



**SCIENTIFIC COMMITTEE
TENTH REGULAR SESSION**

Majuro, Republic of the Marshall Islands
6-14 August 2014

E-Monitoring and E-Reporting Workshop Report

WCPFC-SC10-2014/ GN-IP-03



E-MONITORING AND E-REPORTING WORKSHOP
Monday 31 March - Tuesday 1 April 2014
Pacific Islands Forum Fisheries Agency Headquarters
Honiara, Solomon Islands

CHAIR'S REPORT

1. The E-monitoring and E-reporting¹ Workshop took place 31 March – 1 April, at Honiara, Solomon Islands.
2. The following Members and Participating Territories attended the E-monitoring and E-reporting Workshop (EmandErW): American Samoa, Australia, Cook Islands, Federated States of Micronesia, Fiji, Japan, Kiribati, Republic of Korea, Republic of Marshall Islands, New Zealand, Palau, Papua New Guinea, Samoa, Tokelau, Tonga, Tuvalu, United States of America, and Vanuatu².
3. Observers from the following intergovernmental organisations attended EmandErW: Agreement on the Conservation of Albatrosses and Petrels (ACAP), Pacific Islands Forum Fisheries Agency (FFA) and Secretariat of the Pacific Community (SPC). Observers from the following non-governmental organizations attended EmandErW: World Wild Fund for Nature (WWF).
4. Secretariat staff participants were Compliance Manager Dr Lara Manarangi-Trott, Consultant Ms Kerry Smith, Assistant Compliance Manager Ms Ana Taholo and VMS Manager Mr Albert Carlot. Mr Steve Dunn and Dr Ian Knuckey presented their consultants' report and acted as workshop facilitators.
5. A list of participants is attached as **Attachment A**.
6. The workshop Chair, Mr Ray Clarke, called the meeting to order, and emphasized that the workshop is an informal meeting of stakeholders with an interest in potential application of E-technologies in WCPO HMS fisheries. Participants were welcomed to the EmandErW. In the Chair's introductory remarks he noted that:
 - This workshop was being held because the WCPFC10 agreed that further discussions on E-reporting and E-monitoring should be held in early 2014;

¹ For a precise definition of "E-monitoring" and "E-reporting" see WCPFC10-2013-16_rev1.

² The European Union was unable to attend the meeting but provided a paper, a summary of which was presented during the E-reporting presentations and panel.

- The broad range of participants, including MCS practitioners, fisheries managers and administrators, industry representatives, E-technology providers, regional agencies and NGOs were expected to engage in valuable discussion and exchanges of experiences about implementation and development of E-reporting and E-monitoring;
- Two key reference documents were provided for the workshop: “Potential for E-reporting and E-monitoring in the Western and Central Pacific Tuna Fisheries” (WCPFC10-2013-16_rev1), and “Implementation of Electronic Monitoring and Reporting in the WCPFC – Assessing Possible Impacts on Employment in Small Island Developing States” (WCPFC-EmandErW-2014-05);
- The workshop programme was designed so that the recommendations from the consultants’ report (WCPFC10-2013-16_rev1) could be discussed; and
- The expected outcome from the workshop would be a Chair’s report to the Technical and Compliance Committee (TCC) that will provide advice on next steps for E-reporting and E-monitoring in the WCPO.

7. The workshop had four main elements:

- A series of three plenary workshop presentations: E-technologies in the WCPO, E-reporting in the WCPO and E-monitoring in the WCPO;
- Two break-out sessions, involving five groups, each of which discussed: steps to progress implementation, other issues or recommendations to be taken to the TCC, and challenges to implementation of E-reporting and E-monitoring in the WCPFC;
- Individual participant surveys on E-reporting and E-monitoring priorities and challenges; and
- A plenary discussion of the outcomes of the break-out group discussions.

The workshop programme, which was amended taking into account the comments of participants, is included in **Attachment B**. A list of presenters and their presentations is provided in **Attachment C**.

8. Copies of presentations of the outcomes of the break-out sessions are in **Attachment D** and the summary results of the individual participant surveys are in **Attachment E**. Copies of the workshop plenary presentations and additional information shared by participants on their national systems and E-standards (EU (delegation paper) and Western Pacific Fisheries Management Council (information paper)) can be accessed from the workshop web page: <http://www.wcpfc.int/meetings/e-monitoring-and-e-reporting-workshop>

9. A statement by the Te Vaka Moana participants providing their views on E-reporting and E-monitoring is included at **Attachment F**.

