Solidarités
Aide humanitaire d'urgence

Schweizerische Eidgenossenschaft
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Swiss Agency for Development and Cooperation SDC

Progress Report - Solidarités Myanmar

Early Recovery of Very Small Scale Fishery Sector

I. Introduction

The project area is an estuarine basin of the Irrawaddy delta covered with a number of rivulets, creeks, canals and mangrove forests. Nutrient rich brackish water fluctuates twice daily, assorted species of fish, prawn, shrimps and crabs are in abundance seasonally. Both inland and estuarine fishery activities have been well practiced in the delta with the exception of the spawning season particularly in the pre-monsoon period.

Objective

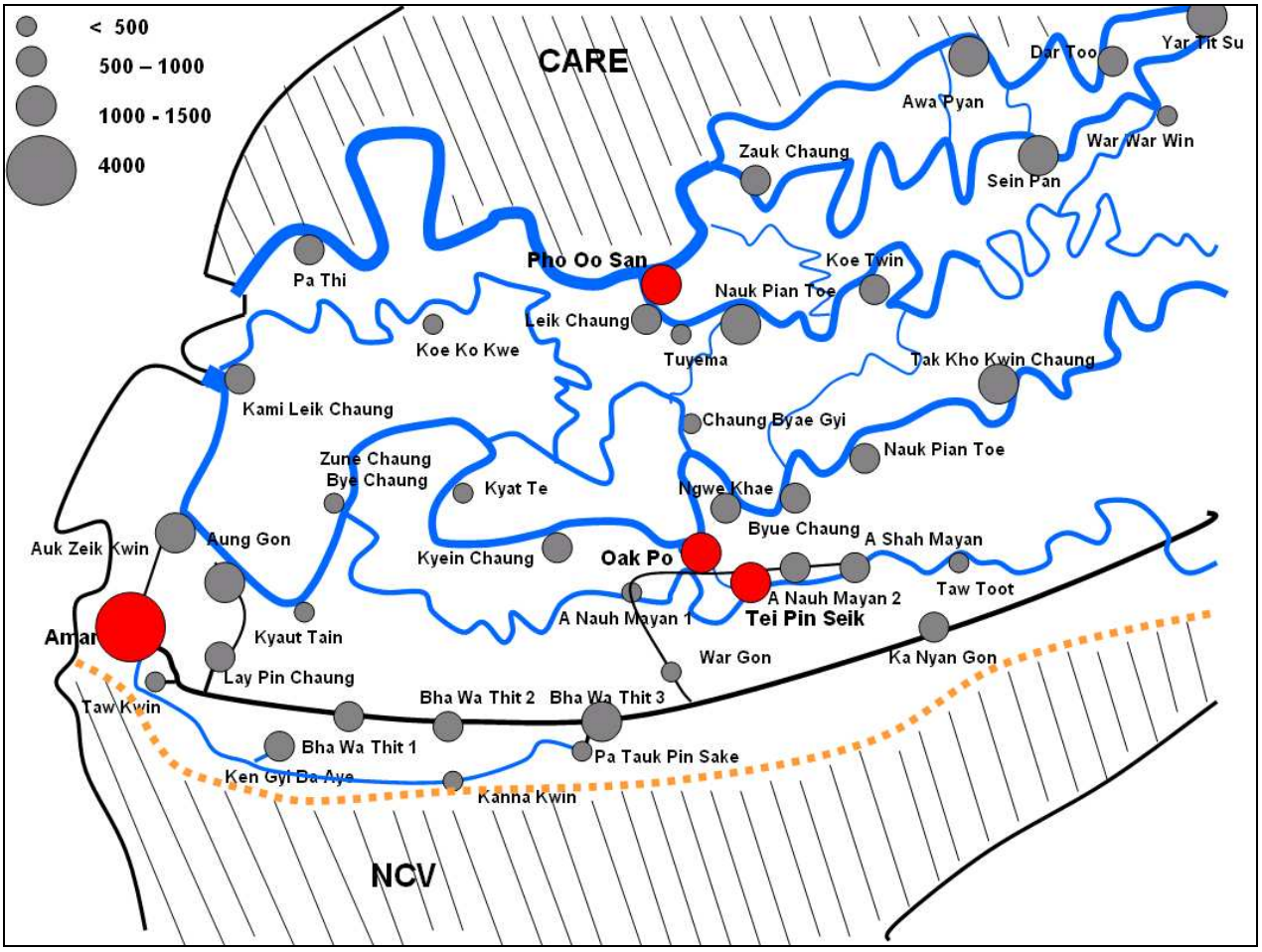
To support remote populations affected by the Nargis Cyclone in the extreme south of Bogale/Pyapon Township – Ayeyarwaddy Division

II. Assessment

The field assessment on early recovery of small scale fishery in the southern part of Bogalay and Pyapon was carried out from 21 December 2008 to 2 January 2009.

