the location of the vessel's fire fighting equipment including portable fire extinguishers, water hoses and pumps, axes, breathing equipment, etc.

Abandonment

The order to abandon the vessel is properly given when the vessel is in such distress that the lives of those on board are endangered. It is better to remain onboard until the last possible moment. Everyone will suffer less from exposure, and it is much easier for the rescue services to locate a vessel than a life raft or people in the water.

However, if a fire is out of control or the vessel is sinking, hopefully, you will have been alerted to this possibility in plenty of time to enable preparation and all survival gear to be assembled. It is much better to be prepared and have to re-stow gear if it turns out it is not needed, than to wish it was assembled sooner. Store all personal survival gear so that it is easily accessible in the event of an emergency.

Seven steps to survival

The United States Coast Guard has determined that there are seven steps to survival that should be observed in the following order:

Recognition. As simple as this may seem, the operators of the vessel have to confront the fact that a life-threatening emergency exists. They cannot wait until it is too late to make a distress call and initiate survival procedures.

Inventory. An inventory of all the essential items that will help everyone cope with the emergency has to be made quickly, and all the gear must be assembled.

Shelter. The vessel is the best shelter as long as it remains afloat. A crucial mistake is to leave a boat too soon. If everyone must abandon ship, exposure or survival suits and the life raft become the best means of shelter at sea.

Signals. Survival probably depends on alerting someone who can help. The radio is the best signalling device and radio contact with another vessel or shore station should be established as soon

as it is recognised that an emergency exists. Don't let pride or panic cause delay in making a distress call. When radio contact no longer exists, you must depend on EPIRBS, flares, strobes, flashlights, mirrors, dyes, etc.

Water. Fresh water is needed to stay alive and maintain physical strength to survive the ordeal. Fresh water should be stowed in the survival pack on the raft, but take as much extra water as possible. Begin drinking rationed quantities immediately and never drink salt water, alcohol, or urine. Water is more important than food.

Food. High-energy foods are needed and if there is time, add other foods to the rations in the raft's survival pack.

Play. Survival gear will not keep you alive if you don't have the will to survive. Play can be a joke or a game, anything that keeps your mind focused on life and not death.

Dress for Survival

Once the order to abandon ship is given, put on plenty of warm clothing. Include as many layers as possible, including a wool hat, even if you will be in a survival suit. If you cannot locate your survival suit, put on something waterproof for the outer layer. If you have to enter the water, this will greatly reduce the cold shock effect, which could prove disabling.

Extra clothing will prolong your survival time, and won't weigh you down, as some mistakenly believe. Extra clothing will reduce the effects of the cold and threats such as hypothermia.

Be sure you have flotation. Ensure that you wear a lifejacket before entering the water. Without a lifejacket, even good swimmers will have difficulty staying afloat because of the cold, shock or cramps. A lifejacket will keep you afloat without effort or swimming, no matter how much clothing is worn.

Launching a Life raft

Understand how to launch the raft on the vessel, before an emergency arises. Your assistance may be needed, although crew will likely launch the raft in a real emergency.

The raft or rafts will be stowed atop the wheelhouse or in other easily accessible locations. Each raft should be secured to a cradle with a hydrostatic release unit (HRU, which frees it automatically if the vessel sinks suddenly), and each will have a painter, or static line, from one end that is also secured to the vessel, with a weak link incorporated into the line. The painter, when pulled, auto-inflates the raft. There will be bands around the canister, which do not need to be cut manually before the raft is launched.

If time allows, the raft should be carried to the back deck or other area suitable for launching. Be sure to untie the painter before moving it, so it will not auto-inflate, but re-secure it to the vessel after it has been moved and before launching (otherwise you may lose the raft!).

The raft should be launched from the lee side of the vessel. Make sure the launch area is clear of people or obstructions. After launching, pull the painter until the raft inflates. There may be as much as 100 feet of the painter in the canister, which must be fully withdrawn to inflate. The raft may over-inflate, and the sound of air escaping through a pressure-relief valve may be heard. It does not mean the raft is defective and the sound should cease after a few moments.