Workshop summary outcome

10. The key outcome of the E-Monitoring and E-reporting Workshop was that a combined E-R and E-M Working Group (EWG) be established, with a priority task of developing draft standards, specifications, and procedures for the use of E-monitoring and E-reporting technologies in Commission-managed fisheries. This process will not dictate the technologies to be used, but would facilitate their efficient and cost-effective use where and when they are adopted. Further, it was suggested that the Secretariat should facilitate the development of these standards, specifications and procedures.

Next steps for E-reporting in the WCPFC

11. Following is a summary of the key outcomes of E-reporting deliberations at the workshop:

Several presentations demonstrated that E-reporting is now operational both globally and within WCPO tuna fisheries and being supported and enhanced by technology developments. A key risk for the Commission is that the lack of documented policies and standards for E-reporting will result in the Commission falling behind members' implementation of E-reporting, potentially resulting in poor data coordination, increased data storage and transmission complexities, higher data security risks, and increased long-term costs.

12. Timely development of policies, standards and specifications for electronic data collection, storage, transmission, access and security was identified by workshop participants as the highest priority work that needs to be addressed. E-reporting standards and specifications are of a highly technical nature. Development of terms of reference and establishment of an EWG is feasible and ranked as the highest priority activity. It was recognized that there is a need for broad consultation involving members, industry and other stakeholders. The WCPFC needs to agree on a process to move this forward.

13. The workshop participants acknowledged that activities need to be undertaken at the Commission, subregional and national levels. In addition to the need for timely and enhanced data management, key drivers for the implementation of E-reporting by some members are the need to support both market-based strategies (e.g. catch documentation schemes and Marine Stewardship Council reporting) and regulatory implementation (e.g. longline bigeye tuna limit monitoring). There was general agreement that at the Commission level, work needs to be done to accommodate progress made by some CCMs.

14. Workshop discussions identified a number of challenges to the implementation of E-reporting. Prominent among them were equipment and administration costs, and data confidentiality, access, use and protection (see **Attachment E**). Further work needs to be done to clarify the potential implementation and recurrent costs at the WCPFC, sub-regional and national levels. Many SIDSs will need both short- and long-term financial support and technical training for the implementation and operation of E-reporting. Capacity building for industry should also be considered. The issues of data confidentiality, access, use and protection are considerable challenges and current arrangements may need to be reviewed. Participants discussed the need for CCMs and industry to better understand how data confidentiality is maintained and data flow is controlled. Education and communication will be an important aspect of ensuring data security.

15. Other obstacles and challenges identified by participants included but were not limited to:

- the pace of change may outpace the frequency of Commission meetings;
- satisfying legal requirements;
- achieving effective cooperation and coordination of efforts in different countries;
- paper and electronic systems running in parallel will be cost-inefficient;
- implementation of real-time E-reporting versus end-of-trip E-reporting;
- the results of ongoing trials will not be available for some time; and
- overcoming a lack of communications capacity.

