



2021 Stock Assessment Training Workshops

Final Report

Held virtually from Nouméa, 11-15 and 18-25 May 2021

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Executive Summary

The 2021 Stock Assessment Workshops (SAW) were conducted online this year, using a combination of the Zoom and Moodle platforms. Extensive re-organization of the course was required to adapt material as presented in previous years' in-person SAWs usually conducted on the SPC Nouméa campus. While participation numbers are difficult to accurately characterize for an online course, the number of participants who received a Certificate of Completion for fulfilling all course requirements was 61 for the Introductory Course and 41 for the Advanced Course. A valuable by-product of the online development of the course is a self-guided pair of SAWs housed on the SPC Moodle platform that can be utilised outside the formal workshop time frame.

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PACIFIC ISLANDS



OCEANIC FISHERIES MANAGEMENT



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Objective

The long-term purpose of the Stock Assessment Workshop (SAW) is to increase fisheries officers' ability to: understand and interpret the results emanating from the regional oceanic fisheries stock assessments; to communicate this information to their fishery managers; and to increase their confidence in contributing to scientific discussions of the Western and Central Pacific Fisheries Commission (WCPFC), in particular, during meetings of its Scientific Committee (SC).

Introduction

The SAW was first conducted in 2006 and consisted of a one-week course. The following year the course was expanded to two weeks, comprised of an Introductory and Advanced SAW. This has been the standard format ever since, though there have been variations due to changes in funding and personnel. No SAW was held in 2012, 2014 or 2020. A single week SAW was held in 2013 and 2015. The 2020 Stock Assessment Training Workshop (SAW) was cancelled due to the Covid pandemic. Preparations were well underway in 2020 for a two-week course, with Introductory and Advanced sessions, to be held in May in Noumea, where the course has always been held (save for one year early on in New Zealand). By the time it became clear that international travel would not allow the SAW to take place as planned, there remained insufficient time to develop a viable alternative format to deliver course content that year.

In the 15 years since the SAW was first introduced, support for continuation has been strong. Detailed statistics on historical participation are provided later in the report but, over the years, there have been over 150 different participants (many have attended multiple years). As travel between SPC member countries could not be resumed in 2021, we decided to completely revise the course, optimizing it for online delivery. The SAW is typically designed and taught by the two OFP National Scientists. Due to personnel turnover, only one National Scientist (Sam McKechnie) was available, so Steven Hare (National/Sub-regional Team Leader) stepped in as second SAW instructor. Course preparation occupied both instructors for several months and the course redesign and conduct are detailed next.

In addition to funding for two National Scientist positions within SPC-OFP, it is anticipated that both Introductory and Advanced sessions will be the norm for the next few years. SPC-OFP is grateful for the financial support provided to fund this highly valued workshop. A number of guest presenters were invited to give presentations on topics of interest

Process

A proposal for an online SAW was developed and circulated to Fisheries Departments, and selected prior attendees, to solicit their opinions, input and comments on how a virtual course might best be conducted. Responses were helpful and guided us in limiting expectations relative to course content in earlier years. Key aspects of the online SAW were decided upon as follows:

- Two weeks of instruction, titled Introductory SAW and Advanced SAW.
- Limited repeat of content between weeks – unlike earlier years where the Advanced course was a more detailed and demanding version of the Introductory course. Instead, Week 1 focused on general issues of fish, fisheries and management while Week 2 focused on stock assessment and interpretation of stock assessment output.
- Respondents suggested that workshops for each week should last for three hours daily, Tuesday to Friday, New Caledonia time (thus Monday to Thursday for the three PICTS east of the dateline). Hours were 10-11:30 and 12:30-2:00 New Caledonia time. These days and times ensured that instruction took place during usual working hours (8 am to 5 pm) for all members; participants from Vietnam, a non-SPC member, were slightly inconvenienced with a 6 am time start.

Course design and conduct

- Considerable simplification of material was required. The “normal” SAW runs 7 hours a day, 5 days a week and is delivered to a room of ~ 15 students in a fully interactive environment.
- We decided upon an equal duration of lectures and practicals each day – 1.5 hours of each.
- The Zoom platform (www.zoom.us) was used to present all lectures and the Moodle platform (www.moodle.org) was used to administer all practicals. Moodle also served a very valuable repository of material once presented live via Zoom (more on this aspect later).
- All presentations were prepared using Powerpoint and delivered via screen sharing on Zoom. The target presentation duration was 45 minutes, to allow plenty of time for questions and further discussion, prior to quiz administration, to fill out each 90 minute slot. All presentations, though not the post presentation discussions, were recorded using Zoom.
- The practicals, always an integral aspect of the SAW, required the most revision. The many practicals that had been developed over the years are mostly Excel spreadsheet exercises, along with a small number of Shiny R models. One strength of the Moodle platform is the ease with which quizzes can be developed and administered. While quizzes don’t present the same insight as interactive spreadsheet or shiny exercises, they can be an effective means of reinforcing lecture material in addition to measuring comprehension. We constructed new quizzes (i.e., no carryover from previous years’ SAWs) for each session, with the number of questions ranging from 10-15. Questions could be of several formats – multiple choice, drag-and-drop on a plot, true-false, etc. To increase the value of the quizzes for non-workshop uses, responses for all correct and incorrect answers were prepared, which are presented to test participants upon quiz completion. During the SAW, each quiz possessed a time limit for a single attempt by each participant – this gave us excellent feedback on the difficulty level of the quizzes – and afterwards the quizzes were opened for “infinite” retake so participants could achieve perfect scores if desired. Again, this sort of flexibility and test result scoring was made possible by the Moodle platform. All quizzes except the Final quizzes (discussed next) were scored on a 10 point basis.
- At the end of both weeks, a Final quiz was administered, both consisting of 25 questions. For the Introductory quiz, all questions were taken from the quizzes the students had seen earlier in the week. For the Advanced quiz, there was a mix of old and new questions, with the new questions testing their ability to apply lessons learned in a new context.

