

Small Scale Fishermen in Rakhine State

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The fishery sector is important for Myanmar's economy. It constituted 7.6% of the GDP in 2009-2010, generated the fifth largest revenue (along with livestock) and employed 5% of the population (3 million people).¹ Most of the fishermen are found in Myanmar's coastal areas in Ayeyardwaddy Region, Mon State, Tanintharyi Region and Rakhine State. This paper focuses on small-scale fishermen who earn their livelihood from the Rakhine's coastline and marine resources.

Rakhine state is located in the Southwest of Myanmar, sharing borders with Bangladesh and Chin State in the north, Magway and Bago Regions in the east, Ayeyarwady Region in the southeast and a long stretch of coastal areas connected to the Bay of Bengal in the east. Rakhine are the largest group in Rakhine State, which is also a home to other smaller groups such as Chin, Mro, Khami, Thet, Dainet, Maramagyi, Kaman as well as Chinese, Indian and Bangladeshi decedents who describe themselves as "Rohingyas." A majority of the population (3,188,807) living in Rakhine are Buddhists, but there are sizeable populations of Muslims, including Rohingyas who are territorially concentrated in Northern Rakhine and constituted a majority in Buthidaung and Maungdaw townships and Chris-

¹Khin Maung Soe, *Trends of Development of Myanmar Fisheries: With References to Japanese Experiences*, The Institute of Developing Economies, V.R.F. Series, n433, February 2008, 2.

tians, particularly among the Chin and Mro.² There are villages located in remote islands that specialize on fishing in Rakhine State, but most of the fishermen in the coastal areas engage in farming to supplement their income.

This study uses the Sustainable Livelihoods Framework (SLF) to shed light on the precarious and dangerous situations of small-scale fishermen in Rakhine State where an estimated 43% of the populations relies on fishing or a combination of fishing or aquaculture, and agriculture. It describes how small fishermen cope with their daily challenges in the presence of increased scarcity of resources. The SLF is a tool used to understand communities' livelihoods by identifying their assets along the dimensions of social, human, natural, financial and physical capital. It also situates this analysis within the larger structural context, including laws, policies, practices and the social relationships between communities and political/business elites.

The Fishery Sector In Rakhine State

Fishery is an important economic activity in Rakhine state. Various species of marine resources, shrimps and crabs are captured and farmed in Rakhine's 344 mile-long coastal areas. Fresh water fishery and prawn harvest is carried out the Kalatan, Lay Mro, Naaf and May Yu rivers. The Rakhine Department of Fishery reported that approximately 750,000 people earned their living from fishery sector in 2010. According to the Rakhine Inquiry Commission report in 2013, however, only 4% of all families are engaged in fishery and livestock sector full-time.³ Therefore estimated 1.2 million residents (those employed in fishery-related business plus their family

²The Republic of the Union of Myanmar, *The 2014 Myanmar Population and Housing Census Report*, The Union Report, Yangon, 2015.

³The Rakhine Inquiry Commission, *Final Report of Inquiry Commission on Sectarian Violence in Rakhine State*, Yangon, 2013.

members) rely on fishery sector as a supplementary source of their livelihood in Rakhine State. The sector is the second largest revenue earner in Rakhine state and generated 5.1 million US dollars from official export in 2010-2011.⁴ Rakhine State is particularly known for hilsa and tiger prawn. In addition, Rakhine has the largest acreage of shrimp farms in the country. The data from Statistical Yearbook 2009, Livestock and Fishery Statistics (2008-09) would estimate the Rakhine contribution toward the total annual value of shrimp production and export earning in the country to be 12% whereas Dr. Nilar Myint Htoo estimates it at 18.84%.⁵ The contribution from the Rakhine State fishery sector to the national economy, compared to that of Yangon, Ayeyarwaddy and Tanintharyi Regions is relatively low given the poor road, transport and technology, and underdeveloped aquaculture activity in Rakhine State. The Rakhine Inquiry Commission noted,

the boats, nets and other equipment are outdated. Few boats have modern engines or equipment. The wooden boats, built according to traditional methods, are unsafe for straying far from the coastline, limiting the catch. This further hinders the development of the sector.⁶

Major areas of fishery activities in Rakhine state include (1) marine capture (fishery and prawn of approximately 32 different species) (2) aquaculture, mainly salt-water shrimp farming (“trap-and-hold”) (3) fresh water capture (fish, prawn

⁴Department of Fisheries, 2011 Report, Sittwe Rakhine, 8.

⁵Ministry of National Planning and Economic Development, Central Statistical Organization, Statistical Yearbook 2009, Livestock and Fishery Statistics (2008-09), Yangon. Nilar Myint Htoo, “Trade Liberalization and Impact on Fishery Sector in Myanmar,” (PhD dissertation, Institute of Economics, Yangon, May 2011).

