

The Tiger's Mouth

By enacting new legislation and policies on tenure rights, labour rights and fishing rights the unique *kyarr phong* fishery in the Gulf of Mottama, Myanmar, can be substantially improved

K*yarr* in Burmese means 'tiger' and *kyarr phong* literally means 'tiger mouth net'. It is the most abundant fishing gear in the Republic of the Union of Myanmar after bottom trawl, purse-seine and drift-net. The *kyarr phong* fishery—a bag net attached underneath a bamboo raft, both anchored together—is a unique fishery, an adaptation of stow-nets and stow-boats, originally used in large rivers for catching small prawns. It is now practised in the Gulf of Mottama (previously known as Martaban), between September and May, at a distance between 14 to 40 nautical miles from the low-water mark. The period June-August is the closed season.

Ayeyarwady, Salween and Sittang drain into the Gulf, carrying huge loads of sediment. The Gulf, according to a 2004 paper published in *Marine Geology*, is one of the largest mud belts in the world's oceans, measuring over 45,000 sq km during spring tide and about 15,000 sq km during neap tide. The sediments are loaded with minerals and nutrients favouring abundant fishery resources, comprising many tropical species. The mud belt, according to the National Institute of Oceanography (NIO), India, moves in sync with the tidal cycle every 14 days. The *kyarr phong* fishing operations are believed to be carried out in the 150-km belt along the edge of the turbid zone, roughly in an area the size of Belgium.

Although *kyarr phong* in the rivers of Myanmar have been reported, there seems to be no written account of *kyarr phong* fishery in the Gulf of Mottama. This fishery in waters beyond the 15-m isobath is believed to have started in the southwest of the Gulf of Mottama, off Pyapon, Ayeyarwady Division in the early 1970s. It was practised initially for a period of just two months a year. It is now a nine-month operation. In the early 1990s, *kyarr phong* owners from Pyapon started moving to the southeast of the Gulf, off Mawlamyine, in Mon State, where the fishing grounds are more gradual and better suited for *kyarr phong* operations. The movement of owners was further intensified post-Nargis since the impact of the cyclone was less pronounced in Mon state. There are between 5,000 and 10,000 bamboo rafts associated with this fishery currently in operation.

The bag nets associated with *kyarr phong* are fabricated from

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In spite of operating at such distances, these rafts fish entirely within the internal waters of Myanmar. The straight baseline—extending 222 nautical miles and the longest notified straight baseline in the world—closing the Gulf of Mottama between Alguada Reef (Pathein Light) and the Western Point of Long Island is over 150 nautical miles away from the apex of the Gulf. *Kyarr phong* came to the notice of the world when thousands of fishers perished on these rafts at sea in early May 2008 during Cyclone Nargis, at wind speeds of over 100 knots.

The Gulf of Mottama is shallow (less than 30-m depth), turbid and dominated by tides. The rivers

This article is by **Yin Nyein** (helloyinyein@gmail.com) Program Manager, Delta and Coastal Programme, Network Activities Group (NAG), Myanmar and **Sebastian Mathew** (sebastian1957@gmail.com), Executive Secretary of ICSF

polyethylene. Each bag net is about 20 ft to 30 ft long, with 0.25-inch mesh size (the legal mesh size for bag nets is 2 inches). It is operated attached beneath a 40-ft long and 15-ft wide unpowered raft made of 80-120 bamboo poles—totally biodegradable. The rafts are designed to withstand tropical storms of up to 45 knots wind speed. The rafts are towed to the fishing ground by a global positioning system (GPS)-enabled carrier boat, powered by a 100-hp Honda engine, once every year, in September. They are anchored at designated places at depths of 10 fathoms (nearly 20 m). In May, at the end of the fishing season, while the bamboo rafts are abandoned at sea, the fishing gear is taken back to shore to be reused in the next season.

