

Survey Report on Demersal Fishery Resources Living in Un-trawlable Area in Rakhine Fishing Ground of Myanmar using Bottom Vertical Longline

23 – 30 January 2009



Department of Fisheries, Myanmar



Southeast Asian Fisheries Development Center

TD/RP/127

Survey Report on Demersal Fishery Resources Living in Un-trawlable Area in Rakhine Fishing Ground of Myanmar by Bottom Vertical Longline

Background:

Since 2006, SEAFDEC had conducted Demersal Fishery Resources Living in Un-trawlable Fishing Grounds in Southeast Asian Waters using MV.SEAFDEC2 and using other research vessels in collaboration with the Member Countries. This aims to evaluate on the potential resources of economically important species in the un-trawl able areas. The survey areas will be focused in the EEZ of member countries and/or trans-bordering areas particularly in the un-trawlable fishing grounds.

Rakhine fishing ground of Myanmar is one of the target survey areas where still lacking information considering an un-trawlable fishing area. It characteristic is a narrow continental shelf with the rocky area. It is therefore not suitable for trawling but there is still a possibility for other fishing gear such as bottom vertical longline. It is envisaged that the survey result will be analyzed together with the data collected from other un-trawlable areas in the region.

Objectives:

1. To investigate the potential resources of some economically important species on the un-trawlable ground at the Rakhine fishing ground of Myanmar using bottom longline; and
2. To introduce and carry out trial of the appropriated/ responsible fishing gears and practices for harvesting of fisheries resources on the un-trawl able grounds.

Materials and methods:

Fishing gear:	Bottom vertical longline (Fig.1), 360 hooks /station (20 baskets) All fishing gear were transfer from Ranong province to Yangon by favor of Siam Jonathan Co,Ltd.
Type of bait:	Squid
Immersion time:	2 hours
No. of station:	10 stations
Survey area:	Rocky area of Rakhine fishing ground (Fig. 4, table 1)
Topography survey:	Portable echo sounder
Fishing vessel:	2 Local fishing boats, Personal on board of each fishing boat included 1 DoF staff, 3 SEAFDEC staffs, 3 fishermen and 2 crews.
Period:	25 - 30 January 2009
Fishing port:	Thanwe

Participants:

From SEAFDEC/TD

- | | |
|----------------------------|-------------|
| 1. Ms. Penchan Laongmanee | Coordinator |
| 2. Mr. Sayan Promjinda | Team member |
| 3. Mr. Narong Ruandsivakul | Team member |
| 4. Mr. Nakaret Yasook | Team member |
| 5. Mr. Aussawin Buachuay | Team member |
| 6. Mr. Suchart Kitsamut | Team member |
| 7. Mr. Tana Rangjoy | Team member |

From Department of Fisheries, Myanmar

- | | |
|------------------------|-------------------------------------|
| 1. Mr. Khin Maung Soe | Coordinator |
| 2. Mr. Aung Tae Oo | Taxonomist |
| 3. Mr. Min Khine | Team member (on board fishing boat) |
| 4. Mr. Kyaw Naing Htwe | Team member (on board fishing boat) |

