PRACTICAL SAFETY AND FISHING COURSE FOR PACIFIC ISLAND FISHERIES OFFICERS

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In October, SPC's Fisheries Development Officer, William Sokimi, assisted the Vanuatu Maritime College in coordinating the Practical Safety and Fishing Course for Pacific Islands Fisheries Officers. The course provided hands-on training in fishing operations that use several sustainable fishing methods commonly used on small craft in the Pacific Islands region. Fishing operations were conducted according to safe operational plans (SOPs) that ensured crew safety onboard and promoted environmental awareness. The course also explored economically viable fishing practices that may be conducive to a specific local situation.

Course topic areas included tuna catching methods such as small-scale pelagic horizontal and vertical longlining; mid-water jigging and mid-water handlining fishing; deep-bottom fishing; basic navigation and seamanship; vessel operations and management; vessel and crew safety; onboard handling and preservation of catch for meeting export standards; information on bycatch mitigation; and small scale bait fishing gear and methods.

At the end of the course, fishermen were expected to return to their respective jobs in the region and use the knowledge they gained during the course to assist fishing communities and enterprises in developing sustainable and profitable fishing operations.

Course participants included Ben Buga, Solomon Islands Fisheries Officer; Elko-Joe Agir, Nauru Aquaculture and Coastal Fisheries Officer; Erbai Yukiwo, Palau Fisheries Extension Fisheries Officer; John Oswyn, PNG National Fisheries College Commercial Fisheries Team Leader; Pomat Nelson PNG Manus Provincial Administration Post Harvest Officer; Martin Finau, Tonga Department of Fisheries Officer; Pesamino Tufele, Wallis and Futuna Fisheries Officer; Morgan Magatogia, Niue Department of Fisheries Officer; Tanuvasa Toetu Pesaleli Samoa Fisheries Division Extension Fisheries Officer/Skipper/ Engineer; and Tiavare Henry, Cook Islands private sector commercial fisherman.

Figure 1: FV *Etelis*.

Course activities

The first week focussed on safety courses, beginning with a two-day class on sea survival techniques, followed by a one-day class on fire fighting, and a two-day workshop on first aid. These short courses were well received by participants because with the exception of two participants, none had any previous formal training in sea survival techniques, fire fighting or first aid.

Week two focussed on deep-bottom fishing activities, week three on vertical longlining and week four on horizontal longlining. Each Monday from week two to week four was set aside to construct fishing gear specific to the fishing operation for that week. At the end of the day, the gear was placed on the vessels, and from Tuesday to Friday practical fishing activities were conducted according to the assigned fishing method for that week.

The FV *Etelis* and the FV *Em Nao* (Figs. 1 and 2) carried out the operations for deep-bottom fishing, vertical longlining, trolling, and mid-water jigging. The FV *Evolan* (Fig. 3) was used for horizontal longlining because it is equipped with a hydraulic line hauler and has

sufficient deck space to carry out this operation effectively.

Sea survival, fire fighting and first aid courses

Onboard fishing operations was the main thrust of the Practical Safety and Fishing Course; therefore, it was important that participants fully understand the basic concepts of dealing with emergencies at sea before departing on fishing trips. Participants were required to undergo training in sea survival techniques (Fig. 4), fire fighting (Fig. 5) and basic first aid (Fig. 6). These short courses also gave participants an insight into the basic qualifications required by seafarers for admission to work on commercial fishing vessels. This insight will assist fisheries officers in dealing with offshore fishing personnel during the course of their duties.

During the progression of each course, assessments were carried out to ensure that participants grasped the concepts and lessons they were taught. Participants who did not understand any part of the lessons were re-briefed until they understood. At the end of each course, a final assessment was conducted to ensure that participants retained the information given during the lessons. At the end of the week, each participant qualified for a Safety Certificate and was eligible to be onboard during the practical fishing trips.

Safety awareness briefing: Safe Operational Plans

Another main of the course was to stress the importance of

Figure 2 (top): FV *Em Nao*.

Figure 3 (middle): FV *Evolan*.

Figure 4 (bottom): Participants engaging in sea survival techniques.

implementing safe operational plans (SOPs) (Fig. 7). SOPs reduce the chances of mishaps at sea and, in the event that a mishap does occur, crew members will have a better chance of survival than if an SOP had not been implemented.