Villages selected for assessment and respective visit dates are listed below:

Date	Villages
21-Dec-08	Ahmar
	Sune Pa (Ahmar)
22-Dec-08	Kan Gyi Ba Aye
23-Dec-08	Kanna Kwin
	Wah Yit (Kanna Kwin)
	Padauk Pin Seik
24-Dec-08	Khami Leik Chaung
	Kokko Kwe
	Zune Chaung/Byue Chaung
	Kyet Te
25-Dec-08	Te Pin Seik
26-Dec-08	Taw Toot
	Ngwe Khae
	(Bawgawaddy)Kyein Chaung
27-Dec-08	Chaung Bye Gyi
	Byue Chaung
28-Dec-08	Tat Kho Kwin Chaung
	Nauk Pyan Toe (Kama-hauk)
29-Dec-08	Kan Thar Yar (Pathi)
	We Chaung (Pathi)
	Oat Pon (Pathi)
	Thuye Ma
	Leik Chaung (Pho Oo Zan)
30-Dec-08	Koe Twin
	Nauk Pyan Toe (Pho Oo Zan)
	Goat Chet (Pho Oo Zan)
31-Dec-08	Zauk Chaung
	Sein Pan
	Wah Wah Win
	Ywar Thit Su
1-Jan-09	Pho Oo Zan
2-Jan-09	Dah Too
	Awa Pyan



Map of Solidarités Intervention area

A. Objectives

The objectives were to build the team's practical knowledge of the intervention area in terms of the estuarine fishing problem statement and intervention strategy, as well as to identify beneficiaries according to the following selection criteria:

For provision of fishing gear:

1. Fishermen residing in the poorest and most affected remote villages
2. Fishermen who have poor and low income for daily living irrespective of gender and marital status
3. Laborer whose daily income generation relies on estuarine fishery
4. Landless, jobless with no opportunity for daily laborers work
5. Family caring for people living with disability
6. Person available to carry out home based income generation activities

B. Data collection methodology

1. Key informants

Local fishery products buying stations (locally known as *Ywe-dai*) where actual lists of professional fisher folk are available were mostly selected as key informants. We could therefore gather the names of people who are engaged in fishing and selling their daily catch on a regular basis.

2. Head of villages and community

When the information was not available at the buying stations and/or buying stations were absent in a village, lists of fisher folk were obtained from village leaders upon request.

3. Questionnaires

People were invited to meet the fishery team and asked about their needs by use of a questionnaire. A series of face-to-face interviews were conducted and in some villages, home visits were made to meet possible beneficiaries. As peoples' participation is a key to success, local people who willingly wish to participate in this fishery recovery program were warmly welcomed. Interviewed households were recorded together with their needs for fishing gear and canoes.

The questionnaire was designed to assess different types of small scale fishing gear usually used before the cyclone and being used by most fisher folk. It also consisted in assessing type of canoe, and village jetty people used before the cyclone and destroyed by it.

III. Results

A. Fishing gear

Solidarités teams automatically rejected fishing gears such as push nets or drag nets, as they are not selective enough and lead to the catch of all species regardless to their sizes. The selected items are crab traps, cast nets, fence nets and hook lines.

A.1 Crab Trap

A.1.1 Catching technique

In nature, crab catch coincides with a lunar and a tidal cycle. During the new moon period, crab could be caught in darkness in habitats where crabs come out from their burrows to search for food, for males to chase females for courtship and mating. The reverse phenomenon was observed in the full moon period when crabs live in hidden places to avoid the being exposed in the light on the mudflat.

In addition, the spring tide is the best period to catch many crabs. Low value small fish and salted eels, are the favorite bait being used by fisher folk. A piece of bait is attached to the center of the trap which has two v-shaped openings for crab to get into the trap to eat the bait. Traps with bait are placed at the edge of mangrove forests along riverbanks and the sides of creeks and canals during spring tide periods. Fisher folk collect live crabs in traps when the tide falls. Canoes can then used to reach the trapping sites.

A.1.2 Design, local availability and price

Two types of crab trap are being used commonly. The first one is made of locally available bamboo while the latter is made of metal. Nets are perishable in saltwater after 4 months (bamboo) and 6-9 months (metal), but the price varies on the materials used.

Crab trap in folded form

Although the metallic trap is better designed and will prevent damaging of the claws, thus increasing the market price of the catch, its price is very high and cannot be afforded by all. Moreover, such traps might be stolen, or represent a greater loss in capital when washed away by the tide.