16. A possible phased approach for the implementation of E-reporting technologies in the WCPFC is shown in Figure 1.

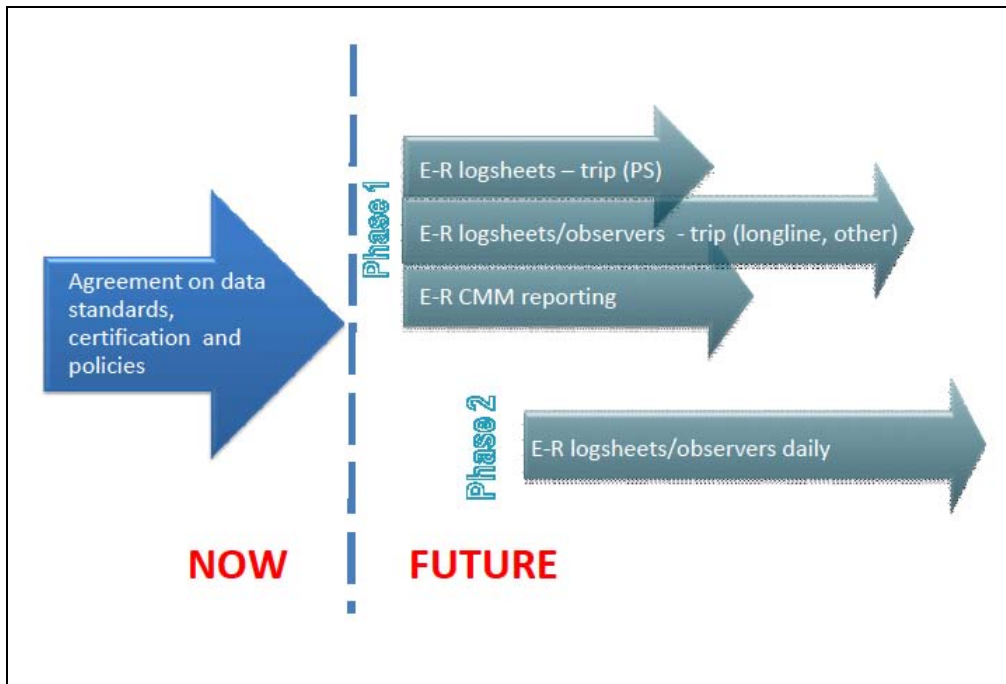


Figure 1: Potential timeline for ER implementation

Next steps for E-monitoring in the WCPFC

17. The following is a summary of the key outcomes of the E-monitoring deliberations at the workshop:

18. E-monitoring systems are in the early stages of development in tuna fisheries in the WCPO. One tuna longline fishery (in Australia) is moving to implementation; a number of trials, focussed on longline fisheries, have been completed or are underway³.

19. During the workshop, participants identified a range of obstacles and challenges to implementation of E-monitoring, including:

- costs (hardware, equipment and administration);
- installation and maintenance logistics;
- logistics of data storage, hard drive exchange, maintenance, capacity building and training;
- data transmission at near-real time versus end-of-trip considerations;
- costs of analysis of video data needs to be fully understood, and needs to be affordable;
- improved understanding of E-monitoring potential and limitations are needed (i.e. what it can and cannot do);
- need for technical training for industry to support implementation;
- need for short- and long-term technical training and capacity building for SIDSs;
- review of national legal frameworks, including use of videos as evidence in MCS cases; and
- database management for transmission and storage of video data.

³ There have been some trials in the WCPO as well as E-monitoring activities in other ocean basins.

20. Participants identified that some of the next steps for E-monitoring in the WCPFC could include:
- standards, specifications and procedures development by EWG;
 - Members continuing to undertake national trials, and report outcomes and share experiences with other members, including to the Scientific Committee (SC) and TCC’
 - further definition of the possible objectives for application of E-monitoring technologies in the WCPFC;
 - further analysis of costs and benefits and potential socio-economic impacts, particularly for SIDSs;
 - reviewing/establishing rules for protection of, access to, and use of E-monitoring data should be an important part of standards, specifications and procedures;
 - ensure special attention to the role of SIDSs and their needs and capacity; and
 - possible focus on fisheries that are not meeting the WCPFC’s observer requirements, or where it has been recognised that placement of observers is challenging.