During the course, an SOP and fishing gear checklist was filled out every morning before departure. It was signed by the skipper and handed over to the college's shore duty officer for the day. The 10 participants were divided into two SOP groups. Before departure, the SOP group for the day had to ensure that every item on the checklist was accounted for and that the vessels were ready for the practical fishing operations. Upon return from the fishing trip the SOP group for the day carried out the final fish processing duties, ensuring that at the end of the operation, all the fish were properly gilled, gutted and iced according to the preferences of the fish buyers.

The second SOP group was responsible for tidying up the vessel and stowing away the fishing gear in readiness for the next fishing trip. This group also refuelled the vessel and prepared it for the next fishing trip, as they would be the SOP group the next morning.

An important point that was stressed to participants was that the SOP for any vessel is unique to that vessel alone. This is because each vessel has a different layout and positioning of gear and so the requirements for each vessel are slightly different.

Figure 5 (top): Dealing with an onboard fire.

Figure 6 (middle): Practicing first aid on a dummy.

Figure 7 (bottom): Pomat Powayai of PNG carrying out an SOP check.

Practical fishing activities

A PowerPoint presentation was given to brief participants on the course structure and the type of fishing methods that would be carried out. Fishing gear was constructed during the afternoons of the first week, after the safety classes.

The fishing methods taught during the course were deep-bottom fishing (Fig. 8), trolling (Fig. 9), FAD/mid-water jigging using the chum bag method and jigging rods, vertical longlining, horizontal longlining, and bouke-ami lift net bait fishing.

While most participants were familiar with some of the fishing methods, only several of them had any real opportunity to go out on fishing trips. The deep-bottom fishing method was known to most, probably because it is an extension of the shallower bottom-fishing methods. However, vertical longlining, horizontal longlining, mid-water chum-bait fishing and bouke-ami baiting method were new to most participants.

Although some participants knew about the "drop stone" method, none had actually tried it, so the modern variation of this method (using a chum bag), was not known to most of them (Figs. 10 and 11).

Participants were given the opportunity to participate in each fishing method and to make recommendations for

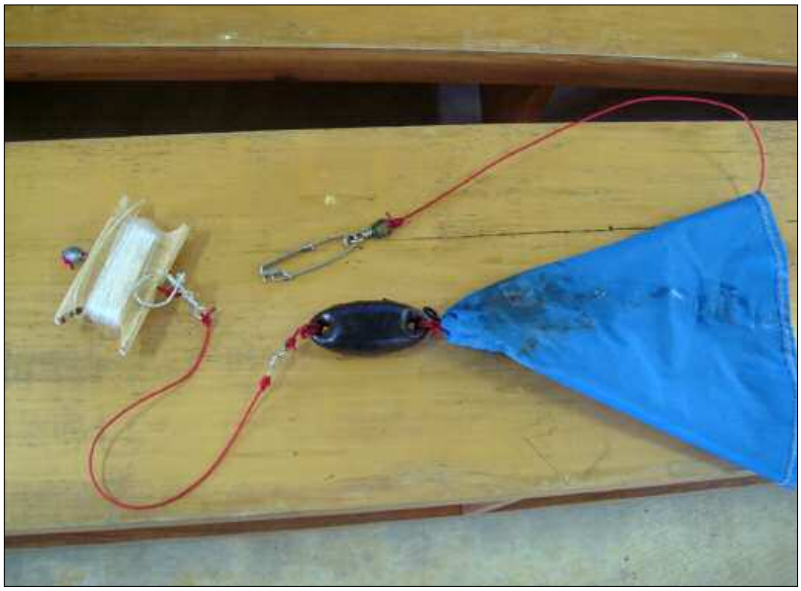

Figure 8 (top): Morgan Magatogia of Niue trying his hand at deep-bottom snapper fishing.

Figure 9 (middle): Mahi mahi and yellowfin tuna caught while trolling at the FAD.

Figure 10 (bottom): Chum bag gear used for mid-water fishing.

improving fishing operations or suggest modifications to the fishing gear to suit their personal preferences.

Catch records

Catch records were kept every day by the SOP group. Participants were briefed on the importance of maintaining catch records in logbooks, and on listing information on fish species, number caught, weight, length, fishing area, fishing time, method used, number of hooks used, and tide level.