Supplies

The raft should contain a considerable amount of supplies and equipment. However, additional supplies should be gathered if time permits. It may be prudent to prepare a "grab bag", which contains essential survival supplies. Important items to make sure are in the raft include:

- EPIRB
- Flares, strobes, other signalling devices
- Foul weather gear, plastic sheets or tarpaulins
- High-energy food, vitamin supplements

- Sea anchor or drogue
- Extra watertight containers that are full; these will float, and can be towed from the raft
- Blankets, extra clothing
- First aid kit
- Charts marked with estimated location paper and pencil to keep a log
- Light rope or line for towing purposes
- Light buckets or bailers

Personal Survival Kit

You can boost your chances of survival by creating a personal survival kit in a small, watertight bag or "grab bag", which you should keep stowed with your survival suit. Attach a lanyard, so you can tie it off or hold onto it, once you are in the water. Suggested contents are:

- Wool cap, reflective space blanket;
- Personal EPIRB, flares, strobe light, mirror;
- Flashlight and batteries;
- Water; and
- Candy bars or other high-energy food.

Boarding a Life raft

If possible, board the raft from the side of the vessel without entering the water. You may be able to lower yourself with a ladder or line, or jump into the canopy opening from the rail. Think before you jump! You do not want to injure yourself. Do not jump on the canopy; it can cause personal injuries or may damage the canopy.

If you must enter the water, enter near the painter. You want to keep contact with it once in the water to use it as a guide, so you do not get swept beyond the raft. Do not jump in the water unless it is unavoidable. Use over-side ladders, or if necessary, rope or a hose.

If you must jump, check the area below first. Beware of the drift of the vessel and other hazards. If you are wearing a survival suit, make sure it is fully zippered and secured. Leave the external flotation bladder deflated until you are in the water. Protect your head with one arm, and jump feet first, with feet together.

If you have a personal flotation device on, securely fasten it, cross an arm over your chest, block your nose and mouth with one hand, and be careful of your head.

Avoid staying in the water any longer than needed. Body heat will be lost to surrounding water faster than it can be generated. You must to avoid overexposure, which will lead to hypothermia.

Boarding the life raft without help will be difficult. Pull yourself in head first using the boarding ladder, lifelines, or any available foothold at the entrance to the raft (do not use the canopy which can get torn). It may help to bob down, and use the buoyancy of your lifejacket to help you out of the water. Once everyone is inside, close the entrance to keep the cold and wet out and warmth in (but post a lookout).

If you cannot get into the raft, do not swim aimlessly. It will increase heat loss. Remain as still as possible using flotation to keep you high in the water. If you are near floating debris, use it to keep yourself out of the water. Heat loss is slower in the air than in the water. If possible, form a group with the other survivors in the water.

Survival in the Life raft

Stay near the vessel

Whether in the life raft or in the water, try to stay near the vessel. It may not sink, and you may be able to re-board. If it stays afloat, it will be easier for searchers to spot than you or the raft. It also

keeps you closest to the position reported in the distress call. Keep the raft tied to the vessel unless fire or some other danger means you must cut the painter.

If there is more than one raft in the water, tie them together with a doubled rescue line. There is safety in numbers, you will have more survival gear between the two, and it is easier to spot. If there are heavy seas, leave adequate slack between the rafts. If the line is too short in big seas, it may cause one to capsize.

If you are not tied to the vessel, use the sea anchor or drogue that should be part of the equipment in the life raft. It will reduce the rate of drift away from the distress position, thus increasing the chance to be spotted. The drogue should be attached in such a way that it is released automatically when the raft is launched. It should be used continuously, and its line should be inspected frequently. The line attachment may be able to be moved around the edge of the raft as needed to provide better shelter (from rain or wind), or better ventilation if needed. It will also stabilise the vessel in rough seas.

Use of Distress Signals

If you have an EPIRB, turn it on as soon as possible, and leave it on. Rig the radar reflector if available, as well. The lanyard attached to the EPIRB should be securely fastened to the raft (or to an individual in the water). Most operate best when floating with the antenna vertical. In rough whether, the EPIRB should be operated inside the raft, even though this may reduce its range of signal. It should be held upright, without touching the antenna. Caution: EPIRBs with water-activated switches must be kept in the water.