21. A possible timeline for the implementation of E-monitoring technologies in the WCPFC is shown in Figure 2.

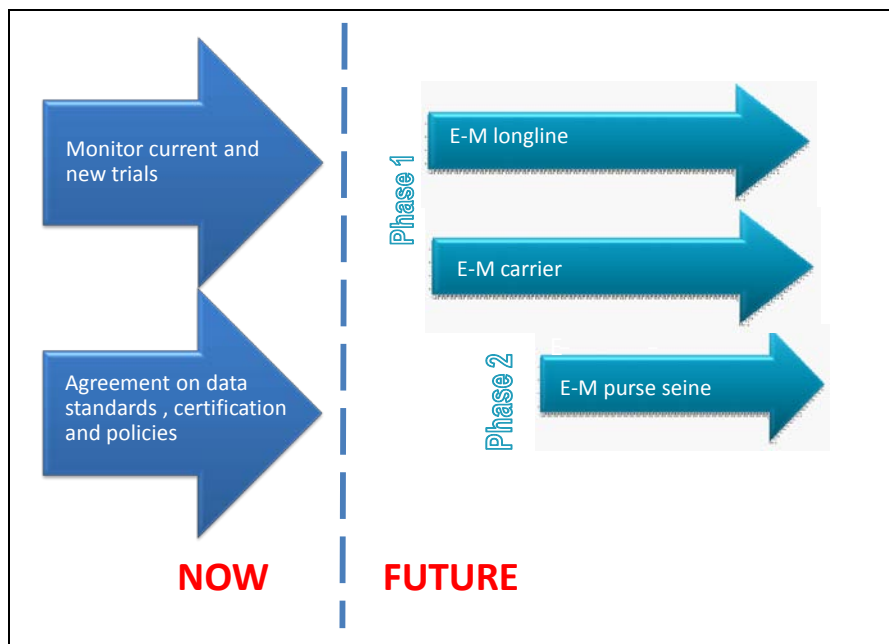


Figure 2: Potential timeline for EM implementation

Potential process for moving forward

22. Workshop participants continually acknowledged that there was a need for a working group to progress the development of standards, specifications and procedures (SSPs) for E-reporting and E-monitoring. SSPs are of a highly technical nature, but at the same time workshop participants recognized that there is a need for broad consultation involving members, industry and other stakeholders. The workshop identified the establishment by the TCC of a combined E-M and E-R Working Group as being feasible, and ranked its establishment as a high priority task. The workshop identified the highest priority

task for E-reporting to be **developing draft E-reporting SSPs**, and discussed how that might be progressed. The workshop offered the following two options to the TCC:

- **Option 1:** task a group of individuals to meet, possibly facilitated by the Secretariat or led by a member, to develop a draft set of E-reporting SSPs that can then be reviewed by the [combined E-M and E-R] Working Group
- **Option 2:** task a member-led electronic working group to discuss

23. If the TCC agrees with recommending the establishment of a combined E-M and E-R Working Group, the workshop has provided a list of tasks and issues that might be relevant for the working group:

- timeframe (short)
- identifying the application of E-reporting and E-monitoring in particular fisheries
- move from specifying data forms to data formats
- consider input from FFA/SPC Data Collection Forms Committee (DCC) and Members
- review/establish data fields and formats and transition from specifying data forms to data formats
- propose “end of trip” and/or “real-time” data transmission formats and protocols
- deal with data confidentiality (coding and encryption)
- review/establish data access, protection, use and dissemination rules and procedures
- linkages to catch documentation schemes
- validation of data

24. Suggestions were also made by the workshop participants about the possible membership of the working group, which might include:

- end users, including those in the realms of science, compliance, industry, policy, and environment
- IT capacity
- IT experts from national agencies and institutions
- consultant IT expert
- data collection experts

25. The workshop participants agreed that the working group would require use of electronic meetings as well as face-to-face meetings.

Workshop closing

267. The workshop Chair noted that over the course of the previous two days there was a high level of positive engagement by participants. He noted the high level of expertise of the presenters, panelists and participants and he observed that there was considerable information shared and collective learning. It was hoped that this continue in the future given the importance of these issues.

Epilogue

27. An additional thought on the workshop outcome came to the Chair upon drafting his report of the meeting. That was that it might be worthwhile providing the report to the Scientific Committee, which is scheduled to meet in Majuro, Marshall Islands, for its review and comment.

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LIST OF ATTACHMENTS

Attachment A: List of Workshop Participants

Attachment B: Workshop Programme

Attachment C: List of presentations and presenters

Attachment D: Presentation of workshop breakout sessions summaries

Attachment E: Summary results of individual workshop participant surveys on the challenges and priorities for ER and EM

Attachment F: Statement by the Te Vaka Moana participants

Attachment A – List of Workshop Participants



E-MONITORING AND E-REPORTING WORKSHOP
Pacific Islands Forum Fisheries Agency Headquarters, 31 March – 1 April 2014
Honiara, SOLOMON ISLANDS

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E-MONITORING AND E-REPORTING WORKSHOP
Pacific Islands Forum Fisheries Agency Headquarters, 31 March – 1 April 2014
Honiara, SOLOMON ISLANDS

WORKSHOP PROGRAMME

WCPFC-EmandErW- 2014-01_rev1

Monday 31 March 2014 – DAY 1

	AGENDA ITEM 1. WELCOME AND OPENING
9.00-9.30	1.1 Welcoming address
	1.2 Adoption of agenda
	1.3 Meeting arrangements
	AGENDA ITEM 2. E-TECHNOLOGIES IN THE WCPO
9.30-10.30	2.1 Introduction and presentation - Potential for E-Reporting and E-Monitoring in the Western and Central Pacific Tuna Fisheries - Steve Dunn and Ian Knuckey
10.30 – 11.00	Morning tea
11-12.30pm	2.2 Presentation – Assessment of the potential impacts on Pacific Island Countries and Territories (PICTs) of electronic monitoring and reporting for fishing vessels – Kerry Smith
	2.3 Panel discussion
12.30 -1.30pm	Lunch
	AGENDA ITEM 3. E-REPORTING IN THE WCPO
1.30-3.00pm	3.1 Presentations
	3.2 Panel discussion
3.00 -3.30pm	Afternoon tea
	AGENDA ITEM 4. E-REPORTING IN THE WCPO
3.30-5.00pm	4.1 Workshop exercise
	<ul style="list-style-type: none"> • Next steps for E-Reporting • Engagement with industry • Capacity building for PICT's