The 2021 SAW courses, which were delivered on schedule and as designed, were as follows:

Introductory course

Session times/dates	Day 1 18 May	Day 2 19 May	Day 3 20 May	Day 4 21 May
Session 1 (10:00 - 11:30) (Nouméa time, GMT+11)	Intro, logistics (SM/SH)	Tuna blood and guts (PH) Oceanography and Climate (SH)	Understanding mortality, growth, recruitment (SM)	Why do we model tuna populations (SM)
	Tuna fisheries of the Pacific (SH)			
	Tuna fisheries prac (SH)	Tuna blood, guts, environment prac (SH)	Mortality/growth/recruitment prac (SM)	Modelling prac (SM)
LUNCH (11:30- 12:30)				
Session 2 (12:30 - 14:00) (Nouméa time, GMT+11)	Tuna management (SH)	Tuna data Collection (ES)	Understanding CPUE (TC)	Intro to stock status (SM)
		Tuna data prac (ES)		
	Tuna mgmt prac (SH)	Catch and effort data prac (SM)	CPUE prac (TC)	Stock status prac (SM)
				Final Quiz
SM - Sam McKechnie, SH - Steven Hare, PH - Paul Hamer, ES - Emmanuel Schneiter, TC - Tiffany Cunningham				

Advanced course

Session times/dates	Day 1 25 May	Day 2 26 May	Day 3 27 May	Day 4 28 May
Session 1 (10:00 - 11:30) (Nouméa time, GMT+11)	Intro, logistics (SH/SM)	Advanced stock status (SM)	Review of ALB assessment (CCJ)	Harvest strategies (RS)
	Recap of Week 1 (SH)			Harvest strategies prac (RS)
	Understanding assessment input (SH)			
	Assessment input prac (SH)	Advanced stock status prac (SM)	ALB assessment prac (SH)	HCR demo (RS)
LUNCH (11:30- 12:30)				
Session 2 (12:30 - 14:00) (Nouméa time, GMT+11)	Understanding assessment output (SM)	Advanced Majuro/Kobe plots (SM)	Projections (FS/NY)	Stock status of BET/YFT/SKJ prac (SM)
	Assessment output prac (SM)	Advanced Majuro/Kobe prac (SM)	Projections prac (FS/NY)	
				Final Quiz (SM)
SM - Sam McKechnie, SH - Steven Hare, CCJ - Claudio Castillo-Jordan, FS - Finlay Scott, NY - Nan Yao, RS - Robert Scott				

Presenters

- Sam McKechnie OFP National Scientist (co-organizer of 2021 SAW)
- Steven Hare OFP National/Regional Team Leader (co-organizer of 2012 SAW)
- Emmanuel Schneider OFP Regional Fisheries Data Manager
- Paul Hamer OFP Principal Fisheries Scientist (Stock Assessment/Modelling)
- Tiffany Cunningham OFP Senior Fisheries Scientist (Fisheries Statistician)
- Claudio Castillo-Jordan OFP Fisheries Scientist (Stock Assessment)
- Robert Scott OFP Senior Fisheries Scientist (MSE Modeller)
- Finlay Scott OFP Senior Fisheries Scientist (MSE Modeller)
- Nan Yao OFP Fisheries Scientist (MSE Modeller)

Participation

Determining the exact number of attendees during the two weeks of the SAW is difficult due to the online nature of the course. However, we have several measures of active participation. The number of registrants for the course was 107; however not all who registered attended and several who attended did not register. The daily maximum simultaneous number of unique Zoom logins is listed in this table:

	Day 1	Day 2	Day 3	Day 4
Introductory	62	56	52	55
Advanced	53	45	50	44

Some of the Zoom logins were for entire fisheries departments; for example, Tonga Fisheries had as many as 6 or 7 attendees following the course via one connection. Students were also notified that all presentations were recorded and uploaded to the Moodle site later that day and that quizzes could be taken at any time, thus an unknown number of additional students participated in the course but not during the live sessions. Upon completion of the quizzes and Final exam, we prepared and sent Certificates of Completion for both courses. As of the time of writing this report, a total of 61 Introductory and 41 Advanced certificates have been awarded; a handful of these were awarded in the 2 weeks after the live course ended, as students took advantage of the Moodle platform to access all content and complete the requirements to earn the certificate. A list of students who have been awarded the certificate is provided in Appendix 1. A country and gender breakdown of the students who completed either course is provided below, with a notably balanced number of female and male participants overall.:

Country/Territory	Introductory				Advanced		
	Female	Male	Total		Female	Male	Total
American Samoa		1	1				
Cook Islands	1		1		2		2
Fiji	3	1	4		4	1	5
Micronesia	1	1	2			1	1
Marshall Islands	4	3	7		3	2	5
New Caledonia	1	2	3		1	2	3
Nauru	1	1	2				
French Polynesia	2		2		2		2
Papua New Guinea	1	1	2		1	1	2
Palau	2		2		2		2
Solomon Islands	1	3	4			1	1
Pacific Community	1	1	2		1		1
Tokelau	1		1		1		1
Tonga	2	2	4		2	2	4
Tuvalu	1	3	4			1	1
Vietnam	3	10	13		2	9	11
Vanuatu	1		1				
Samoa	5	1	6				
Total	31	30	61		21	20	41

Student Performance

Following each presentation, an online quiz was given to students. The level of participation in the quizzes varied substantially among the topics. To gauge the appropriateness, and level of difficulty, of each quiz, we imposed a time limit and recorded the grades by students who took the quizzes immediately following the associated presentation. The average grades (all scaled to 100% for a perfect score) for each of the quizzes, and the number of students immediately taking each quiz is given in the following tables. For the most part, scores were relatively high; this was partially by design as the goal was to gauge understanding of the material directly presented, but also to not affect confidence.

Introductory quizzes	No.	Avg.
WCPO fisheries	50	76.4%
WCPO tuna management	52	82.8%
Tuna biology and envir.	47	83.7%
WCPO data collection	50	78.0%
Tuna biology parameters	43	85.5%
CPUE	45	73.5%
Tuna modelling overview	50	74.2%
Final quiz	34	88.4%

Advanced quizzes	No.	Avg.
Assessment inputs	32	38.8%
Assessment outputs	36	76.0%
Stock status	37	76.0%
Kobe/Majuro plots	35	71.7%
Albacore assessment	33	69.4%
Projections	36	88.9%
Harvest strategies	39	81.6%
Tuna case study	48	69.7%
Final quiz	39	73.2%

Moodle as content delivery platform

To ensure a successful virtual SAW, it was quickly realized that some manner of organizing and preserving content was required that differed significantly from the arrangements used for an on-campus workshop. A relatively new, to SPC, content management platform known as Moodle was suggested to us. Wikipedia summarizes Moodle as follows:

Moodle is a free and open-source learning management system (LMS) written in PHP and distributed under the GNU General Public License. Developed on pedagogical principles, Moodle is used for blended learning, distance education, flipped classroom and other e-learning projects in schools, universities, workplaces and other sectors.

With customizable management features, it is used to create private websites with online courses for educators and trainers to achieve learning goals. Moodle allows for extending and tailoring learning environments using community-sourced plugins.

SPC has licensed Moodle in a manner that allows SPC divisions to develop training modules; several modules are in various stage of development currently at SPC, including several within the Oceanic Fisheries Programme. The web address for the SPC Moodle site is <http://spc.learnbook.com.au>. Users must request login credentials from the SPC Moodle administrator, and we procured logins for all SAW participants early on during course development, to minimize registration difficulties once the course actually began. We were also able to distribute pre-SAW material via Moodle to participants.

Two modules were developed, one for the Introductory course and another for the Advanced course. Within both modules, the structure follows that outlined in the course content graphics listed earlier. For each session, we posted the original Powerpoint from the lecture and, at the end of each day, the Zoom recording of each presentation. Quizzes were developed and administered within Moodle. As noted earlier, a real strength of Moodle is the development, administration and reporting of results for quizzes. We were also able to upload to each module other content of interest, such as reference papers, videos, and links.

Following completion of the SAW, the Moodle content was formatted such that the two SAW courses can now be taken as self-guided courses on the Moodle platform. This is one of the most valuable products arising from the virtual SAW and is certain to provide additional stock assessment training options not only for the SAW, but also for use once travel by SPC staff to member countries resumes.

SAW logos

A pair of logos was prepared this year. These logos are used on the Moodle site and within course content to indicate the two modules.



2021 Introductory Stock Assessment Workshop



2021 Advanced Stock Assessment Workshop

Outcomes

It is always difficult to directly assess outcomes from this kind of fundamental training, and the real assessment will emerge from the improved capabilities of participants at Scientific Committee and WCPFC meetings, as well as their use of this knowledge in developing national or departmental briefings on the status of stocks and the targets of oceanic fisheries management. This is especially true for a virtual SAW. However, participants were also asked to anonymously complete a questionnaire about their experiences which, as with previous courses, will assist us to continually improve the training process. The questionnaire was given to both workshops, and results for both are attached as appendices – Appendix 2 for the Introductory course and Appendix 3 for the Advanced course.