Visual distress signals should be included in a properly packed life raft. They include pyrotechnics (flares, buoyant orange smoke signal), flashlights and strobe lights, and non-mechanical devices such as distress flags and mirrors. Each has advantages and disadvantages, and is only valuable if used effectively.

Do not waste distress signals. Use only when there is a reasonable chance that they will be seen.

Always read and follow the instructions carefully. Fares and smoke signals can expel particles that will cause painful burns or damage a raft, and can obviously get very hot. Hold flares over the side and away from the raft. Caution must also be used with pistol-launched flares, as with any firearm. Never fire a device straight up, at masts or rigging (if on a boat), or directly at a rescue vessel or plane.

At night, distress signals can only been seen for a few miles in good visibility. Therefore it is wasteful to use them when conditions are poor. Use hand flares only when the lights of a ship, plane, or on a shore are visible. Red flares are most effective at night or in restricted visibility (haze or fog). Parachute signals should only be used if there is good reason to believe a rescue ship or plane or inhabited shore is within the estimated visibility range.

During the day, the official signal is the Buoyant Orange Smoke Signal, however it will not work well if the winds are high. Tests have shown that hand flares or a rocket parachute signal can be seen further than orange smoke. Therefore, it is better to use a flare with the official smoke signal.

When using any pyrotechnic device, be cautious of the wind. Always keep the wind at your back, and arm raised about 60 degrees above the horizon.

Initial Situation in a life raft

Survivors are likely to be cold, wet, exhausted, and suffering from varying degrees of shock. To survive, each person must maintain self-control and a will to live. Mental and / or physical breakdown is likely at this stage.

There will be multiple problems and one must decide in what order to deal with them. You should prioritise the most immediate threats to your life, and deal with them one at a time. Using this approach is extremely important. After taking inventory, shelter and protection from the dangers of

the environment, such as insulating against the cold, should be the first priority. Indicating location will likely be the next priority, since it is possible to survive without food and water for several days or weeks. Other priorities include treating injuries, preventing seasickness, and establishing leadership and morale.

Lash down all gear so that in case the raft capsizes or is swamped, nothing is lost. Rafts are made so that you have the choice of pumping up the floor with air or not. In cold latitudes it is important to pump it up to increase the insulation against the cold. In warm latitudes, the water under the raft will help cool the inside, therefore its best to leave the floor deflated.

Treat all injuries as best as possible, and prevent seasickness. Take seasickness tablets as soon as possible, because even experienced sailors are likely to get sick on a raft. Seasickness results in loss of precious body fluids and incapacitation. Ventilate the raft by leaving a small opening in the entrance.

Ration water use. Water is a higher priority than food, and you should not eat if you do not have any water. Digestion of food drains needed water from your body. Water should be conserved, but it is also needed to maintain enough physical strength to cope with the ordeal. It is suggested that you drink one-half of your daily ration at a time, rather than sipping very small quantities.

Preserve body heat. Every attempt should be made to pump or bail the life raft, and to dry out the interior. Sponges are usually provided in the survival pack. If clothing is wet, remove it to wring out at much as possible and put it back on. Huddling together with the other people in the life raft will also conserve body heat.

Maintain Morale

Establishing a routine will help ensure vital tasks get done, and will help to focus attention on the positive work of survival. Keeping everyone's mind occupied during waking hours is important, but don't overdo it. Avoid unnecessary work. Establish hourly watches in pairs, with one person on duty outside and one inside.

Outside:

- Look for ships, survivors, and useful wreckage;
- Flash the signalling mirror all around the horizon when there is sunshine; and
- Look for land, and at night, listen for surf.

Inside:

- Maintain the dryness in the life raft through bailing, drying and ventilation;
- Attend to injured victims;
- Maintain equipment;
- Inspect the raft for damage and repair leaks (repair clamps should be part of the equipment aboard); and
- Keep rations.