E-MONITORING AND E-REPORTING WORKSHOP

Forum Fisheries Agency, 31 March – 1 April 2014
Honiara, SOLOMON ISLANDS

WORKSHOP PROGRAMME

WCPFC-EmandErW- 2014-01_rev1

Tuesday 1 April 2014 – DAY 2

9.00-9.30	<p>AGENDA ITEM 5. DAY 2 WELCOME</p> <p>5.1 Summary of Day 1</p> <p>5.2 Expectations for Day 2</p>
9.30-10.30am	<p>AGENDA ITEM 6. E-MONITORING IN THE WCPO</p> <p>6.1 Presentations</p> <p>6.2 Panel discussion</p>
10.30 – 11am	Morning tea
11-12.30pm	<p>AGENDA ITEM 7. E-MONITORING IN THE WCPO</p> <p>7.1 Workshop exercise</p> <ul style="list-style-type: none"> • Next steps for E-Monitoring • Engagement with industry • Capacity building for PICT's
12.30 -2.00pm	Lunch
2.00-3.00pm	<p>AGENDA ITEM 8. COMMISSION PRIORITIES FOR ACTION</p> <p>8.1 Workshop exercise - Identify next steps and actions to progress EM and ER</p> <p>8.2 Prioritise next steps and actions</p>
3.00 – 3.30pm	Afternoon tea
3.30-5.00pm	<p>AGENDA ITEM 9. NEXT STEPS AND CLOSE</p> <p>9.1 Panel discussion on priorities and outcomes, final questions.</p> <p>9.2 Outcomes – Next steps and report</p>

Attachment C - List of presenters and presentations

	Presenters/Panelists
E-TECHNOLOGIES IN THE WCPO	
E-Reporting and E-Monitoring in the Western and Central Pacific Ocean	Steve Dunn & Ian Knuckey
Implementation of ER and EM in the WCPFC – Assessing possible impacts on employment in Small Island Developing States	Kerry Smith
Panel discussion under Agenda Item 2.3	Facilitator: Lara Manarangi-Trott Panel: Ian Knuckey, Steve Dunn, Kerry Smith, Eugene Pangelinan
E-REPORTING IN THE WCPO	
Scientific data and E-Reporting	Peter Williams
FIMS *	Mark Oates
Electronic reporting implementation	Eric Kingma
EU Paper – Introduction	Ian Knuckey
WCPFC E-monitoring and E-reporting Workshop (E-reporting in the Philippines)	Guan Oon
Panel discussion under Agenda Item 3.2	Facilitator: Ian Knuckey Panel: Peter Williams, Mark Oates, Brian Kumasi, Eric Kingma, Guan Oon
E-MONITORING IN THE WCPO	
E-monitoring implementation in Australia's Eastern Tuna and Billfish Fishery	Trent Timmiss
Electronic Monitoring Trials on Tuna Longline Vessels	Cynthia Wickham
Satlink ECOLOG System	Egor Zaborovsky
Panel discussion under Agenda Item 6.2	Facilitator: Steve Dunn Panel: Trent Timmiss, Cynthia Wickham, Egor Zaborovsky, Albert Cook, Warren Papworth

Attachment D: Presentation of workshop break-out sessions summaries

Summary of E-reporting breakout group discussions

Attachment D

– Summary of E-reporting breakout group discussions

Progressing E-R

- ▶ Develop E-Technical Working Group (EWG) TOR, objectives, priorities, and time frame.
- ▶ Confirm composition of EWG – suggest science, compliance, policy and IT from existing national agencies and institutions, and harnessing TCC expertise.
- ▶ Form WG (ASAP) (“not electronic”).
- ▶ Identify technical issues for EWG.