A quick summary of participant opinion of course content and their engagement is presented in the following two graphics, taken from the surveys (all scores are on a basis of 5.0)



Training content & participation - Introductory SAW



Training content & participation - Advanced SAW



Lessons Learned

- The 2021 SAWs were, in many ways, completely different from the SAWs of the past decade. The challenges of presenting complex material, to a diverse audience of participants from many nations, were greatly magnified: by the need to simplify material, by the abbreviated time to deliver content and, especially, by the requirement to conduct everything online.
- In the end, we think it is fair to say that the conduct of the two SAW courses this year far exceeded expectations. The use of Moodle to organize, present, and preserve content was perhaps the single largest factor in the success of this year's SAWs. Students often noted the ease with which they could obtain, and review, material.
- Similar to the two-week 2019 Stock Assessment Workshop, we decided it best to continue with the format of presenting both an Introductory and Advanced Workshop. Given some feedback from previous workshops, we made the decision to further simplify (in terms of maths) and diversify the material for the Introductory course. Many of the students that attend this course have had very little interaction with stock assessments. As such, "Stock Assessment Workshop" is a bit of a misnomer for the Intro course, which is now more of a general fisheries management overview course. Nonetheless, the acronym, and the fact there is an Introductory and Advanced course, is well known across the Pacific and we feel it best to maintain the naming convention.
- In a similar vein, the wide variation in experience and educational background of the participants from different countries also means that a two-part workshop, with Introductory and Advanced sessions, is preferable for the future.
- The one traditional aspect of the course that we had to omit this year was the – oft-feared – Student Presentation. In past year's the final afternoon of the course was reserved for presentations by students, who reviewed an assigned stock assessment. These presentations were prepared by small groups during a morning session and presented to an audience of fellow students as well as other OFP staff. This was a valuable rite-of-passage for many students, and should virtual delivery of the SAW continue, it would be valuable to develop a means for re-creating this experience.
- Comprehension of stock assessments is obviously still a significant challenge to many fisheries staff in SPC member countries. The SPC SAW is one of the most visible and effective methods we have to increase regional expertise, or at least familiarity, with the complex and technical tuna and billfish stock assessments. The effectiveness of these SAWs is evident when examining many of the top fisheries personnel in SPC member nations. A few of the more notable alumni are listed below, along with a summary of SAW participation over the years (these totals do not include the 2021 numbers listed earlier)
- 141 different attendees – combined 291 courses attended
- 58 women (117 courses attended)
- 83 men (174 courses attended)
- Record for most courses attended: 7 (4 people have attended 5)
- 28 different countries (and several institutions)

Some well-known graduates:

- Pam Maru (Secretary of Ministry of Marine Resources, Cook Islands)
- Ludwig Kumoru (PNA Chief Executive Officer, PNG)
- Manu Ducrocq (Head of Fisheries and Environment, New Caledonia)
- Ueta Fa'asili (Principal Fisheries Officer, Samoa)
- Edward Honiwala (Deputy Director, Ministry of Fisheries, Solomon Islands)

- As these effective people can be promoted out of their delegations it is imperative to maintain the continuity of the SAW.
- There is an often-expressed need for scientific capacity to be improved within national fisheries administrations. Some countries may lack personnel with a fisheries science background, while some others may feel that this is the kind of specialist expertise that is most efficiently concentrated at the regional collaborative level. **However, it should be strongly emphasised in future invitations that this workshop is not so much about training national scientists to produce stock assessments from the ground up, but about assisting existing fisheries staff to better understand the implications (and the limitations) of the scientific advice.** These people are required to assimilate a large amount of complex information, whatever their institutional capacity, and then provide it back to their national institutions and develop strategies to tackle regional management decision making.

Financial report

The GEF UNDP OFMP 2 project funding has covered the costs of the SAW for the past several years. Due to its virtual delivery this year, costs differed from those of previous years where GEF funds were used for participants' Per Diem/DSA, airfares and travel costs, and meals. The major cost this year was the salary costs of the two staff who spent considerable time over several months re-organizing the course for virtual delivery. A breakdown of the direct SAW costs are as follows

In US dollars

	GEF budget
Salaries	\$74,400
Supplies	\$1,219
Admin & other	\$1,093
Total	\$76,712

In addition to the direct GEF Project spending, the SAW leveraged several indirect funding sources. Assistance in delivering presentations came from several SPC scientists who are variously funded by New Zealand Aid, Australia Aid, and the European Union through their funding support for the WCPFC, e.g., "Simulation testing of reference points". Other SPC and FFA projects and programme funding contributed substantively to the workshop as well.

Conclusion

Again, we would like to thank the GEF UNDP OFMP project for making this workshop possible. Judging by the responses of the participants, both objectively and subjectively it was a resounding success. Even conducted virtually, it helps to address a major practical need among SPC developing island member states, as well as being greatly valued and appreciated. This workshop has encouraged us about the prospects for increasing member country fisheries science capacity in the near future. While we would certainly hope that the SAW could return to in-person instructional course, the groundwork has been firmly laid for future virtual delivery if required in the absence, or in addition to the face-to-face workshops.