Local price for crab traps

Type	Availability	Price in MMK
Bamboo trap	Main Villages	300 - 500
Metal trap	Amar, Te Pin Seik	1,300 – 1,500

Most fishers do not know how to make a complete bamboo crab trap if raw materials are provided. However, some villages (Amar, Te Pin Seik) have reliable trap makers with experience and the corresponding skills.

A.1.3 Income generation and family consumption

Crab is a common and very popular cash commodity in the project area (1 harvest per year due to salinity rates) and the return is easily generated by any family irrespective of age and gender. As a consequence, a significant amount of income can be expected from using traps provided by the project.

Most of the catch is exported to international markets, and a huge proportion to the Chinese Yunnan market, whereas female crabs with eggs are sent to Taiwan in priority.

All marketable sizes are sold at local buying centers including undersize crab for rearing in captivity. NB: Trading of undersize crab (i.e. under 100 g) has been banned by the Department of Fisheries. Dead crabs or with soft shells are refused by the traders.

Crab fishers in the area at the moment use a numbers of traps in accordance with their affordability. Upon assessment, 14,675 crab traps are being used by 636 respondents. (23 average)

Fee for catch imposed by a major license holder is 8,000 MMK per annum.

Mean catch per working day per fisherman ranges from 3 - 7 pieces of mud crab which gives a return of 800 -2,800 MMK for fisher folk, depending on the number of traps.

In Amar Village, during a discussion with a key informant – Chinese middleman – a fisherman sells the catch of 6 persons for 2 days and 2 nights, each one with an average 30 traps. The total income generated will be shared to an amount of 5,000 per fisherman, i.e. 2,500 MMK per day (day + night) of work.

Little information is available on family consumption of catch because it's a cash commodity which can generate money income on daily basis. Flesh of crabs rejected by the middlemen is probably consumed by the fishermen, or used as baits.

A.1.4 Recommendations

- The cyclone stroke when eggs were being fertilized and it destroyed mangrove breeding areas. Although the catch is usually lower at this period of year (spring tide), the number of crabs seems to have significantly decreased and represents 30% of the same period last year according to some trappers, 50% according to some middlemen.

  In the assessment, it also seems that the number of crab fisher folk also increased since Nargis, with a number of paddy farmers now relying on crab trapping for income generation due to low yield and/or loss of paddy due to saltwater invasion leaving them with debts. We could thus easily identify over 2,000 households as beneficiaries matching the same criteria for selection.

  On the other hand, the catch is intimately linked to the market, and the peak season just passed (Chinese New Year) so prices are also down at this period of year, which will not foster intensive fishing. Also, the price of salted baits, eel preferably, is currently very high. (When there is a scarcity of salted bait, people cope with whatever is available: dog meat, chicken & duck intestines). Lastly, most fishermen will not use all traps immediately but 2 or 3 simultaneously and use the remaining ones progressively over the next months.

  As a consequence, our activities should consider a balance between the carrying capacity of the estuarine environment and the capacity of catch by fisher folk using numbers of trap in the project area per week/month. Reducing or not increasing the caseload is to be considered, as well as the targeting of the most remote areas where the gears are currently fewer, not the main villages. (Over 1,000 inhabitants).

- Trap makers in the selected village tracts should be contracted to make the total number of traps. Ahmar and Te Pin Seik for instance have reliable trap makers and inter-villages trainings on making of trap should be considered. These manufacturers sub contract the poorest households of the area, thus making them indirect beneficiaries of the project.

A.2 Cast Net

A.2.1 Catching technique

Usually fishermen cast their nets from onboard their canoe into a preferred fishing site. Then the cast net is gradually pulled back by pulling the main rope tied at the top of the net. The base line at the bottom of the net then closes by means of lead weights attached to the bottom line of the net. Thus fishes are trapped in the net.

To be sure of making a catch of fish or prawn at the fishing site, fisher folk spread bait before a cast net is thrown. Rice bran for bait for prawn is spread out before casting the net.

Cast net being thrown by a fisherman

A.2.2 Cast nets design and local availability and price

The type of cast net varies according to targeting of shrimp, prawn and fishes in accordance with mesh sizes. As mesh sizes vary according to local need, types of cast net which will be delivered to fisher folk should be categorized in accordance with types of fish people targeted in the villages' waterways.

Fish catch depends on mesh size

Common types of cast net being used in the project area

Type	Measurement	Mesh size	Lead weight	Durability
Shrimp	9 feet	0.5” x 0.5”	3 viss	3 - 4 years
Shrimp & Prawn	10.5 feet	0.5” x 0.5”	3.5 viss	3 - 4 years
Prawn	13.5 feet	0.75” x 0.75”	3.5 viss	3 - 4 years
Fish	6 feet	0.75” x 0.75”	4 viss	

Note: 1 viss = 1.63 kg

Local price for cast net ranges from 30,000 to 70,000 MMK.