⁶Rakhine Commission Inquiry, 2013, 33.

and crab) (4) processing, trading and transporting businesses and (5) export. Marine capture is the region's dominant activity, which is carried out in inshore and offshore areas.⁷ The 2008 constitution gives the central government control to manage offshore activities and regional government control over fishing activities that take place in inshore and inland areas. The Freshwater Fishery Law under the SPDC regime defined areas within 5 nautical miles of the coast as inshore zone and those between 5 to 200 miles off the coast as offshore zone with the areas beyond the offshore zone as Exclusive Economic Zone.⁸ Inland water areas include seasonal flood plains and permanent inland water bodies, such as main river systems, natural lakes, reservoir and seasonal flood plains. Under the military regime that staged a coup in 1988, licenses to catch fish in inland and inshore water fishing grounds areas were auctioned off to private individuals to manage, operate and impose fees for the use of these fishing grounds, known as a “tender system” in the region. Those who won the tender, usually better-off local elites, would then pass on the cost to small-scale fishermen in the form of license fees. This was a contentious issue in the SPDC era.

The Department of Fishery in Rakhine State reported in 2010 that 15,000 registered fishing boats, accounting for about half of the fishing boats in the country. The Department of Fishery in Rakhine State categorizes small, medium and large-scale boats terms of the size of the boat, numbers of people employed and the nature of fishing equipment used. Accordingly, a small-scale boat is usually a non-powered boat (or sometimes low-power motor) operated by one person using small nets, while medium and large boats have higher-powered motor (of about 500 horsepower) and larger or more sophisticated fishing nets. The larger boats are usually 50 feet high and

⁷Department of Fishery, 2011 Report, Sittwe, Rakhine, 2011.

⁸Htoo “Trade Liberalization,” 63.

are used for offshore fishing with nets that are between 100-500 feet and cranes for heavy lifting. The majority of fishing boats in Rakhine State, small and medium scale, are inshore fishing boats and most of them (11,286) are non-powered with “passive” fishing gears (gill nets, drift nets, long line and trap). The status of fishermen can also be further categorized according to the number of boats they own. Small-scale fisherman own a couple of boats, medium fishermen own the between 3 and 7 fishing boats, whereas large-scale fishermen own more than 7 fishing boats. Most inshore fishermen own their boats, whereas most offshore fishermen hire themselves out as workers, or use boats owned by wholesale traders.

Rakhine and Rohingyas fishermen make up a bulk of the populations in the fishing industry in Rakhine State. Prior to communal violence between Buddhists and Muslims (particularly Rohingyas) in Rakhine State in June 2012, there were a few better-off Muslims in Rakhine who owned and operated at least 5 fishing boats in the villages visited, and some of them had joint businesses with Rakhine fishery businessmen. The former were neither accepted as Myanmar’s ethnic nationality by the Myanmar government nor are they considered Bangladeshi by the Bangladesh government. The military which came to power in 1962 regarded these self-described Rohingyas as illegal immigrants and engaged in a series of campaigns to push out 100,000s of them. This sparked strong international criticism in the early 1990s and consequent inflow of international assistance to the areas.⁹ Rohingya probably constitute $\frac{1}{3}$ of the populations in Rakhine state but it is difficult to know the percentage of Rohingyas who are in the lowest rung of the fishery sector in the region. Prior to the

⁹For detailed information about the root causes of communal violence in Rakhine state, see Jacques Leider, “Rohingya: The Name, the Movement and the Quest for Identity,” in *Nation Building in Myanmar*, (Yangon: Myanmar Egress and Myanmar Peace Center, 2014). Rakhine Inquiry Commission.

violence in 2012, a few local residents estimated that Rohingya made up a disproportionate numbers of fishermen since Rakhine Buddhists have historically shunned fishing businesses, mostly for religious reason that prohibits the killings of living beings. Rohingyas were also more willing to take wages lower than the market rate, sometimes as low as 30 percent of those paid to Rakhine workers, work harder and take more risks.¹⁰ Rohingya fishermen seem relatively poorer partly because of their larger household size and official discriminatory practices against them.¹¹

Major inshore fishing activities are carried out twice a month during the wane and full moon in inshore areas. The Department of Fishery imposes a fishing ban between 45 days to 2 months during the closing season. During the closed season, fishermen find employment as daily wage workers, fire wood collectors, paddy farmers and crab trappers. Offshore fishermen, on the other hand, work 10 months a year between August and May during the open fishing season. This paper focuses on inshore and inland fishery, which is the main occupation of small-scale fishermen in Rakhine State.