Local fishermen

10 local fishermen join on board rental boats

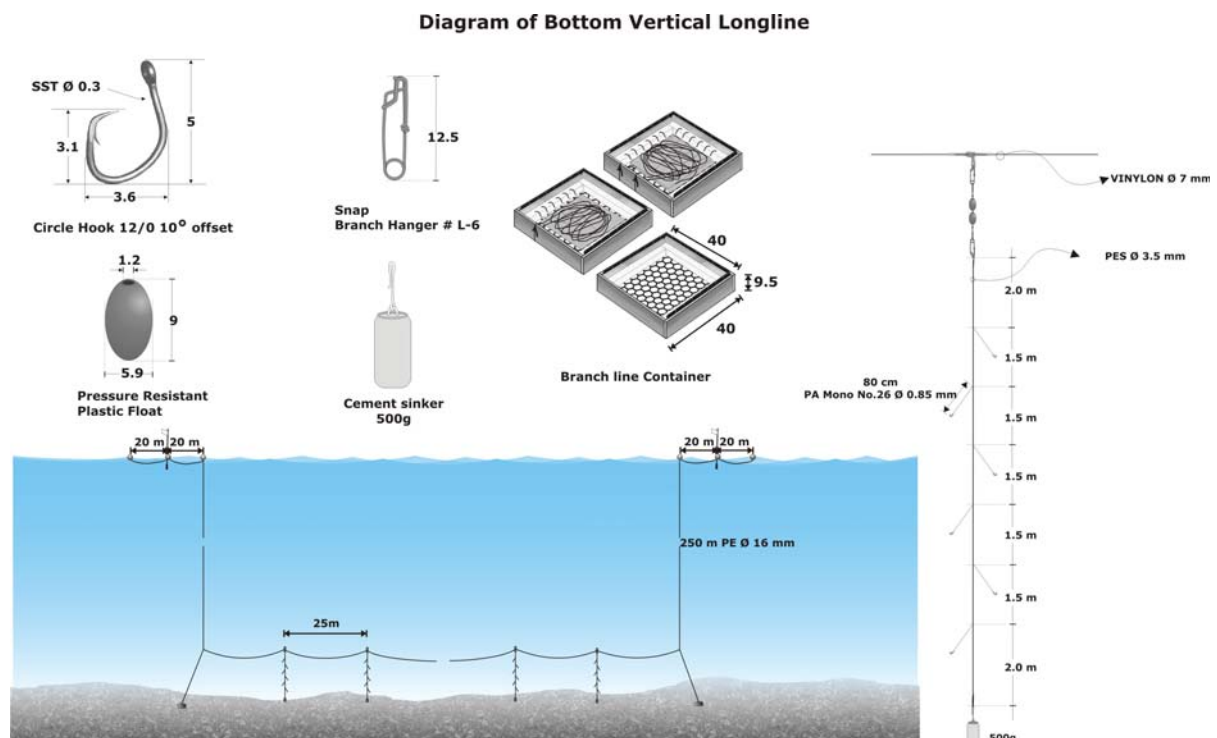


Figure 1. Diagram of bottom vertical longline

Activities brief:

25 January 2009

Team member start the activity by preparation of the fishing gear and sea trial with the two rental boats. Then we discussed to reschedule the activities. This is due to the speed of rental boat (carrier boat) that average speed is about 4 knots without any communication equipment therefore we have to rearrange the fishing ground to be rocky area that travel time is not more than 4 hour from fishing port. Another problem is we are not able to travel to Gwe due to the collapse of the bridge on the way from Thanwe to Gwe. Therefore, we are not able to survey at offshore of Gwe as planed.



Figure 2. Fishing gear preparation and trial.

26- 30 January 2009

Survey team leave fishing port at 05:00, the fishing ground and fishing operation information are in table 1. Before each operation, bottom topography was surveyed for suitable fishing ground (rocky area) using portable echo sounder. The fishing position is shown in fig.4. Catch then were identified and measured length (cm) and weight (g) at the accommodation as report in table 2.

After fishing operation of potential fishery resources survey as well as demonstration bottom vertical longline to fishermen, all fishing gears then were give to bottom longline fishermen.

Table 1 Partial information of fishing operation for Demersal Fishery Resources Living in Un-trawlable Area in Rakhine Fishing Ground of Myanmar by Bottom Vertical Longline