Progressing E-R

- ▶ Define scope of initial ER implementation.
- ▶ Document current Commission data requirements.
- ▶ Develop harmonised standards, specifications and procedures.
- ▶ Pool existing standards into a collection without bias.
- ▶ Develop Communication strategy for EWG progress and decisions to members.
- ▶ Focus on sub area or sub fleet initially.
- ▶ Focus on end of trip reporting initially.
- ▶ Adopt current data pathways, and a general approach to a phased implementation.

Challenges

- ▶ Lack of technical expertise in member countries.
- ▶ Long term many member PICs need support, resources and costs.
- ▶ The pace of change, may outpace frequency (annual) of TCC meetings.
- ▶ Legal requirements need exploring.
- ▶ Cooperation, and coordination of efforts in countries.

Challenges

- ▶ Concurrent systems, running in parallel means additional work.
- ▶ Implementation of real-time ER
- ▶ Pick up on/explore industry use.
- ▶ Awaiting results of current trials.
- ▶ Uncertainty.
- ▶ Costs for full real time.
- ▶ Functionality of EWG.
- ▶ Different states of development.
- ▶ Communications capacity.
- ▶ Small agency capacity.

Potential new or enhanced recommendations.

- ▶ Consider including explicit reference to catch documentation schemes (CDS) and Marine Stewardship Council reporting requirements, as key drivers of E-R development.
- ▶ Undertake trials with clear scope, recorded results, and feedback.
- ▶ E-R implementation should be cost recovered.

Potential useful support work Secretariat might consider before TCC.

- ▶ Draft EWG TOR, objectives, priorities, and time frame.
 - Clear direction to develop common data format.
 - Ensure formats, systems and products are not reinvented.
- ▶ Monitor and assess ongoing developments and trials (regional/other countries/organisations).

Potential useful support work Secretariat might consider before TCC.

- ▶ Further cost benefit analysis, including investigation and analysis of options, e.g:
 - Real time -v- end of trip reporting
 - Cost recovery
- ▶ Analysis of data security and use issues.
- ▶ Analysis of pathways for data transmission.

Day 2 Workshop Breakout Group Outputs

Progressing E-Monitoring in the WCPO

Progressing E-M

- ▶ Consider rewording recommendation 4 to confirm staged implementation with first step development of standards and trials.
- ▶ Single E-M and E-R EWG, including expertise from DCC and others that have already been involved in successful programs (but with separate time frames for E-M and E-R).
- ▶ Industry briefings and involvement.
- ▶ Confirm potential use and applicability of E-M.
- ▶ Establish E-M EWG objectives and purpose by fishery.

- ▶ Agree to composition of EWG.
- ▶ Establish E-M standards, specifications – flexible enough to allow for service competition.
- ▶ Commission needs to set down E-M standards.
- ▶ Identify data capacity needs, data storage protocols, record/data maintenance processes.
- ▶ Develop competency standards for training, for both operations, and analysis.

- ▶ Encourage time to be made available for presentation of E-M trials to TCC and SC.
- ▶ Encourage members to provide their experience, and to undertake trials, using existing funding, as well as seeking potentially new funding.
- ▶ Provide a clear justification of reasons for implementing E-M, along with objectives, at Commission level.
- ▶ Ensure special attention to SIDS role, support needs, and capacity.

- ▶ Focus on fisheries where highest prospect of successful use e.g. long line.
- ▶ Focus on fisheries not meeting their observer requirements i.e. long line.
- ▶ Undertake demonstration trials, and validate them with results.
- ▶ Develop communication strategy (led by Commission).
- ▶ Consider accreditation of E-M programs under ROP.
- ▶ Further document costs and benefits – including non-financial benefits such as compliance, and OHS.
- ▶ Identify socio-economic impacts.
- ▶ Review national and local legal frameworks.

Challenges

- ▶ Ensure national aspirations for capacity development and employment maximised for SIDS.
- ▶ Logistics – breakdowns, hard drive swap,
- ▶ Data roles
- ▶ E-M might not be suitable for all fishery operations.
- ▶ Commission database acceptance of data.
- ▶ Up front development costs, and initial capital.
- ▶ Funding for trials.

- ▶ E-M specifications for a range of vessels size, fishing method, and configuration (e.g. longline, pole and line, purse seine), and coverage.
- ▶ Cost recovery.
- ▶ Legal frameworks, including use as evidence.
- ▶ Technical sustainability.
- ▶ Human observers potentially being replaced by E-M.
- ▶ Viability for whole fleet roll out.
- ▶ Costs, and costs recovery for equipment, and data review and analysis.
- ▶ Logistics of hard drive recovery and exchange.
- ▶ Database validation.
- ▶ Maintenance of equipment on high seas vessels.
- ▶ Selling benefits to industry.