Methodology

Materials presented in this paper are based on the author's observation, in-depth interviews and focus group discussions with fishermen in Rakhine State since 2011 and conversations with key informants who are knowledgeable about the situations. The study is based on fishing villages in two townships in Rakhine State. Pauktaw township in Sittwe district is located on an island offshore in the Bay of Bengal while the Mrebon township in Sittwe district is situated along the Mrebon-Minbra river. In both townships, Rakhine constitute the largest group of residents, followed by Chin, Hindus,

¹⁰Also see Rakhine Inquiry Commission Report, 2013, 36.

¹¹See Rakhine Inquiry Commission Report, 2013, 31.

Rohingya and Bamar. These residents rely on agriculture, fishery production, transportation and trading as their main source of income.

Approximately half of the populations in two townships under study engaged in both fishing and farming (including integrated farming) and 25% of them specialize in fishing alone (many of those living on the island); the rest specialize in farming. Different ethnic groups tend to specialize in different types of occupation. The majority of the fishermen were Rakhine (most of them Buddhist) and about 30% of them were Kamar or Rohingya. Only a few Mro or Khumi Chin work as fishermen. 90% of the Mro/Khumi residents engage in farming, hunting and extraction of forest resources in these townships.¹²

Daily Activities

Fishermen wake up in the early morning to prepare for fishing. They go out to the fishing grounds two times per month and each trip could last 8-10 days depending on the weather and the amount they caught. Sometimes they sleep in the boat near to their nets, which they have to carefully guard against stealing and cutting by other fishermen. They eat the food prepared by their family members or cooked on the boat. Some of them go out daily for squid and smaller fisheries. Generally, they return home when the volume of the catch goes down.

Every family member of the fishermen contributes toward the business. Boys who no longer attend school would usually accompany their fathers while mothers process fish. When they do not engage in fishing, fishermen repair their boats and nets. Sometime they collect the firewood along the river.

Fishermen earn money per trip, depending on the number of workers and the type of work they perform. There are between 5-10 fishermen in each boat depending on the size of

¹²Interview with a local businessman, Mrebon, March 2013.

the boat. Although the catch industry has been dominated by men, sometimes women accompany their husbands to assist them. The average wages of these workers in the area is about 1,000-1500 kyats per da, depending on the catch. On exceptionally good days can be as high as 5,000-15000 kyats. Some earn a standard wage, which is approximately 7,000 kyats per round for a regular worker and 12,000 kyats for the head fisher. Others get paid based on the catch. The owner of the boats would subtract the cost of petrol, food, alcohol, tobacco and allow them to keep what remains of the catch. Others are paid based on the percentage of the catch. The estimate income of these fishermen is between 30,000 and 50,000 kyats per month, well below the minimum poverty line set up by the World Bank. Fishermen sit at the lowest chain of the fish economy and are the most impoverished members of the community. In addition, the income of the fishermen is always unpredictable depending on the catch.

Local residents in Rakhine, including fishermen themselves, generally consider fishermen as poor and uneducated. They are the most marginalized members of the society, especially if they are Rohingya. About 99% of the interviewed, 10 women, 15 men and 20 young men and women from both fishing villages indicated that every fisher believed that they are “very poor.” During the interview they often used the word “poor, poverty, low class, uneducated, victim” to describe their living situations. Fishermen do not want their children to be fishermen. A few fishermen have tried to send their children to University in Yangon or Mandalay or to get vocational training for jobs such as mechanic, or driver. One fisher who is in his 50s with a son in Yangon said,

The fishing life is so difficult, so I sent my son to Kyaukphru since he passed grade four. It cost a lot for me to send my son to get good education. Now

he passed high school and is attending Law School in Yangon. I am very happy that I can change the life of my son's generation. But I am still fisher and my life will be end up with fisher life.¹³

The Sources of Fishermen's Poverty

Income earned by the small fishermen in Rakhine state is determined by international markets, technical know-how and skill, existing fishing stocks and fees levied on fisheries products. Fish is mostly consumed fresh locally, but export quality catches are sent to Yangon. Local processing focuses on less sophisticated methods like salting and drying. Poor quality and unsold fish are processed into dried fish, ngapi (fish paste), salted fish and animal feeds and are sent to Yangon's Bayin Naung wholesale center. Many of these activities are small-scale and home-based. Dried fish are sent to central Myanmar and upland remote areas, while non-processed chilled prawn and black tiger are exported to Bangladesh.