Appendix 1 – Students receiving Certificates of completion for the 2021 Introductory and Advanced Stock Assessment Workshops

Country	Student	Introductory Certificate	Advanced Certificate
American Samoa	Sean Felise	YES	
Cook Islands	Chloe Wragg		YES
Cook Islands	Tiare Nicholas	YES	YES
Fiji	Arishma Ram	YES	YES
Fiji	Leba Miller	YES	YES
Fiji	Mereoni Qionimacawa		YES
Fiji	Moses N Mataika	YES	YES
Fiji	Natalie Vilisoni	YES	YES
French Polynesia	Anne-Marie Trinh	YES	YES
French Polynesia	Taiana Raoulx	YES	YES
Marshall Islands	Casmil Saimon	YES	YES
Marshall Islands	Edgar Morales	YES	YES
Marshall Islands	Lily Muller	YES	YES
Marshall Islands	Lyla Lemari	YES	
Marshall Islands	Melvin Silk	YES	
Marshall Islands	Tatiana Alik-Jack	YES	YES
Marshall Islands	Tatiana Shoniber	YES	YES
Micronesia	Jamel James		YES
Micronesia	Mavrick Adolf	YES	
Micronesia	Yvonne Falieapiy	YES	
Nauru	Julian Itsimaera	YES	
Nauru	Stacie Adun	YES	
New Caledonia	Francois Prioul	YES	YES
New Caledonia	Lea Carron	YES	YES
New Caledonia	Mickael Lercari	YES	YES
Pacific Community	Brad Phillips	YES	
Pacific Community	Pauline Machful	YES	YES
Palau	Persis Omelau	YES	YES
Palau	Zilah Oiterong	YES	YES
Papua New Guinea	Angela Kwapena	YES	YES
Papua New Guinea	Sai Ugufa	YES	YES
Samoa	Betty Sailivale	YES	
Samoa	Junior Ajawas	YES	
Samoa	Lorian Finau-Groves	YES	
Samoa	Moli Iakopo Amosa	YES	
Samoa	Serafina Ah-Fook	YES	
Samoa	Tuapou Ariu	YES	
Solomon Islands	Claudius Halumwane	YES	
Solomon Islands	Melodie Fanai	YES	
Solomon Islands	Paul Jay Tua	YES	YES
Solomon Islands	Ramsey Tuza	YES	
Tokelau	Luisa Naseri-Sale	YES	YES
Tonga	Makeleta Malimali	YES	YES
Tonga	Siaosi Fonua	YES	YES
Tonga	Siaosi Vi	YES	YES
Tonga	Tracy 'Aisea	YES	YES
Tuvalu	Laitailiu Seono	YES	
Tuvalu	Niukita Taape	YES	YES
Tuvalu	Rosalia Uoka	YES	
Tuvalu	Tupulaga Poulasi	YES	
Vanuatu	Feeongka Kaltho	YES	
Vietnam	Do Van Thanh	YES	YES
Vietnam	Huy Hoang	YES	YES
Vietnam	Nguyen Huu Thanh	YES	YES
Vietnam	Nguyen Lam Anh	YES	YES
Vietnam	Nguyen Thi Nghiem Thuy	YES	YES
Vietnam	Nguyen Thi Thu	YES	
Vietnam	Nguyen Viet Hung	YES	YES
Vietnam	Pham Quoc Huy	YES	
Vietnam	Tran Van Hao	YES	YES
Vietnam	Vu Duyen Hai	YES	YES
Vietnam	Vu Nhu Tan	YES	YES
Vietnam	Vu Thi Nhung	YES	YES
Vietnam	Vu Tien Binh	YES	YES

STOCK ASSESSMENT WORKSHOP - INTRODUCTORY

PARTICIPANT FEEDBACK SURVEY RESULTS

Snapshot:

- Overall, the participants rated the presentations as clear and easy to understand with 97% of the survey responders agreeing or strongly agreeing to this statement.
- Ninety-four percent of the participants would recommend a similar training to their colleagues.
- The overall organisation of the workshop was rated with a high average score of 4.2 out 5.
- Ninety-seven percent of the participants stated that their knowledge on Stock Assessment has increased as a result of this workshop.

Introduction

The introductory Stock Assessment Workshop was held in May 2021 using Zoom as a platform. There were 34 responses to the participants feedback survey.

Participants were asked to rate the workshops organisation, the use of Zoom, the Moodle platform and the practical session that included quizzes and shiny tools. Overall, the training organisation received very positive scores with an average of 4.2 (out of 5). The use of the Moodle platform to deliver all the course content was rated the highest by participants with an average of 4.29 (out of 5).

Suggestion – Time:

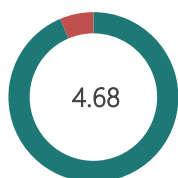
“Please make it a full day! It is a crash course that I wish I had more time to it”.

Suggestion – Use of Quizzes:

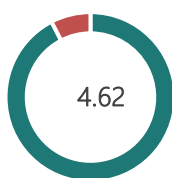
“Quizzes to be more challenging and more in-depth discussions into the science of stock assessments.”

Training content & participation

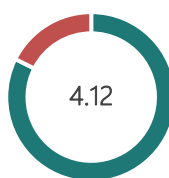
Training Context



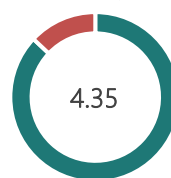
Clear objectives



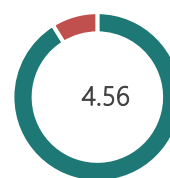
Participant engagement



Explanations of concepts



Usefulness of practical sessions



Most useful: From the 30 responses to this section, 13 participants stated that they found all the sessions useful to them. The session that was mentioned the most by participants was the CPUE session, followed by the session on Understanding Mortality, Growth and Recruitment.

“Understanding mortality, growth, recruitment because of helping me to more clearly understand approaches to manage tuna effectively.”