Potential new or enhanced recommendations.

- ▶ Consider outsourcing of data audits for regional observer program and national agency programs.
- ▶ Consider deleting recommendation 19 in favour of an open issue for EWG discussion.
- ▶ Consider which recommendations might not need to be considered by Commission, i.e. are national or regional issues, or too detailed.
- ▶ Suggest a single EWG process

Potential useful support work Secretariat might consider before TCC.

- ▶ To assist overcome industry resistance, identify industry leaders that can be briefed on E-M to encourage buy-in to the process - and brief them and keep them up to date.
- ▶ Cost benefit, and socio-economic studies

Other comments

- ▶ Longline easier - 1 fish at a time
- ▶ Purse seine - too many fish, hard to determine by-catch
- ▶ Longline - lack of observer accommodation.
- ▶ Support E-M programs at both national and flag state level.
- ▶ Administration through regional and sub-regional observer programs, and through national fishery agencies.
- ▶ Use EWG only for administration at regional level.
- ▶ Suggested E- M coverage of 10%.
- ▶ Great potential benefit to MSC, CDS, market based measure.
- ▶ Is MCS going to want it and do we let them have it?

Attachment E: Summary results of individual workshop participant surveys on the challenges and priorities for ER and EM

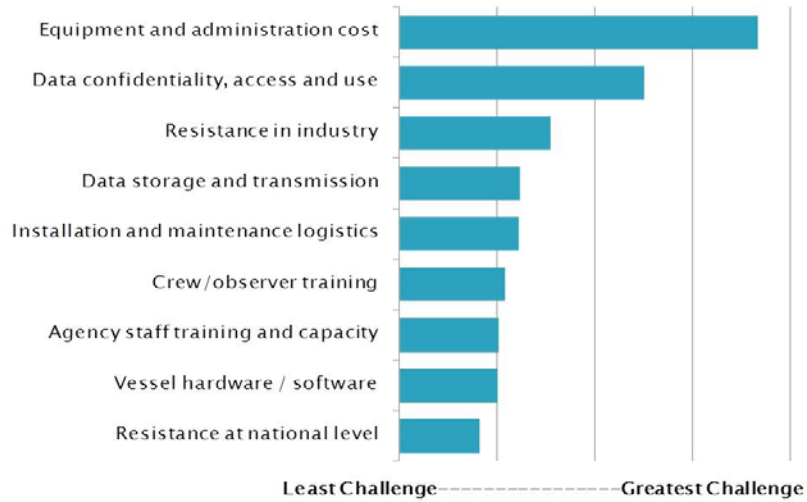


Figure 1 – Challenges to the implementation of ER