St. no.	Date	Shooting				Hauling				Number of hook	Immersion time	Sea depth (m)	Total cath (number)	Total catch weight(kg)	Hook rate (%)	CPUE pcs./ 1000 hook
		Start	Finish	Start	Finish	Start	Finish	Start	Finish							
1	27-Jan-09	Time	1015	Time	1107	Time	1200	Time	1330	396	2 hrs. 4 minute	32	2	2.45	0.51	5.05
		Lat	18°30'.87 N	Lat	18°30'.90 N	Lat		Lat								
		Long	093°50'.47 E	Long	093°49'.53 E	Long		Long								
2	26-Jan-09	Time	1007	Time	1100	Time	1211	Time	1319	378	2 hrs. 11 minute	8-16	4	1.32	1.06	10.58
		Lat	18°30'.81 N	Lat	18°31'.56 N	Lat		Lat								
		Long	093°56'.47 E	Long	093°55'.96 E	Long		Long								
3	27-Jan-09	Time	0940	Time	1005	Time	1113	Time	1205	360	1 hrs. 32 minute	25.7-26.5	2	0.70	0.56	5.56
		Lat	18°22'.29 N	Lat	18°22'.29 N	Lat	18°22'.28 N	Lat	18°23'.13 N							
		Long	094°02'.16 E	Long	094°02'.16 E	Long	094°02'.18 E	Long	094°02'.07							
4	26-Jan-09	Time	0952	Time	1021	Time	1237	Time	1335	396	3 hrs.	37.2 - 37.6	16	5.74	4.04	40.40
		Lat	18°20'.42 N	Lat	18°21'.14 N	Lat	18°20'.42 N	Lat	18°25'.30 N							
		Long	094°08'.22 E	Long	094°07'.56 E	Long	094°08'.12 E	Long	094°07'.40							
5	28-Jan-09	Time	0800	Time	0834	Time	1008	Time	1055	360	2 hrs. 14 minute	37-38	0	0.00	0.00	0.00
		Lat	18°17'.92 N	Lat	18°17'.10 N	Lat		Lat								
		Long	094°06'.83 E	Long	094°06'.94 E	Long		Long								
6	28-Jan-09	Time	0857	Time	0925	Time	1035	Time	1125	378	1 hrs. 49 minute	38.2 - 39.0	7	2.18	1.85	18.52
		Lat	18°14'.13 N	Lat	18°14'.90 N	Lat	18°14'.14 N	Lat	18°14'.85 N							
		Long	094°07'.36 E	Long	094°06'.96 E	Long	094°07'.36 E	Long	094°06'.97							
7	29-Jan-09	Time	0820	Time	0843	Time	0940	Time	1030	366	1 hrs. 34 minute	40 -40.2	10	4.58	2.73	27.32
		Lat	18°10'.34 N	Lat	18°11'.12 N	Lat	18°10'.40 N	Lat	18°11'.11 N							
		Long	094°08'.83 E	Long	094°08'.61 E	Long	094°08'.87 E	Long	094°08'.67							
8	29-Jan-09	Time	0837	Time	0910	Time	1000	Time	1040	270	1 hrs. 26 minute	38-45	2	4.50	0.74	7.41
		Lat	18°05'.76 N	Lat	18°05'.25 N	Lat		Lat								
		Long	094°06'.84 E	Long	094°07'.38 E	Long		Long								
9	30-Jan-09	Time	0706	Time	0729	Time	0840	Time	0930	378	1 hrs. 48 minute	16.2-22.7	2	0.36	0.53	5.29
		Lat	18°16'.97 N	Lat	18°17'.44 N	Lat	18°17'.01 N	Lat	18°17'.54 N							
		Long	094°17'.32 E	Long	094°16'.56 E	Long	094°17'.29 E	Long	094°16'.63							
10	30-Jan-09	Time	0700	Time	0718	Time	0830	Time	0904	270	1 hrs. 38 minute	15-18	0	0.00	0.00	0.00
		Lat	18°14'.65 N	Lat	18°14'.68 N	Lat		Lat								
		Long	094°16'.97 E	Long	094°17'.61 E	Long		Long								
Total										3,552			45	21.82	1.27	12.67

Table 2 List of fish species from Demersal Fishery Resources Living in Un-trawlable Area in Rakhine Fishing Ground using bottom vertical longline (26-30 January 2009)