Lack of processing technology and skills has contributed to low quality fisheries and undermined the survival of Rakhine fishery sector. Rakhine fishermen simply keep fish on ice blocks to prevent them from rotting, or dry them for salted fish. Those who cannot afford ice see their products wasted. One fisherman said,

We don't know how to process and preserve with modern technology. We also don't have those things. We have the knowledge passed on to us by our father and grandfather. No one teaches us about how to preserve properly that export market

¹³Author's interview, 2013, Mrebon, March 30, 2013.

can accept our product. It doesn't mean we don't want to do it¹⁴

One trader said “Rakhine fishermen are not skillful in preserving fish. Fishermen in neighboring Bangladesh can fetch higher export price for the same type of fishermen because of their processing skills.”¹⁵ Sometime the products intended for external markets were rejected because of their poor quality. The Department of Fishery in Rakhine State estimated that 12% (28,425 tons) of the captured fisheries were wasted or turned into trash due to lack of post-harvest handling technology, insufficient equipment on the fishing boats, poor road conditions and lack of electricity.¹⁶

Poor road conditions, lack of electricity and expensive fuel have been mentioned as a major constraint in the fishery sector. It usually takes about 3-5 days to transport the products from Sittwe to Rangoon by boat, but it takes between 24-48 hours by road. Many of the products are wasted or judged unqualified/rejected due to the long transport hours between the harvest and final destination. The products that are exported from Maung Taw transit to Bangladesh however take only about 9 hours from Sittwe and 2 hours from Maung Taw and are usually sent fresh. Despite the shorter duration to Bangladesh, more fishery products are now being sent to Yangon for better prices.

Some relatively higher quality marine capture are sent to cold storage plants to be cut, cleaned and processed in chilled, frozen or dried forms and are exported to China, Thailand, Japan, Australia and EU via Rangoon sea ports through various means of transportation. Exporters have in the past processed

¹⁴Author's interview, March 30, 2013, Mrebon.

¹⁵Author's interview, April 3, 2013, Mrebon.

¹⁶Interview, Managing Director, Department of Fishery, Rakhine state, June 6, 2011.

(basic cut, clean and freeze) these fisheries in Sittwe and other ports and transported them through Rangoon for export, but the volume of export quality fisheries traveling through Rangoon have declined due to high transaction cost. Quite a few processing and ice plants in Sittwe were shut down by 2011 due mainly to high cost of operation (lack of electricity to operate the cold storage and ice plants, US sanction, dollars devaluation which reduced earnings from export by 40%, multiple and high taxes imposed along the roads from Sittwe to Yangon, particularly at Armt and Taungkok toll gates, poor road condition and expensive diesel. Many fishery products were reported to have been wasted or quality suffered due to poor road conditions, long hours of check at the toll gates and automobile breakdowns. The numbers of cold storage were reduced from 18 in 2005/6 and to 11 in 2010. A report by Rakhine Department of Fisheries in 2010 showed that only six (three in Sittwe) were in operation and the remaining are barely surviving and considering closing. The numbers of ice plants were reduced from 60 in 2005/2006 to 39 in 2010. Because of the decline of cold storage, the majority of the fishery products were increasingly sent fresh or chilled to a shorter destination to Bangladesh via Sittwe and Maung Taw. Export to Bangladesh was considered the last option as traders prefer Yangon market which has reliable weighing system (digital scale) and predictable market with relatively better prices. Bangladesh traders offer lower prices for their products and sometimes rejected between 10-50% of the products as substandard. Recently, however, more fishery products have been sent to Yangon market due to reduced transport costs following the elimination of toll gates in Armt and Taungkok.

Rakhine region has had limited access to cheap fuel, all of which is imported from Yangon, unlike other border towns

which can rely on cheaper fuel import from Thailand or China.¹⁷ A trader complained in 2011 that transportation costs from Yangon to Mandalay (a distance of 432 miles) was 50 kyats per viss whereas it cost 300 kyats per viss to transport goods from Yangon to Rakhine.¹⁸ Diesel cost 5000 to 6000 kyats per gallon in Rakhine in 2011 whereas it cost only 3000 kyats in Yangon. In 2011 electricity cost 400 kyats per unit in Rakhine and, 50 kyats per unit in Yangon. The government has recently offered a regular supply of electricity from Kyaukphru's Special Economic Zone at a lower rate of between 35-40 kyats per unit since 2014 but there is little prospect for the revitalization of cold storage due to the decline in fishery productions and the outflow of workers from the fishing industry to Yangon and neighboring countries.¹⁹

The third reason for the poor condition of the fishermen has been excessive fees and taxes imposed on fishing grounds and collecting gates.²⁰ Until 2012, traders must pay excessive taxes at two main border checkpoints in Ann and Taungok. Delay at checkpoints damaged their product quality and increase operation costs and reduced profits, the costs of which

¹⁷Juliet Shwe Gaung, *Myanmar Times*, August 8-14, 2011.