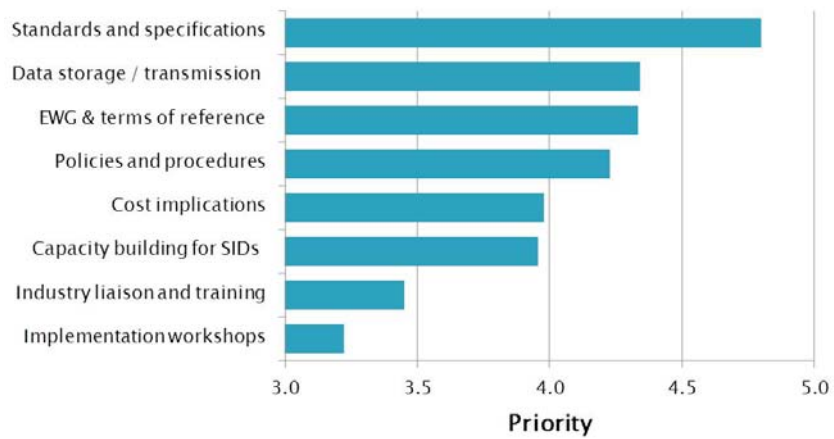


Figure 2 – Priority areas to progress implementation of ER in the WCPFC

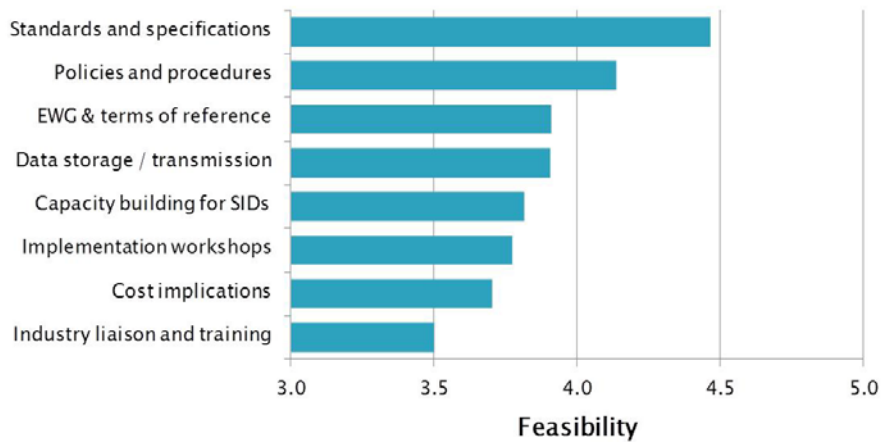


Figure 3 – Feasibility of progressing priority areas (1 is easy, 5 is difficult)



Figure 4 – Challenges to the implementation of EM.

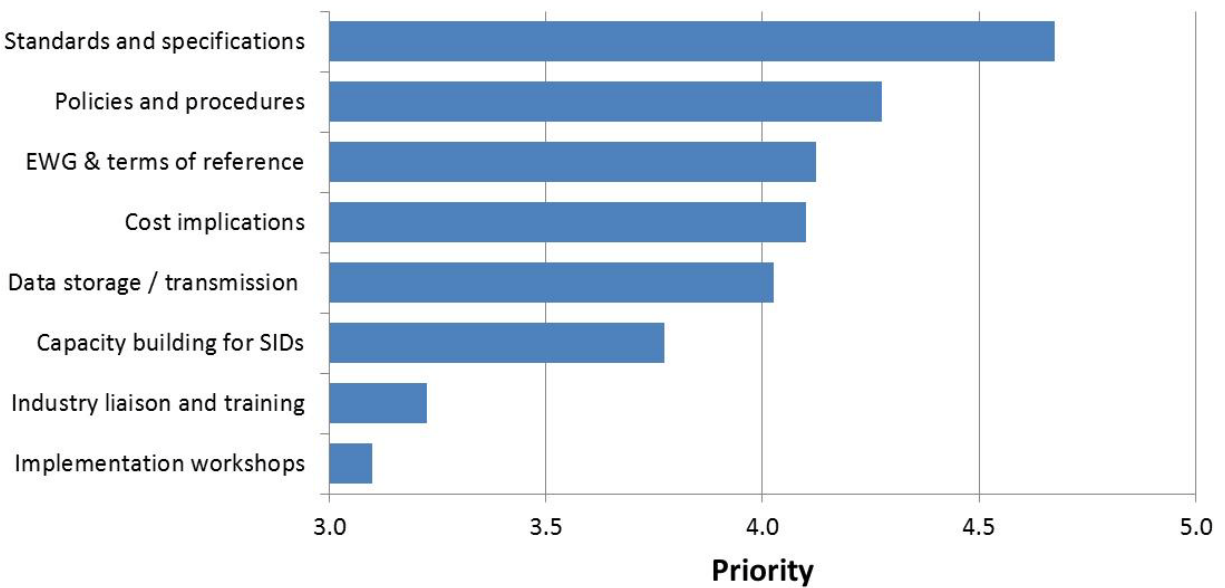


Figure 5 – Priority areas to progress implementation of EM in the WCPFC

Attachment F –Statement from Te Vaka Moana Participants

Electronic Monitoring

TVM participants note the new and emerging technologies being tested for electronic monitoring and have agreed that it would be useful to keep informed about the outcomes of trials of this technology, before taking a decision about adopting this technology

Electronic Reporting and Tablets

TVM participants have agreed that streamlining data reporting processes would have significant benefit to TVM Administrations. TVM Observer Programmes are eager to trial tablets, and receive training on E-Reporting. TVM participants are looking into funding options to enable this activity.

TVM participants want to trial E Log sheet reporting from LL vessels in TVM waters as part of the initial trial to be undertaken in the second quarter of 2014. TVM participants are looking into funding options and assistance from SPC to enable trialling of this reporting within TVM waters, including for TVM fleets and licensed vessels. It is hoped that trials will commence in the second quarter of this year