Date	St no.	Species	Common name	Total length (cm)	Fork length (cm)	Wight (g)	Body depth (cm)	Head length (cm)	Sex
27-Jan	1	<i>Scolopsis monogramma</i>	monocle bream	35	26.5	350	9	7.5	F
		<i>Pseudobalistes flavimarginatus</i>	Yellowmargin triggerfish	44	-	2100	20	13.5	F
26-Jan	2		Moray eel	126	-	750	-	-	M
			Moray eel	77	-	250	-	-	M
			Moray eel	68.5	-	250	-	-	F
		<i>Lagocephalus wheeleri</i>	Puffer fish	15.5	14	70	-	-	F
27-Jan	3	<i>Cephalopholis formosa</i>	Bluelined grouper	26	-	240	7.5	8.5	F
		<i>Lethrinus sp.</i>	Emperor	34.2	31.8	455	8.5	10.5	M
26-Jan	4		Moray eel	92.5	-	500	-	-	M
			Moray eel	75.5	-	291	-	-	F
			Moray eel	104	-	610	-	-	M
			Moray eel	94.5	-	500	-	-	M
			Moray eel	71	-	250	-	-	F
			Moray eel	75.5	-	291	-	-	F
			Moray eel	84	-	410	-	-	F
			Moray eel	67	-	190	-	-	F
			Moray eel	99	-	580	-	-	M
			Moray eel	74.5	-	260	-	-	F
			Moray eel	76	-	270	-	-	F
			Moray eel	100	-	510	-	-	M
			Moray eel	93	-	460	-	-	M
			<i>Seriolina Nigrofasiata</i>	blackbanded trevally	27	23.5	270	6.5	6.3
	<i>Pomadasy Hasta</i>	Silver grunt	24	-	250	7.5	7	F	
	<i>Lagocephalus wheeleri</i>	Puffer fish	16	14	100	-	-	F	
28-Jan	6	<i>Nemipterus japonicus</i>	Japanese threadfin bream	18.5	17	90	5	4.6	-
		<i>Nemipterus japonicus</i>	Japanese threadfin bream	22.5	20	144	6	6	-
		<i>Lutjanus erythropterus</i>	crimson snapper	30	-	423	10	8.7	-
			Moray eel	104	-	690	-	-	-
			Moray eel	67.5	-	190	-	-	-
			Moray eel	102.5	-	510	-	-	-
29-Jan	7	<i>Arius sp.</i>	Sea catfish	44	36	740	7.5	10	M
		<i>Arius sp.</i>	Sea catfish	39.5	31	460	6	8.5	M
			Moray eel	67.5	-	200	-	-	M
			Moray eel	101	-	530	-	-	F
			Moray eel	65	-	165	-	-	M
			Moray eel	110	-	690	-	-	F
			Moray eel	92	-	450	-	-	F
			Moray eel	63	-	180	-	-	M
			Moray eel	111	-	560	-	-	F
			Moray eel	109	-	600	-	-	F
29-Jan	8		Moray eel	107	-	604			M
		<i>Arothron stellatus</i>	Starry toadfish	53.5	-	3900	18	16	M
30-Jan	9	<i>Cephalopholis formosa</i>	Bluelined grouper	25.9	-	240	8	8.3	M
		<i>Cephalopholis argus</i>	Blue spotted groupe	19.8	-	120	6.7	7	M



Figure 3. Bottom Vertical Longline operation and fish identification and measurement activity during 26-30 January 2009.