¹⁸The distance between Yangon and Taungup is 278 miles and the distance between Yangon and Sittwe is 512 miles.

¹⁹Author's Interview, U San Shan Maung, March 2016.

²⁰A medium inshore fishing boat, for instance, is subject to multiple taxes by different government offices. These include (1) township administration license tax, Dof license on boats and fishing implements (21000 kyats per year), (3) naval (about 1,000 kyats per catch plus some quantities of fish) (4) internal revenue (income tax at least 24,000 kyats per year), (5) tender (150,000 kyats for small boat and 250,000 kyats for large boat per year), (6) municipal tax of 7000 kyats (market tax and docking tax) per entry. A fisherman who sold a fish for 10000 kyats therefore is left with only 3000 kyats after paying 7000 kyats for docking fees and sale tax. Taxes were also imposed at toll road gates in Taungok on products that leave Rakhine. This high cost was passed down to the producers by offering them below the market prices. Because of the complaints from the fishermen, the tollgates taxes in fact were reduced between 50% and 75% in October 2011.

were again passed down to fishermen. The tender system, or the allocation/sale of “inland” fishing grounds (which includes both inshore and inland waters in Rakhine state) to private individuals who then collect users' fees from fishermen (the amount of which is set depending on the type of fishing nets and the nature of the boats) further plunge small-scale fishermen into deeper poverty. This system was introduced in Rakhine since 1993 as a way to generate funds for local military and administrative authorities. Fishermen face an additional financial burden as a result of the allocation (sale) of previously open fishing grounds to powerful and close associates of administrative authorities who then resold these fishing rights at inflated costs. These high transaction costs were passed on to the end users, that is ordinary fishermen, in the form of expensive annual fishing fees. The tender system was said to have benefited only a small portion of people, who may or may not be in fishing businesses, but were relatives and associates of government/military authorities. Some of these license holders impose direct fees on individual end users, while others divide up the plots, which were then passed on (sold) into two or three hands before it reaches the end users.

The tender system increased the cost of doing business as large businesses bid high prices to secure fishing rights per lot and attempted to retain high profit margin by over-extracting resources and charging high prices on subcontractors. Inshore fishermen and small-scale fishermen also argue that the system undermined the welfare of the majority populations and restricted poor residents from fishing for household consumption and small extra income. Local populations reported having to pay a fine of 20,000 kyats or having their fishing equipment confiscated when they were found fishing in private plots. Some complained of having to pay three separate fees to three fishing grounds or yay kwin that were controlled

by three different license holders. These yay kwin fees cost them up to 100,000 kyats per fishing ground or 500,000 to 600,000 kyats per year for three different fishing grounds, making up the largest percentage of the production cost of fishing operation.²¹ Some ordinary fishermen mentioned they paid about 500 to 800 kyats per day for the use of these private fishing grounds since they could not afford to pay for the monthly fees. Rakhine tender license holders often had to rely on the help of the local police for enforcement due to strong resistance.

A continuing debate and discussion in Rakhine State between the administration, elected officials and businesses and fishermen on the issue of fishing licenses have resulted in the introduction of two open fishing grounds by the Rakhine Minister of Agriculture and Livestock after U Thein Sein government came to power in 2011. This initiative has eliminated middlemen between the Department of Fishery and the fishermen, under which the inshore fishermen's association is now required to pay direct fees to the Department of Fishery, reducing the payment of individual fisherman by more than 10 times. For instance, fees that used to cost individuals 500,000 kyats now costs between 13,000 to 28,000 kyats depending on the types of fishing nets. The creation of two open common or fishing groups has generated the same amount of revenue that the Department of Fishery would have earned under the tender system (since Fishermen Association agreed to pay for the floor price set by the Department of Fishery), lowered the fees for the fishermen and allowed them unlimited access without restricting the numbers of people who could use it. Along with

²¹In Maung Taw and Buthi Taung townships, where Rohingya constitute the overwhelming majority of the populations, individuals who won the tender licenses and who were in prominent government positions (particularly DoF, Immigration, border security guard, Customs) are predominantly Rakhine Buddhists.

this new development, the elimination of various fees at the Armt and Taungok checkpoints, which reduce expenses to transport goods to Yangon have helped to lower costs.

While some argue that the ending of tender system has increased the rate of depletion of marine resources since individuals intensify efforts to catch fish due to open and unlimited access, others observe that this new policy has also instilled a sense of responsibility by Rakhine fishermen to collectively preserve fishing stocks.²² A few people credited the Rakhine State Freshwater Fisheries Law that was passed in 2014 by the Rakhine state parliament which recognizes the rights of communities to establish community fisheries organizations and associations to manage the resources as a positive measure to sustain fisheries resource.²³ However, many challenges, particularly overfishing from commercial operators that are trawling inshore, remain.