Also, to maintain morale, remember that the seventh step to survival is play.

Medical Emergencies

First Aid is temporary care given to sick or injured persons. It does not replace professional medical treatment, but can mean the difference between temporary disability and permanent injury, quick recovery or a long one, and sometimes life and death. It is important to react positively and effectively in an emergency, but it is also important to be realistic, understand the limitations of being on a boat.

The captain and / or some of the crew should have basic first aid training, however, it is advisable that you have training in CPR and basic first aid, and that you stay up to date with the training. Your assistance may be necessary in the event of a serious medical emergency. Learn the location of the first aid kit or other medical supplies aboard ship. You may even wish to bring your own small first aid kit. Some basic first aid treatments to know include:

Hypothermia. This occurs when a person has been in cold water or air long enough for the body temperature to be lowered dangerously. Wetness and wind-chill compound the problem. The victim's body temperature will continue to drop even when he/she is no longer exposed to the cold. Call for assistance by radio, and prepare for possible evacuation. While waiting:

- Check that breathing is regular, and administer CPR if necessary;
- Treat victim gently as jostling may cause an irregular heartbeat or worsen the condition;
- DO NOT massage or manipulate the victim's extremities;
- Remove or cut away wet clothes and keep victim as dry as possible;
- Stop further heat loss. For example, put victim in a garbage bag with a hole for his/her head. It provides excellent protection from the wind;
- Find a heat source or heat donor. Placing the victim stripped in a sleeping bag or under blankets with another person is a gentle technique, which warms the victim gradually. Re-warming must be slow to avoid shock to the victim's system;
- Gently and gradually apply warmed objects wrapped in towels (hot water bottles, heat packs) to the groin, chest, neck and head; and
- DO NOT give coffee or alcohol. Unconscious or semi-conscious victims should not be given any food or drink; conscious victims may be given warm fluids.

Immersion foot. This occurs when feet are exposed to near freezing wet conditions for hours or days. Symptoms include swelling of the feet and lower legs, numbness, tingling, itching, pain, cramps, and a white, wrinkled appearance. After feet are warmed, they become swollen, red, and hot, and blisters frequently occur. To treat:

- Dry foot completely, but do not rub or massage, and take care not to break blisters;
- Gradually re-warm using blankets, clothing, hot water bottle or body heat from another person; and
- Give victim plenty of hot liquids during re-warming phase, as well as vitamins and high-calorie food.

Injuries from fish fins. Injuries from spines or fins of fish can become easily infected, and from certain fish they can be dangerous. Soak the injury in a bucket of hot water with *Clorox*, *Purex*, or any good disinfectant added. The quicker the treatment the better, in water as hot as you can stand it. Rinse with *providone-iodine* or *alcohol*, and apply a protective coating with an anti-bacterial ointment. Apply a dry, sterile dressing and change it often if it becomes soiled or wet.

Bleeding. Control of gross bleeding is an urgent matter. Use the palm of your hand to apply direct pressure to a wound and use a thick pad of cloth or gauze as a dressing. Raise injured arms or legs to a level higher than the heart. Use pressure points in combination with direct pressure and elevation. A pressure bandage can replace direct hand pressure on most body parts. Wrap the ends of the bandage around the body part, and tie the knot directly over the dressing. But be sure it is not too tight; check for swelling, numbness, discoloration or the sensation of pins and needles.

Shock. Shock is a serious condition caused by reduced blood supply to body parts and tissues that may lead to death. The victim of any serious injury should be checked for shock symptoms which include: rapid and weak pulse; low blood pressure; rapid, shallow breathing; glassy eyes or dilated

pupils; skin and lips pale and bluish-grey; clammy sweat; nausea or vomiting; victim being anxious or restless, confused, and finally unresponsive.

It is easier to prevent shock than treat it: As part of the treatment of a patient keep the victim lying down with feet raised to maximise circulation to the heart and brain. It is vital to check the breathing and clear any obstructions from the airway. Overall keep victim warm, but not hot and importantly reassure the victim - restoring confidence is essential. Seek medical advice by radio as soon as possible. In general, do not give anything by mouth until you get a doctor's approval. However if you must treat the victim for a long time without any professional advice, you may give water to a conscious victim.