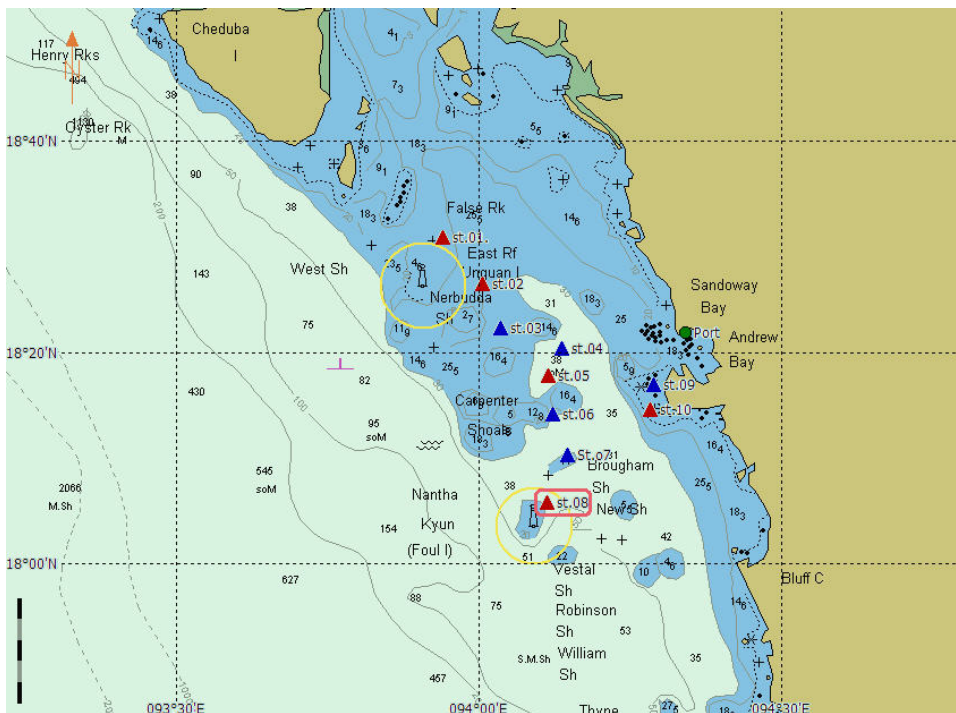


Figure 4. Fishing position map (red and blue triangle is position of boat No. 1 and 2, respectively)



Figure 5. Fishing gears were given to local fishermen.

Jade Taw fishing village observation



Figure 6. Seaside of Jade Taw fishing village

Major fishing gear in this area is small purse seine operate by two boats; light boat and seine boat, 18 crews on that two boats. Fishing trip is only one night. Leave from landing site at about 17:00 and come back in the morning. Crew is searching for the fish school by the experience eye then luring light to aggregate fish before net shooting. Generally fishermen operate only 1 or 2 time per night. Fishing ground of small purse seine is about 5 nautical miles from shore (about 1.5 hour travel time).

Fishing season in this area is six months due to strong wind and wave that is influence of SW Monsoon. Average catch of small purse seiner is about 200 Wiz (320 kg)/season /boat. Catch that was observed on 30 January are king mackerel, black pomfret, frigate tuna, anchovy, mackerel, wolf herring, squid, etc.

Most of catch were dry under sunlight for sending to Yangon and some were export to China. Only few good quality fish was daily transport to Yangon due to the inconvenient of transportation.

The other fishing gears that were observed are gill net, hand line and bottom longline. They more utilize pelagic than demersal resources. There is the joint venture company from Thailand (Siam Jonathan Co.,Ltd) operate bottom trawl at the offshore area of Thanwe.

Interesting information from discussion with local fisherman (Mr. Nyi Lay Gyi) is he observed that the high abundance streaked spinefoot in this area is 10 years cycle.



Figure 7. Fishing activities along Jade Taw fishing village



Figure 8. *Scolopsis monogramma* (Cuvier, 1830), Monocle bream from st. no.1, TL 35 cm, W 350 g



Figure 9. *Nemipterus japonicus* (Bloch, 1791), Japanese threadfin bream from st. no. 6, TL 22.5 cm, W 90 g



Figure 10. *Lethrinus* sp. , Emperor from st. no. 3, TL 34.2 cm, W 455 g



Figure 11. *Lutjanus erythropterus* (Bloch, 1790), Crimson snapper from st. no.6, TL 30 cm



Figure 12. *Cephalopholis argus* (Bloch & Schneider, 1801), Blue spotted grouper from st. no. 9, TL 19.8 cm, W 120 g



Figure 13. *Cephalopholis Formosa* (Shaw, 1812), Bluelined grouper from st. no. 9, TL 25.9 cm, W 240 g



Figure 14. *Pomadasy hasta* (Bloch, 1790), Silver grunt from st. no.4, TL 24 cm, W 100 g



Figure 15. *Seriolina nigrofasciata* (Rüppell, 1829), Blackbanded trevally from st. no.4, TL 27 cm, W 270 g



Figure 16. *Arius* sp. , Sea catfish from st. no.7, TL 44 cm, W 740 g



Figure 17. *Pseudobalistes flavimarginatus* (Rüppell, 1829), Yellow margin triggerfish from st. no.1, TL 44 cm, W 2.1 kg



Figure 18. *Lagocephalus wheeleri* (Abe, Tabeta & Kitahama, 1984), Puffer fish from st. no. 2 , TL 15.5 cm, W 70 g



Figure 19. *Arothron stellatus* (Bloch & Schneider, 1801), Starry toadfish from st. no. 8 , TL 53.5 cm, W 3.9 kg



Figure 20. Moray eel from st. no. 2 , TL 68.5 cm, W 250 g



Figure 21. Moray eel from st. no. 2, TL 126 cm, W 750 g