Depletion of Marine Resources

Marine capture activities were intensified following the new liberalization policy in the 1994 which allowed private investors, particularly foreign offshore boats with high powered capture capacities, to work in Myanmar's relatively unexplored ocean. Fishery stocks have declined since then. The Department of Fishery decided not to issue new license on offshore boats in response to a report on the alarming rate of marine resources depletion.²⁴ Local fishermen acknowledge declining fishery stock as one of the main challenges to their livelihood, but devised a wide variety of strategies to deal with

²²Conversation with local businessmen and Rakhine state elected members of parliament from Rakhine state, 1 June 2015.

²³“Tat Lan partners promote community fisheries, local knowledge in the 2014 Rakhine State Freshwater Fisheries Law” Available at <http://www.lift-fund.org/news/tat-lan-partners-promote-community-fisheries-local-knowledge-2014-rakhine-state-freshwater>

²⁴*Weekly Eleven*, 6, July 13, 2011, 5.

the challenge. Their immediate response to the growing scarcity of resources has been to intensify the capture by using prohibited tools (such as chemical and poison) in prohibited areas and seasons.

Many inshore boats have increasingly resorted to “baby trawl,” a prohibited fishing boat/net in inshore waters, while small-scale fishermen rely on explosive implements (such as weed killing poison and electric shock) in desperate attempt to make the most out of the shrinking resources. Baby trawl is said to exacerbate declining resources because it tends to capture small fisheries unqualified for export, leading to waste, destruction of seaweeds and plantations and disruption of the spawning activities and fish habitats. It destroys other smaller nets operated by small-scale (non-mechanized) fishermen. One of the fishery officers said,

Nowadays, we all from fishery sector are suffering the effect of trawlers. Trawlers are very dangerous fishing gear and we want every fisher to stop their use. They destroy every creatures living on the sea bed and dwelling place for fish to grow again. We feel powerless to stop this practice. So we are folding our arm and looking at the destruction.²⁵

The tender system has also contributed to the decline in fishing stocks. The need to recuperate fees forces small-scale fishermen to intensify their fishing activities. One poor fisher said,

We have never met the person who won the exclusive rights over fishing groups. If I meet them in person, I would like to tell them about our situation. The fishing ground fees have increased,

²⁵ Author’s interview with Manager, Mrebon Department of Fishery, March 22, 2013.

but the catches have decreased. The only option is that I have is to work extra hours until I can collect the right amount of fisheries.²⁶

Fishermen also fished during the official closing closed period between June and July. According to a fisher from Pauktaw, “We fish during the closing season. If government creates job opportunities during closing period, I guarantee that fishermen will not breach the law. Now we have no other alternative jobs and no other way to fill our stomach and mouth.”²⁷

The Department of Fisheries has the authority to limit fishing grounds, fishing periods, methods, net size, and catch volume for the fishing rights operations, but has limited resources, personnel, capacity, and effective monitoring system. The Department of Fisheries has a total of 1829 staff over the whole country, managing the welfare and livelihood of over 3 million in the country.²⁸ This can be compared with over 10,000 staff in each of Forestry and Agriculture departments (the latter department, however, theoretically serves 60% of the population). Rakhine Department of Fisheries has 115 permanent staff and 66 part-timers which, according to a Yangon based mid-level Department of Fisheries official, should be increased three times the current size to be able to effectively manage the existing workload. Consequently, the Department of Fisheries has to delegate monitoring and enforcement of fishing activities to the Myanmar navy and coast guard which also lack resources and capacity to monitor activities along the long stretches of coastal areas and are manned by underpaid and corrupt personnel. There are cases where these under paid and underfunded Department of

²⁶ Author’s interview, Pauk Taw, March 10, 2013.

²⁷ Author’s interview, Pauk Taw, March 10, 2013.

²⁸ Nilar Myint Htoo, 43. Department of Fisheries, 2010, 3.

Fisheries departments accepted payments for the use of prohibited instruments and fishing activities during the open and close seasons.

The other source of environmental destruction in Rakhine area is caused by trap and hold shrimp farming practice in the region (more generally called “extensive shrimp farming”).²⁹ Trap and hold shrimp farming is different from traditional catch activities but it affects the catch industry to the extent that it obtains baby prawn by trapping them from the sea. Rakhine state has the largest acreage of shrimp farms in the country, which now face similar problem of declining productivity and production. The shrimp farming was introduced under the military government to increase state revenue and budget for local military. The Rakhine military commander encouraged paddy farmers and fishermen to build shrimp ponds. Fishermen reaped huge profits during the initial years of the business. The number of shrimp farms increased every year mainly from converting paddy fields into shrimp ponds. Expansion of shrimp ponds also involved cutting mangroves that deter from baby shrimp to come in the pond. Moreover, the shrimp pond adversely affects rice fields that were now inundated with salt water. Fish can no longer lay egg in what used to be in mangrove forests.