“I would say all of them because I didn’t really know anything about SAW but now, I can say that I learned some new things that are relevant to my area.”

Least useful: Even the participants were asked to rate their least useful sessions, 16 out of 29 participants that responded answered that they found everything useful. Additionally, the CPUE session was mentioned by eight participants as response, due to the complexity of the topic.

“CPUE, I found it difficult to understand”

“None. They were all new things to learn and were all very informative.”

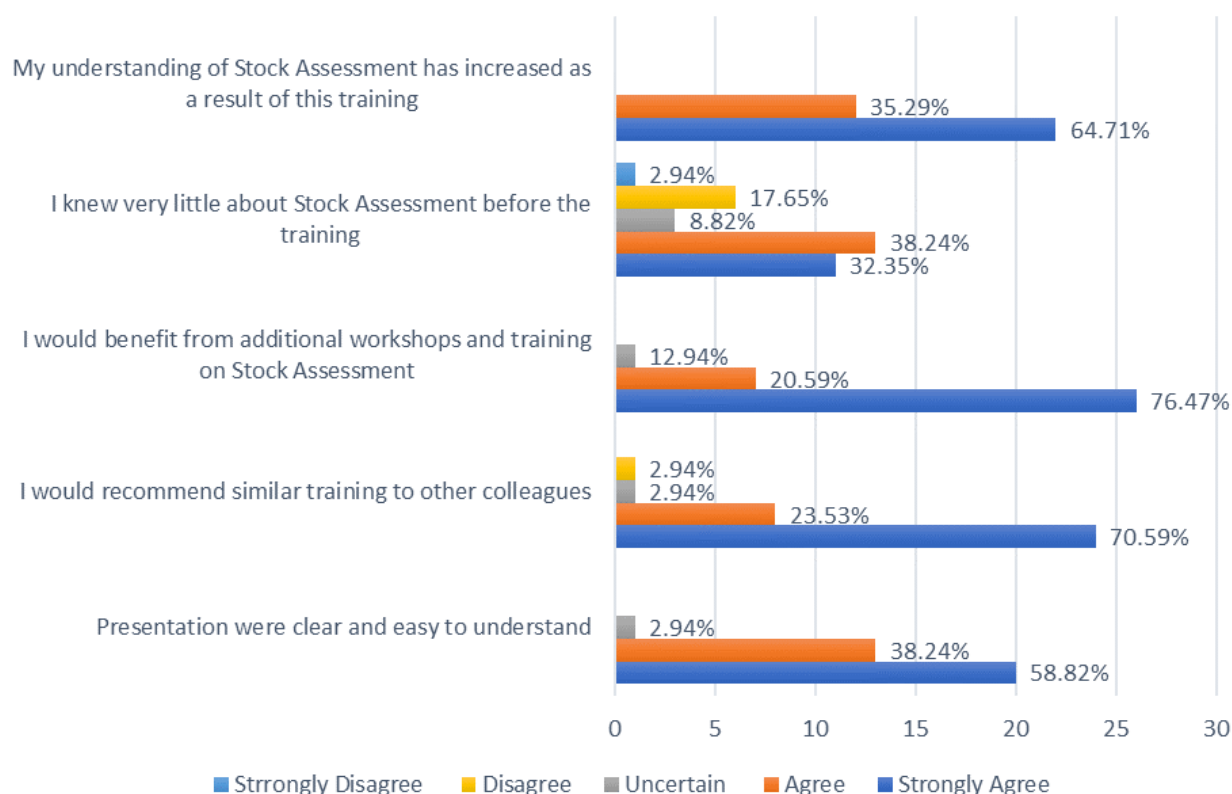


Figure 1: Participant feedback on meeting content

Overall Ratings

Overall, the workshop presentation was clear and easy to understand as stated by 97% of the survey responses. Ninety-seven percent of the participants would benefit from additional workshops and trainings on Stock Assessment and ninety-four percent of participants would recommend a similar to training to other colleagues. Most participants (97%) stated that their understanding of Stock Assessment has increased as a result of this training.



Suggestions for improvement

Thirty-four participants responded to the survey but 27 answered this section while seven skipped. Some of the suggestions were:

- ▶ **Face-to-face training (4 comments):** Several participants mentioned that they would prefer face-to-face trainings, whenever it is possible safely and have a more practical and hands-one approach.
- ▶ **More time needed (4 comments):** Several participants stated they would like to have more time spent on the different presentations, that would allow for more questions and explanation on certain topics.
- ▶ **More quizzes (4 comments):** The quizzes run throughout the workshop were reflected as very useful. Participants mentioned that they would like to see more of them and extend the length as well.
- ▶ **Other suggestions:** Some other suggestions were made by participants them including; more courses on the techniques on Stock Assessment, divide the group into different levels according to the level of understanding on Stock Assessment, have some breakout groups for exercises and discussions.