Appendix 6

Draft Guidelines for the Rights, Duties and Responsibilities for Observers, Captains and Crew

(As prepared by the Chairman of Working Group III)

All observers, captains, and crew must understand and accept their rights, duties, and responsibilities when an observer is on the vessel. Accordingly, WG III requested that the Chairman prepare a discussion document on the proposed guidelines for the rights, duties, and responsibilities of observers, captains, and crew. Proposed guidelines (below) were developed after a thorough review of material provided by participating governments and the FFA Secretariat as well as similar guidelines adopted by the CCAMLR, the Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea, and the Agreement on the International Dolphin Conservation Programme (AIDCP)

Section A: Rights, Duties, and Responsibilities of On Board Observers

1. The rights of observers shall include:

(a) Access to all areas and facilities of the vessel necessary to conduct observer duties, including the bridge, pilothouse, deck, areas used to process, weigh, and store fish, gear, equipment, fish catch, and crew, as agreed by the Commission.

(b) Access to the vessel's records including its logs and documentation for the purpose of records inspection and copying, access to navigational equipment, charts and radios, and reasonable access to other information relating to fishing.

(c) Access to and use of communications equipment and personnel, upon request, for entry, transmission, and receipt of work related data or information.

(d) Access to additional equipment, if present, to facilitate the work of the observer while on board the vessel, such as high powered binoculars, electronic means of communication, etc.

(e) Access to the working deck during net or line retrieval and to specimens (alive or dead) in order to collect samples.

(f) Notice of at least fifteen (15) minutes before fish are brought on board, unless the observer specifically requests not to be notified.

(g) Access to food, accommodations, medical facilities, and sanitary facilities of a reasonable standard equivalent to those normally available to an officer on board the vessel.

(h) The provision of adequate space on the bridge or pilot house for clerical work and adequate space on the deck for observer duties.

(i) Freedom to carry out their duties without interference, intimidation, or obstruction.

2. The duties of observers shall include:

(a) Gathering pertinent information on the fishing operations of the vessel as needed to implement the Convention and as agreed by the Commission.

(b) Making available to the vessel captain all measures adopted by the Commission.

(c) Making available to the vessel captain records of specific activities monitored by the Commission, if applicable.

(d) Preparing reports and providing the vessel captain with an opportunity to include any information or statements deemed relevant.

(e) Providing reports to the Commission or national programme in accordance with procedures adopted by the Commission.

(f) Performing other functions as agreed by the Commission.

3. The responsibilities of observers shall include:

(a) Acceptance and compliance with agreed confidentiality rules and procedures[39] with respect to the fishing operations of the vessels and of the vessel owners.

(b) Maintenance of independence and impartiality at all times while on board the fishing vessel.

(c) Compliance with the laws and regulations of the CCM that exercises jurisdiction over the vessel.[40]

(d) Respecting the hierarchy and general rules of behaviour that apply to all vessel personnel.[41]

(e) Performance of duties in a manner that minimizes interference with fishing operations.

(f) Familiarity with the emergency procedures aboard the vessel, including the locations of life rafts, fire extinguishers, and first aid kits.

(g) Communicating regularly with the vessel captain.

Section B: Rights, Duties, and Responsibilities of Vessel Captains

1. The rights of vessel captains shall include:

(a) Expectation that a reasonable period of prior notice of the placement of an observer shall be given.

(b) Opportunity to review and comment on the observer's report, including the right to include additional information deemed relevant or a personal statement.

(c) Compliance by the observer with the general rules of behaviour, hierarchy, and laws and regulations of the CCM that exercises jurisdiction over the vessel.

(d) Timely receipt from the observer of the relevant and current measures adopted by the Commission.

(e) Ability to conduct lawful fishing operations with minimum interference due to the observer's presence and performance of necessary duties.

(f) Ability to assign, at his or her discretion, a vessel crew member to accompany the observer when the observer is carrying out duties in hazardous areas.