Though the sizes vary, the majority of the shrimp farms are huge (each farm has 100 to 200 acres) and their numbers have grown until lately with financing mostly from Bangladesh. Farms are generally owned by richer persons from the village or by outsiders and are commonly located on the bank of a stream surrounded by an embankment with a

²⁹Louis Lebel, Nguyen Hoang Tri, Amnuay Saengnoee, Suparb Pasong, Urasa Buatama, and Le Kim Thoa. "Industrial Transformation and Shrimp Aquaculture in Thailand and Vietnam: Pathways to Ecological, Social, and Economic Sustainability?" *Ambio* 31, no. 4 (2002): 311-23; Jessica Blythe, Mark Flaherty, and Grant Murray, "Vulnerability of Coastal Livelihoods to Shrimp Farming: Insights from Mozambique." *Ambio* 44, no.4 (2015): 275-284.

drainage system that trap natural baby prawn from the ocean during high tide in the spring and raise them with little or no feed for a period of about 3 and half month. The mature shrimps are filtered and harvested as they attempt to make their way toward the ocean along with the receding tide, which occurs two cycles per month. Such practice, which constitutes a major portion of salt water prawn breeding (101,945 out of total 150,000 acres in 2010) is known as traditional “trap and hold” method or extensive system based on the construction of large open holding area (the size however varies between 2 and 100 acres per holding area) through destruction of mangrove forest areas. This practice has adverse environmental consequences as farms take baby shrimp from mangroves, interrupting the spawning of shrimp in natural environments and reducing the catch for capture fisheries. As a result of these and the spread of disease, as growth in shrimp farming has slowed so has the profit margin of the shrimp farmers.³⁰

After two decades of growth in the industry, the fishery sector (both marine capture and aquaculture) has begun to witness a gradual decline in production and productivity despite desperate effort by individuals to intensify capture through the use of prohibited fishing implements in prohibited zones and seasons and despite the government’s decision not to issue new licenses to offshore fishing boats. Enforcement against illegal fishing has largely failed as poorly paid and understaffed civil servants engaged in a myriad of corruptive networks as a way to fund themselves.

Shocks are another factor that have affected the precarious living situation this very highly volatile region. Two main shocks that affected the region are communal violence and extreme weather that have undermined the livelihood of

³⁰Interview with shrimp farmers in Sittwe and Pauk Taw, Rakhine State, June-July, 2011.

poor fishermen in the region. Communal violence in 2012 affected the industry to the extent it restricts activities of Rohingya fishermen who have been confined in camps.³¹ Fishing activities have slowed down, leading to price hike in the region. The shrimp industry was also hard hit by the Giri Cyclone that hit the some of the Rakhine area in 2010. It was estimated that 50,000 acres of coastal aquaculture ponds were damaged.³²

How Do Small-Scale Fishermen Cope with Their Precarious Living Conditions?

The income of fishermen is not sufficient or predictable, so they must supplement their income with other activities to feed their families. Apart from fishing, they glide along the river to cut and collect the firewood from mangrove forests for family consumption and sale. Firewood is in demand in region since they do not have electricity for cooking and drying fish. The price of the firewood varies depending on the season and the availability of forest resources. For instance, the price of firewood usually increases in rainy season due to higher demand. Some fisher families pile up the firewood in summer and sell them back in rainy season. The average income from selling firewood is about 15,000 kyats per month. Some fishermen also trap mud crab along the swamped covered areas by the river. Some fishermen also work in the rice farms especially in areas that have relatively even and large fields. Most of their rice paddies are small, 1–3 acres. However, they have to build embankments to prevent sea water from flooding their fields. They usually grow salt-water resistant rice strains. Others are sometimes employed as daily wage farm workers.

³¹Rakhine Inquiry Commission, 30.

³²Joffre Olivier and Moe Aung, “Prawn Value Chain Analysis, Rakhine State,” LIFT Project, 2012.

Fully utilizing family's members' labor is another common strategy to expand their income. The average family has five to seven members. All the members have to contribute toward the family's daily income and are assigned different tasks in accordance with their capacity and experiences. The household head is usually the husband or father, who usually engages in outside activities, such as fishing, trading, carrying fish to the collectors' station and attending village meeting. Men are appointed as spokespersons for their families and are found in every village meeting to represent their family and community.