Owners of *kyarr phong* units do not participate in fishing, although some are involved in fabricating bamboo rafts. They are, however, involved in deciding the fishing spots. All of them are members of various *kyarr* associations. All operations in this fishery along the value chain are undertaken by hired workforce. Towards procuring labour, an advance payment system is in place (normally, five months' wages) to fishers as well as to women fishyard workers who shell dried shrimp.

The most productive days for *kyarr phong* fishery are the sixth to ninth days and the 12th to 15th days before, and the sixth to ninth days and the 12th to 15th days after, the full moon. The bulk of the harvest is thus taken during 144 days in a fishing season of nine months. Sixty-four days during September and December, and 16 days in the month of April, are particularly considered the best fishing season. (Interestingly, September-December is the season when surface currents in the Bay of Bengal are moving counter-clockwise).

When it comes to the fishing operation, the bottom panel of the bag net is anchored to the sea floor together with the raft. The top panel is attached to the raft. The bag net mouth is held vertically open against the tide (the tidal range during the spring tide is nearly 7 m and during

neap tide it is nearly 3 m)—like the mouth of a tiger. The net is emptied every six hours or so from the cod end right beneath by drawing it onto the raft. The bag net site is changed two or three times during a fishing season.

About 10,000 tonnes of fish are reportedly harvested in this fishery every year. The mainstay of *kyarr phong* fisheries is the rich shrimp resources that are gathered in the bag net, boiled using mangrove wood and dried on the raft. In addition to shrimp, Bombay duck, pomfret, grenadier anchovies, ribbon fish, seabass, *hilsa* shad, trevally and several other species are harvested. The carrier boats take the boiled and dried shrimp, iced high-value species like seabass and *hilsa* shad, along with others to the landing sites, several times a month. *Kyarr phong* owners sell boiled and dried shrimp to dry-fish merchants for export to China, Malaysia, Thailand and Singapore after shelling it using women's labour. Other species are also exported or sold in the domestic market. Shrimp wastes are converted to pelleted feed for export to Vietnam. *Kyarr phong* operations are believed to be very profitable for fish traders and owners.

The carrier boats that tow the rafts to the fishing ground and transfer the harvest from the rafts to landing sites also bring provisions, ice,



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mangrove wood and water to the anchored rafts, several times a month. Officially, there are about 349 bamboo rafts for operating *kyarr phong*. But according to U Han Tun, Chief Executive Officer, Myanmar Fisheries Federation, there are between 5,000 and 10,000 such rafts and bag nets in

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operation, along with 600 to 1,200 carrier boats. A raft and bag net together would cost about five million MMK (US\$4,000)—two million MMK (US\$1,500) for the raft and three million MMK (US\$2,500) for the bag net (2016 prices) (1,200 MMK is equal to a US\$).

All *kyarr phong* units are expected to pay royalty on marine fisheries under Schedule Five, Myanmar Constitution (2008) to the Union/Region/State government. This includes water transportation tax, fishing gear tax, fresh fish tax and income tax. The carrier boats, depending on their size and area of fishing, are expected to pay a licence fee. If small and fishing in the inshore area (from the low-water mark to 10 nautical miles), a boat, on the one hand, has to pay 15,000 to 30,000 MMK (US\$12.5 to US\$25) as annual license fee to the Region/State government. Large boats, on the other hand, fishing in the offshore fishing area (the area from the 15 isobath in the internal waters out to the limit of Myanmar's exclusive economic zone or EEZ) have to pay an annual licence fee of 100,000 to 300,000 MMK (US\$80 to US\$250) per boat to the Union government.

The rafts are normally in clusters of eight that operate in a fairly labour-intensive manner. Each cluster and its carrier boat employ about 40 fishers—mostly Buddhist Burmese in origin. A raft in the same cluster is at a minimum distance of 100 m from other rafts. A minimum distance of

three nautical miles is maintained between different clusters.