2. The duties of vessel captains shall include:

(a) Accepting an approved observer that is part of the Commission's observer programme, if required by the Commission.

(b) Assisting the observer to safely embark and disembark the vessel at an agreed place and time.

(c) Assisting the observer to carry out all duties safely.

(d) Providing the observer with food, accommodations, medical facilities, and sanitary facilities of a reasonable standard equivalent to those normally available to an officer on board the vessel.

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[39] Procedures and guidelines relating to security and confidentiality of data and other information, as called for in Article 28, remain to be developed.

[40] As long as these requirements are not incompatible with the provisions of the Convention or measures adopted pursuant to the Convention.

[41] Provided that they do not interfere with the duties of the observer or the responsibilities of the captain and crew.

(e) Facilitating access by the observer to all areas and facilities of the vessel necessary to conduct observer duties, including the bridge, communications equipment and personnel, pilothouse, deck, and areas used to process, weigh, and store fish, gear, and equipment.

(f) Permitting the observer to remove samples from the catch and providing appropriate storage space for specimens collected and retained by the observer.

3. The responsibilities of vessel captains shall include:

(a) Ensuring actions are consistent with regulations and procedures established under the Convention.

(b) Complying with other guidelines, regulations, or conditions established by the CCM that exercises jurisdiction over the vessel.

(c) Ensuring that captain or crew does not obstruct, intimidate, influence, or interfere with the observer or impede or delay observer duties.

Section C: Rights, Duties, and Responsibilities of Vessel Crew

1. The rights of vessel crew shall include:

(a) Expectation that the observer will comply with the general rules of behaviour, hierarchy, and laws and regulations of the CCM that exercises jurisdiction over the vessel.

(b) Expectation that a reasonable period of prior notice of the placement of an observer shall be given.

(c) Reasonable expectation of privacy in crew personal areas.

(d) Ability to carry out duties associated with normal fishing operations with minimal interference by the observer in performance of their duties.

2. The duties of the vessel crew shall include:

(a) Accepting an approved observer that is part of the Commission's observer programme, if required by the Commission.

(b) Assisting the observer to embark and disembark the vessel at an agreed place and time.

(c) Allowing access by the observer to all areas and facilities of the vessel necessary to conduct observer duties, including the bridge, pilothouse, deck, and areas used to process, weigh, and store fish, gear, and equipment.

(d) Assisting the observer to carry out all duties safely

(e) Permitting the observer to remove samples from the catch.

3. The responsibilities of the vessel crew shall include:

(a) Not obstructing, intimidating, influencing, or interfering with the observer or impeding or delaying observer duties.

(b) Compliance with regulations and procedures established under the Convention and other guidelines, regulations, or conditions established by the CCM that exercises jurisdiction over the vessel.

(c) Compliance with directions given by the vessel captain with respect to the observer or performance of observer duties.

Additional detail of MCS-related observer actions and responsibilities (Source: United Nations Food and Agriculture Organization (FAO) Fisheries Technical Paper 414: Guidelines for developing an at-sea fishery observer programme.)

a. Logbook validation

Logbook reporting is the most common way for fisheries management authorities to gather geo-referenced information on catch and effort, and other parameters. The propensity to under-report target species and by-catch will vary depending on the type of 'use right' being exercised (including in relation to quotas, fishing areas, etc.), and the associated fees (quota fees, bycatch levies, etc.) that may constitute a serious violation.

b. High-grading and discarding

- High-grading is the disposal of undersized or damaged target fish to increase the value of the processed catch, i.e. low-grade fish are discarded.
- Discards usually take place to avoid paying by-catch levies or because a species (or their size) is not commercially viable.

Some discarding or high-grading may be unavoidable and, indeed, it may be acceptable by the fisheries authority at a particular rate (say, 10% of the catch) but it usually consists of non-commercial species and damaged fish.

Observers must be given clear explanations of the definitions of high grading and discarding in relation to agreed upon regulations and resolutions, as these definitions and the particular rules that apply can vary greatly between fisheries.