Most fisher folk do not know how to net a cast net if raw materials are provided. Persons who can make netting of cast net are exceptionally few in the project area.

A.2.3 Income generation & family consumption

Mean catch is 1 - 2 viss per day during one tidal cycle especially on spring tide for shrimp which fetches 2,000 - 2,300 MMK, and 8,000 - 10,000 MMK for prawns per viss whereas assorted fish ranges from 2 - 3 viss with 600 - 7000 MMK per viss at the market price.

The tax per catch imposed by the major license holder is 1,500 MMK per catch per day, 10,000 MMK per tidal cycle and 180,000 MMK per annum if fisher folk prefer to take a one year license granted by the major license holder. Fees are also imposed generally related to catch and the nature of the rivers and creeks where different types of fishes live.

Low value fish are eaten locally while good marketable fishes are sold at the local buying station where they are kept chilled. Some fisher folk dry out good fish as the market price is triple that of raw fish or when special orders for dried fish is tendered.

A.2.4 Recommendations

- Types of cast net should be categorized into shrimp net, prawn net and fish net respectively.
- Cast nets should be provided only to fishermen who previously had them and know how to use them.

A.3 Fence Net

A.3.1 Catching technique

A Fence net is set up vertically along the edge of the mangrove forest in the riverside between mangrove bushes and waterways. Nets are stretched out and tied to poles erected on the mudflat. Fishes are trapped when the daily tide comes into the waterway. Fisher folk in canoes then collect fishes attached to the fence net when the tide falls.

A.3.2 Design, local availability and price

Only one type of fence net is commonly set up in the project area. Length of the net varies on the capability and money investment afforded by the fisher folks.

Common width of fence net is 12 feet with 6 - 7 years durability.

Fence net set up at the margin of mangrove forest

Local price for 600 feet fence net is 150,000 MMK.

A.3.3 Income generation and family consumption

Mean catch is 3 viss per working day, catches include small catfish, mullet, shrimp and prawn. Prices for fish are 700 MMK per viss for small catfish, 3,000 MMK for shrimp and sea bass, 4,500 MMK for tiger shrimp and 12,000 MMK for prawn respectively.

Low value fish are eaten and good marketable fishes go to local buying centers.

Fee for catch imposed by a major license holder is 30,000 MMK per annum.

A few buying stations give cash in advance to fisher folks in order to get fish back from them. Advance cash mostly includes imposed fee for catch if buyer is also a license holder.

A.3.4 Recommendations

- Fence nets should be provided only to fishermen who previously had them and know how to use them.
- A 240 feet long fence net should be delivered as planned.

A.4 Hook line (long line)

A.4.1 Catching technique

The structure of hook lines consists of many hooks on secondary lines attached to a main line. It is assembled to allow one major line to bring a number of individual hook lines together.

The line is stretched in water by knotting each end to a pole submerged in water in a creek or canal. Bait is then attached to the hooks before the primary line is set up in water.

Two water levels are used in accordance with the swim and feeding behavior of targeted fish. To catch fish whose habitat is the upper layer of water such as a giant catfish and a brackish water catfish, a hook line is knotted to a pole submerged in the water. Fishing for giant prawn and sea bass which swim at the bottom of the water channel, a hook line is attached to anchors in the water.

A.4.2 Design, local availability and price

Various types of hook line are used in accordance with targeted fishes and its habitat estuarine waters. Length of the line varies on the capability and money investment afforded by fisher folks.

Assorted types of hook sizes and long line being used by fisher folks:

Hook No.	Primary Line	Secondary Line	Target Fish
5	4 mm	1 mm	River giant catfish, sea bass
12, 13, 14	6 mm	4 stringed	Small catfish (*Nga-zin-yine*)
15, 16, 17, 18	3 mm	4 stringed	Prawn, shrimp
6	3, 4, 5 mm	4, 5, 6 mm	Estuarine catfish, brackish water catfish, eel
7	5 mm	2, 3 mm	Estuarine catfish, brackish water catfish, eel

Typical hook line on display

Local price for hook line ranges between 50,000 and 120, 000 MMK.

A.4.3 Income generation and family consumption

Prices for fishes are 1,000 MMK for estuarine catfish, 2,000 - 2,500 MMK for giant catfish, and 4,500 MMK for giant sea perch.

The fee for the catch imposed by the major license holder is 30,000 MMK per annum on fish hook line and 50,000 MMK per annum for prawns.

Advance cash is also given by buyers who are repaid partially by the fish catch sold by the fisher folk.

A.4.4 Recommendations

- It is important that care is taken in provision of hooks in various sizes to meet the needs of the fish folks as well as to match the hook size with the targeted species.