“More sessions so that we can understand better everything that is being taught.”

that

Annex: Result tables

Q1. Please rate the following (content)	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree	N/A	Total	Weighted Average
The objectives of the training were clear and explained well	22	11	1	0	0	0	34	4.62
Training content was well structured	23	11	0	0	0	0	34	4.68
Explanation of concepts and topics were clear and easy to understand	17	13	3	1	0	0	34	4.35
There were enough opportunities to ask questions	16	15	3	1	0	0	34	4.12
Practical sessions were useful and easy to understand	19	15	0	0	0	0	34	4.56

Q2. Please rate the following (organisation)	Very poor	Poor	Average	Good	Excellent	N/A	Total	Weighted Average
The practical sessions. Including quizzes and shiny tools	4	0	0	12	18	0	34	4.18
The Moodle platform for delivering the course content	3	1	0	9	21	0	34	4.29
Zoom platform used	2	3	2	11	16	0	34	4.06

Q3. Overall rating	Strongly disagree	Disagree	Uncertain	Agree	Strongly agree	N/A	Total	Weighted Average
Presentations were clear and easy to understand	0	0	1	13	20	0	34	4.56
I would recommend similar training to other colleagues	0	1	1	8	24	0	34	4.62
I would benefit from additional workshops and training on Stock Assessments	0	0	1	7	25	0	34	4.74
I knew very little about Stock Assessment before the training	1	6	3	13	11	0	34	3.79
My understanding of Stock Assessment has increased as a result of this training	0	0	0	12	22	0	34	4.65

For further information on this feedback, contact Monitoring, Evaluation and Learning team, FAME, terryo@spc.int

STOCK ASSESSMENT WORKSHOP - ADVANCE

PARTICIPANT FEEDBACK SURVEY RESULTS

Snapshot:

- Overall, the participants rated the presentations as clear and easy to understand with 100% of the survey responders agreeing or strongly agreeing to this statement.
- Hundert percent of the participants would recommend a similar training to their colleagues.
- The overall organisation of the workshop was rated with a high average of 4.61 out of 5.
- Hundert percent of the participants stated that their knowledge on Stock Assessment has increased as a result of this workshop.



Introduction

The advanced Stock Assessment workshop was held in May 2021, using Zoom as the main platform. There were 17 responses to the participants feedback survey.

Participants were asked to rate the workshops organisation, use of Zoom as online training platform, the practical session including quizzes and shiny tools and the use of the Moodle platform for delivering the course content. Overall, the organisation was rated very highly with an average of 4.61 out of 5. The practical session including the quizzes and the shiny tools received the highest participant rating with 4.71 out 5.

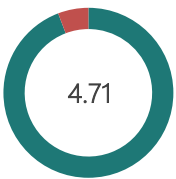
General Feedback

“Well nothing much, the workshop was pretty well organized and I really love of how the quizzes were done after each presentation because it helps me to understand more about the topic discussed in the presentation.”

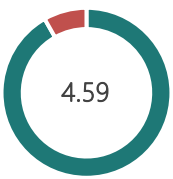


Training content & participation

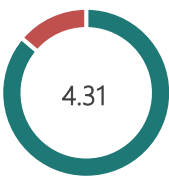
Training Content



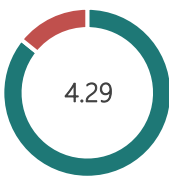
Clear objectives



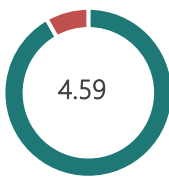
Participant engagement



Explanations of concepts



Usefulness of practical sessions



Most useful: Out of 14 participants responding to this question eight mentioned that they found all sessions and presentations useful. Furthermore, participants mentioned that they found the quizzes useful and a good way to test their knowledge. On the topic side several participants mentioned topic 3 the Majuro and Kobe plot and the Harvest Strategy as useful.

“The session of this training that I learned a lot from is the Topic 3 – The Intro to Majuro & Kobe Plots. This is where I learned where to put a dot on the figure and its position which tells us whether we should be worried about the stock or not. And the colour coded on Majuro plots also identify the good and back of stocks.”

“I liked all the sessions, especially when I do the quiz because some of the quiz was straight forward and some were a bit tricky but, in the end, I enjoyed doing this course.”

Least useful: Even the participants were asked to rate their least useful sessions, eleven out of 14 participants that responded mentioned that nothing was not useful. The only two comments that were mentioned by a few participants were that some of the quizzes were slightly too difficult.

“To be honest, in my opinion, this is my first time taking this stock assessment workshop and I think I have learned a lot this couple of weeks with new topics regarding the stocks of fish in our ocean and it’s a great experience for me to learn new things in life especially the life of our species in the ocean.”

“Some content of the quiz with tricky questions when analysing the projection model.”