This is also a major part of logbook validation but it deserves to be mentioned separately as in some cases, when no logbook system is in place, there is regulation on high grading or discarding.

c. Monitoring of prohibited species, protected species, species of interest or incidental catch

Clear and specific guidelines must be given to observers on this issue. For example, retention of small amounts of incidental catch for the galley may not be considered a serious offence, whereas the deliberate killing of protected species of sea birds or marine mammals typically would. Observers will also require good guides for correctly identifying species.

d. Undersized and spawning species

Regulations often specify the minimum size of fish that can be landed. Or there may be regulations on the spawning state of fish, such as not allowing egg bearing females to be retained. These regulations can be quite complicated to interpret as catching and retaining are different things, but returning dead juvenile fish to the sea is not very sensible. Observers must fully understand and be prepared to document aspects related to regulations dealing with size, spawning state and or sexual condition.

Vessel operators may be expected to move fishing area if they are catching over a certain percentage of undersize fish. In other cases where there are regulations prohibiting discards and high-grading, the vessel may be obliged to land the total catch. Observers are in the ideal position to monitor controls such as these, but clear instructions must be given on what action to take.

e. Fishing area and season restrictions

In order to detect possible area violations observers typically require basic navigation skills. Observers must be trained in basic navigation skills, including the interpretation of charts and the use of satellite positioning equipment. If the observer suspects a violation of an area restriction s/he should first double-check the vessel's position before documenting the alleged infraction. The observer may choose to inform the vessel operator. If the vessel operator takes no action then this may be considered a serious violation that requires immediate reporting. Observers, of course, must be aware of the difference between steaming through an area and actually fishing. The Commission's vessel monitoring system (VMS) will also play a major role in spatial management.

f. Fishing gear documentation

Monitoring the structure, materials, set up and use of fishing gear is an important task not only for the purposes of compliance with any applicable fishing gear regulations but also in relation to the determination of fishing effort. For example, the number of hooks between floats or the dimensions of a purse seine, may be critical information for stock assessment purposes as well as ensuring compliance with setting regulations related to bycatch species.

It takes a high level of experience to really understand the gear set up of many fishing activities, but the observer is responsible for determining whether the gear or any modifications or attachments are unauthorized. If regulations exist on attachments or mesh and hook size, the observer must observe gear setting and hauling for further information or to detect a violation. If a vessel changes the gear after leaving port, before returning to port or when a patrol vessel is in the vicinity, observers document these actions. Another indication that the wrong gear or wrong set up is being used may be through the size distribution of the species being caught.

g. Validation of processed fish

When fish are processed and packaged on board the observer may be tasked with ensuring that packages are marked correctly. This is important when different languages are being used, and if there are different levies for different species. The marking of a high levy species as a lower levy species, or to avoid quotas, are common violations.

h. Documentation checks

Observers should make routine checks of the vessel's papers and documents (such as licenses and authorizations) to ensure that these are carried onboard and in order. Complications may occur in relation to the language of documents but generally infringements relating to documents are not a serious violation and can be reported once on shore. The observer should document any alleged shortcomings or violations and care must be taken if the vessel operator is approached regarding these issues.

i. Sightings of other vessels

Observers should be provided a list of licensed vessels as they may be able to detect unlicensed vessels fishing in an area. Any observations of this type should be reported immediately.

j. Transhipment at sea

If there are regulations prohibiting at-sea transhipment observers may be best positioned to monitor this both for their vessel and other vessels in the vicinity. Where possible, records should be kept of vessel details and the transhipped species and quantities.

k. Recording and reporting violations

From the above brief description of the possible activities that observers can undertake in support of compliance control it is evident that observer programmes must carefully design both the background material in support of observations (i.e. the basis on which violations might be discerned) and the methods of recording and reporting of violations. Serious and less serious offences should be

classified and observers must be aware of how to respond to violations in these two categories. Serious offences should be directly transmitted via radio, telex, fax, or VMS to the observer programme, and in a coded format whenever possible. If the offence is less serious the report should be brought ashore for later follow-up.