Trolling at the FAD produced good results. The fish caught were predominantly skipjack tuna (*Katsuwonus pelamis*), followed by juvenile yellowfin tuna (*Thunnus albacares*), mahi mahi (*Coryphaena hippurus*), mackerel tuna (*Euthynnus affinis*), rainbow runner (*Elagatis bipinnulata*), great barracuda (*Sphyraena barracuda*) and wahoo (*Acanthocybium solandri*).

During the deep-bottom fishing sessions (Fig. 12), 108 fish were caught with a total whole weight of 389.6 kg (see Table 1 below).

Vertical longlining was the main fishing method during week three. The total catch of 101 fish, weighing 351.6 k (see Table 2 for details).

Horizontal longlining was the main method used during week four. The catch from this fishing method included a total of four sets conducted in two consecutive days, two sets per day. The catch totalled 12 fish weighing 108.7 kg (see Table 3 below).

During the three weeks of practical fishing, 221 fish were caught, weighing a total of 849.9 kg.

Table 1: Deep-bottom fishing results

Common name	Scientific name	No. of individuals	Combined weight (kg)
Ruby snapper	*Etelis carbunculus*	55	262.9
Grouper	*Epinephalus morrhua*	3	3.5
Mahi mahi	*Coryphaena hippurus*	2	10.2
Dogtooth tuna	*Gymnosarda unicolor*	1	16.7
Rainbow runner	*Elagatis bipinnulatus*	3	3
Blue-lined flower snapper	*Pristipomoides amoenus*	7	3
Longtail red snapper	*Etelis coruscans*	7	23
Yellowfin tuna	*Thunnus albacares*	3	8.6
Mackerel tuna	*Euthynnus affinis*	1	1.2
Amberjack	*Seriola rivoliana*	5	24.4
Green jobfish	*Aprion virescens*	1	1.3
Rosy jobfish	*Pristipomoides filamentosus*	14	19.4
Large-eye bream	*Wattsia mossambica*	5	11.4
Great trevally	*Caranx ignobilis*	1	1
Total		**108**	**389.6**

Table 2: Vertical longlining results

Common name	Scientific name	No. of individuals	Combined weight (kg)
Yellowfin tuna	*Thunnus albacares*	28	198.6
Skipjack tuna	*Katsuwonus pelamis*	64	107.2
Mahi mahi	*Coryphaena hippurus*	7	43.1
Rainbow runner	*Elagatis bipinnulatus*	1	1.2
Mackerel tuna	*Euthynnus affinis*	1	1.5
Total		**101**	**351.6**

Table 3: Horizontal longlining results

Common name	Scientific name	No. of individuals	Combined weight (kg)
Yellowfin tuna	*Thunnus albacares*	4	88
Great barracuda	*Sphyraena barracuda*	1	1.5
Ruby snapper	*Etelis carbunculus*	1	7.5
Longtail red snapper	*Etelis coruscans*	1	4.5
Grouper	*Epinephalus* sp.	2	5.6
Large-eye bream	*Wattsia mossambica*	1	0.8
Blue-lined flower snapper	*Pristipomoides amoenus*	2	0.8
Total		**12**	**108.7**

Fish aggregating device

A fish aggregating device (FAD) was deployed 2 nm southwest of Malo Island in 530 m depth by Nare Wolu, masterfisherman with the Vanuatu Maritime College. The FAD had been in the water one month before the course started and several schools of fish were in the vicinity during the course.

Schools of skipjack schools included individual fish weighing between 1 kg and 6 kg while a school of juvenile yellowfin tuna included fish ranging from 8 kg to 15kg. The deeper yellowfin tuna in the area ranged from 18–50 kg, and several of these were caught using the chum bait fishing method.

Processing the catch

Several onboard demonstrations were carried out to demonstrate the recommended methods for onboard handling of fish for the fish markets according to the buyer's preference. The bulk of the catch was retained on ice for processing at the college's fish processing room where the participants could participate as a group to gill, gut, clean and ice the fish and also record the species and weight of each fish caught.

The participants were briefed on the different methods in which deepbottom fish and pelagic fish are processed and the reasons for processing them this way.

Figure 11: Yellowfin tuna caught using the mid-water chum bait method.

Marketing

Arrangements for marketing the catches were made by the college's office administration manager, Norman Davies. Actual marketing was undertaken by Kelvin Talo, the college's senior catering instructor. Fish were sold to local stores, restaurants, motels and also to college staff

Figure 12: Deep-bottom fishing.