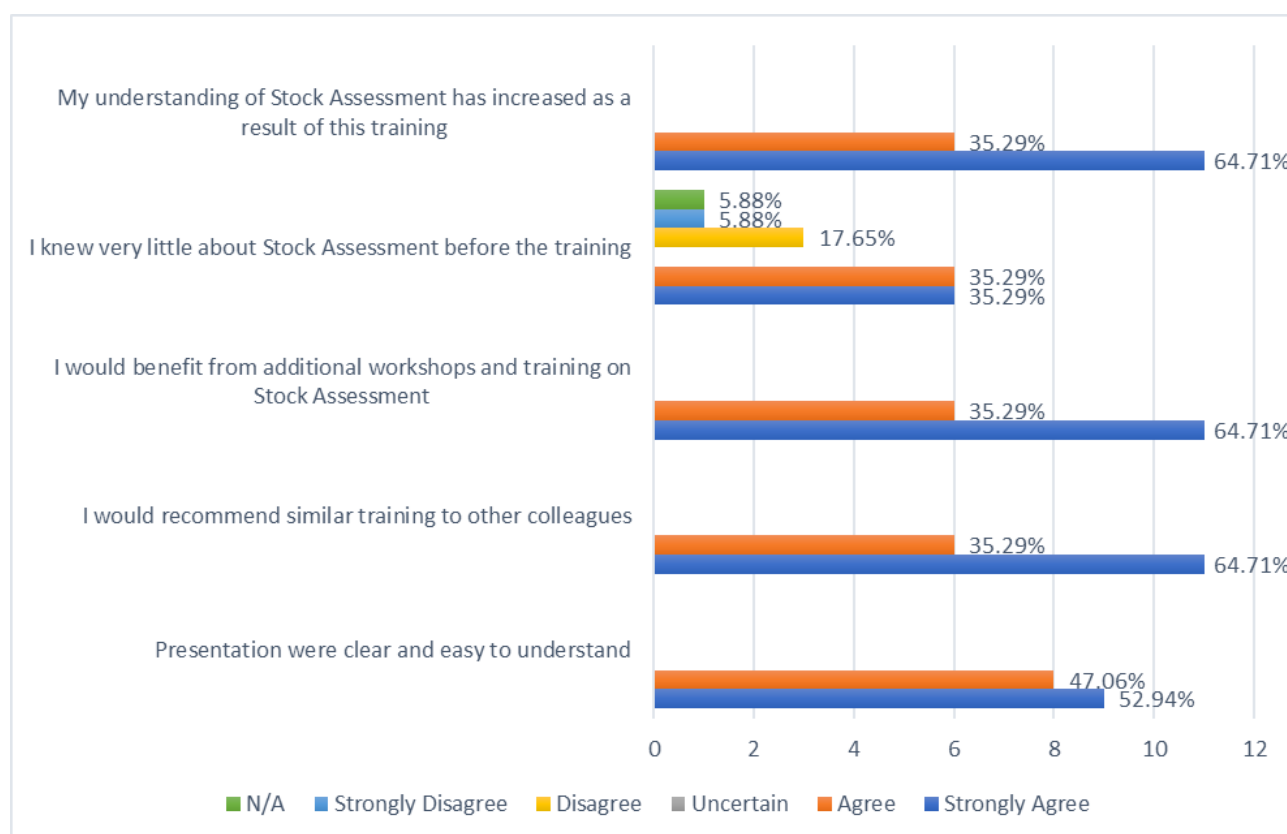


Figure 1: Participant feedback on meeting content



Overall Ratings

Overall, the workshop presentation was clear and easy to understand as stated by 100% of participants who responded to the survey. Hundert percent of the participants stated that their understanding of Stock Assessment increased as a result of the training and that they would benefit from further training. Additionally, all participants (100%) would recommend similar trainings to their other colleagues.



Suggestions for improvement

Seventeen participants responded to the survey but 14 answered this section while three skipped. Some of the suggestions were:

- ▶ **Improvement on quizzes (3 comments):** The quizzes generally were seen as useful, however some suggestion for improvement came up. Predominately, a suggestion was to increase the time allocate to the quizzes and ensure that they do not run over the allocated time.
- ▶ **Face-to-face training:** Having this kind of workshop in a face-to-face setting especially considering the models and calculations.
- ▶ **More similar workshops:** Interest in further similar workshop was demonstrated in the feedback survey
- ▶ **Other suggestions:** One further suggestion was to increase the time spend on the actual mathematics of the Stock Assessment.

“Would have been far better if it was not an e-workshop as I think we could benefit more from more practicals especially with the models and calculations.”

Annex: Result tables

Q1. Please rate the following content	Strongly Agree	Agree	Uncertain	Disagree	Strongly disagree	N/A	Total	Weighted Average
The objectives of the training were clear and explained well	10	7	0	0	0	0	17	4.59
Training content was well structured	12	5	0	0	0	0	17	4.71
Explanation of concepts and topics were clear and easy to understand	6	10	1	0	0	0	17	4.29
There were enough opportunities to ask questions	8	6	1	1	0	0	16	4.31
Practical sessions were useful and easy to understand	10	7	0	0	0	0	17	4.59

Q2. Please rate the following (organisation)	Very poor	Poor	Average	Good	Excellent	N/A	Total	Weighted Average
The practical sessions, including quizzes and shiny tools	0	0	1	3	13	0	17	4.71
The Moodle platform for delivering the course content	0	0	1	5	11	0	17	4.59
Zoom platform used	0	0	1	6	10	0	17	4.53

Q3. Overall rating	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	N/A	Total	Weighted Average
Presentations were clear and easy to understand	9	8	0	0	0	0	17	4.53
I would recommend similar training to other colleagues	11	6	0	0	0	0	17	4.65
I would benefit from additional workshops and trainings on Stock Assessment	11	6	0	0	0	0	17	4.65
I knew very little about Stock Assessment before the training	6	6	0	3	1	1	17	3.81
My understanding of Stock Assessment has increased as a result of this training	11	6	0	0	0	0	17	4.65

For further information on this feedback, contact Monitoring, Evaluation and Learning team, FAME, terryo@spc.int