Women manage all the domestic activities such as cooking, babysitting and managing budgets. Some women run home business to generate income. They sell basic consumer items and miscellaneous things. Some village alcohol shops were managed by women. Women also play a role in livestock raising activities. Women role in processing of fish is very important; processing fish and prawn are value added for the whole products. Children also have to contribute toward family economic activities during afterschool hours. They are assigned small errands and light tasks, such as fetching water, cooking, or taking care of their siblings, to assist their parents. Children often place carry mat or bamboo pole to assist their mothers in fish drying process. Sometimes boys accompany with their father in fishing. They sort fish.

Migration is another common coping mechanism. Some leave their villages to find temporary employment, while others left permanently for better economic opportunities. Many of them traveled to other parts of Myanmar or to neighboring countries.

The survival of the fishing industries and of small farmers has been maintained by the patron client relationships. Fishermen and collectors have interdependent interrelation-

ships but the nature of the relationship varies. Until 2012, the patron-client relationships extend beyond ethnic boundaries. It was not uncommon to see Rakhine serving as patron and Rohingya as clients. In some situations, the collectors rely on fisherman for regular supplies of fisheries, while the fishermen rely on collectors for fishing equipment, gas, fishing grounds and emergency loans. These patrons, many of whom are collectors, creditors, or boat owners, are responsible for weather-related losses and destruction. Before 2014, they also paid the tender fees of the fishing ground and allocated the fishing ground to the fishermen. In return, the fishermen agree to sell the fish to their respective collectors at low fixed prices. There are 3 to 5 village level collectors in the village, each of whom has 20 to 30 fisherman clients.

Lenders or patrons, who could be collectors, wholesalers or exporters, usually get repayment through 20-30% of the all the captures and the right to buy the capture (including dried fish, dried prawn) at lower than market prices. The amount, interest rate, repayment schedule and timing of loan, however, vary depending on the sources of credit and the nature of the relationships between creditors and farmers. In capture fishery, some fishermen obtain capital from money lenders usually for a period of 10 months and the interest rate usually runs between 2 and 5% per month for those with collateral (mostly gold) and between 10 to 20% for those without collateral.

Some families have become indebted because they cannot repay their debts. One fisher told the author, “We are making money for our collectors. We don’t have anything at the end of the day. But our collectors are getting rich and rich. We are just the slaves for them.”³³ A few fishermen mentioned that the patrons deliberately keep fishermen indebted even if the latter

³³ Author’s interview, Mrebon, March 20, 2013.

are able to repay the money in order to make sure that the captured fisheries are sold to them. Despite these negative attitudes toward their patrons, most fishermen I have talked to tend to appreciate the beneficial role of the patrons.

Some fishermen, such as those in Mrebon township which is located between Sittwe and Kyaukphru, enjoy greater bargaining power over the collectors and wholesalers since they have a choice to send their products to Sittwe or Kyaukphru. Local collectors in these areas tend to be more accommodating and flexible toward the needs of the fishermen. In some extreme case, creditors take over the possessions of fishermen when they default, but in most cases, creditors usually accommodate the needs of fishermen by extending the period of the loan especially in cases of emergency and shock. One collector said,

We have to invest our time, our money in this fishery business. We need to pay for transportation fees. If we experience bad weather, our inventory rots. We paid for their fishing ground. On the other hand, we support fisher's family with some financial assistant. We just help them. Nevertheless, they were very happy to get money from us, but when the time to pay back money, they are complaining all the time. We already have agreement. We don't exploit them.³⁴

Fishermen also have multi-string relationships with collectors. They rely on collectors for emergency loans for health issues, social affairs, religious affairs and education of their children. One of the fishermen said, "Our patron (village level collector) is very important for us. We have to count on him when we need something. We usually do not have cash

³⁴Author's interview with a wholesaler, Pauk Taw, 15 March 2013.

with us all the time. So we can get loan from village level collector. We pay him back after we have sold our catch.” A village collector said “I have some fishermen client who sell their fish to my shop. I help them in financial need and they give me loyalty in return.”³⁵

Conclusion

Small-scale fishermen are the most basic building block and occupy the very bottom of the fishing economy. However, fishermen have increasingly faced precarious and unpredictable living situations. They have been adversely affected by a market that they have no control over, depletion of natural resources, poor infrastructure and processing technology and political turmoil. They have developed a variety of strategies to deal with challenges, by maintaining a stable relationship with their patrons as an insurance against crisis and emergency, using family labor, borrowing, and working additional jobs.

The situation in Rakhine state is also made worse by ongoing communal hostility and tension in the areas. It remains to be seen whether the new democratically elected government in Myanmar is able to improve the situation in such a way that would create more favorable environment for the survival of fishermen and the fishing industry.

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³⁵ Author’s interview, Mrebon, March 28, 2013.

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