There are about 20,000 to 40,000 fishers at work on rafts and another 4,000 to 7,000 workers working on carrier vessels. Excluding women fishworkers engaged in fish processing on land, *kyarr phong* employs a maximum of 50,000 fishers—all men and mostly unskilled. More than 50 per cent of this workforce comprises internal migrants. Each raft has about four workers living almost continuously on it during the fishing season of nine months. The fisher in charge of the raft is called *oo si* and he is assisted by *kyan kyin lote thar*, a skilled fisher and two *lote thar*, or unskilled fishers. (On some rafts the crew size is three, especially in the Mon state). The cluster of eight rafts and associated gear form a unit under a skipper called *oo si choke*, or chief of the unit, who is stationed on the carrier boat. He supervises the operations of the rafts in his cluster and, sometimes, even supervises an additional cluster. While the unskilled workers are reportedly from the dry zone, spread across Sagaing, Mandalay and Magway Regions, the skilled workers and supervisors are reportedly from the delta region of Myanmar. The age of workers is stated to range between 18 and 56 for men and between 18 and 40 for women fishyard workers. About half the population of unskilled workers have no prior exposure to marine fishing.

Basic salary

Regarding payment, a *lote thar* and *kyan kyin lote thar* are paid a basic monthly salary of about 50,000 to 60,000 MMK (US\$42 to US\$50). The *oo si* is paid 60,000 to 70,000 MMK (US\$50 to US\$58). The fishers, over and above wages, also receive a 10 per cent bonus based on the quantity of shrimp processed on the rafts, especially if it is above a certain threshold. Together with commission, these fishers earn between 120,000 to 130,000 MMK (US\$100 to US\$108), per month. The *oo si choke*, however, receives between 500,000 MMK to

700,000 MMK (US\$416 to US\$583) per month in payment (as of November 2016).

There is radio communication between *oo si choke* and the cluster of rafts. The *oo si choke* also keeps in touch with owners over a mobile phone, and owners, in turn, are in contact with dry-fish traders in Yangon. Although working continuously in offshore fishing grounds for nine months, there does not seem to be any protection afforded to fishers on these rafts. Existing labour laws do not apply to fishers. The *kyarr phong* owners issue identity cards to fishers. Until recently there was no written contract of work but, of late, annual written contracts are drawn with fishers and fishyard workers. There is no off-season allowance for workers. Although exposed to tropical storms and cyclones, fishermen receive no training in sea safety. Many fishers on rafts do not even know how to swim, nor are they supplied with life jackets or lifebuoys.

After taking an advance on wages, some migrant fishers have been reported to have deserted from the *kyarr phong* without completing their term of employment. Other than the *oo si choke*, anyone can desert. The frequency of desertion has increased and is in tandem, on the one hand, with a fall in labour supply to precarious *kyarr phong* operations, post-2008 Nargis, and on the other hand, with an increase in the number of *kyarr phong* units, especially in the Mon state, in response to good shrimp harvests after the cyclone. Shortage of labour has made it easy for the runaways to find work on rafts under a new ownership. The owners also find it difficult to aggregate sufficient number of workers at the beginning of the fishing season. In fact, most of the *kyarr phong* owners have a different set of migrant workers each season. Sea safety is further compromised due to desertion because the owners fear that workers, if supplied with sea safety equipment, will escape. Desertion from work place is not only confined to fishing operations,

but also to fishyards processing *kyarr phong* landings. In some yards, additional fortifications are made to prevent women workers from running away.

Established owners of *kyarr phong* are of the view that there should be no further addition of units since there are already too many at work. Although there are some fears of declining catches in Pyapon, there are no such fears in Mawlamyine where the owners are of the view that “the deep pools in their undulating fishing grounds are for fish and the shallow grounds are for fishers”. These pools provide sufficient protection, in their view, to breeders and juveniles.

Suggestions for improving *kyarr phong* fisheries include extending the closed season from three months, replacing mangrove firewood with other sources, and promoting value addition and further diversification of export markets for dry shrimp. From a sea-safety perspective, however, the annual fishing season can definitely be shortened by a month from September to May to September to April. The month of May, according to the Myanmar Department of Meteorology and Hydrology—based on analyzing landfall of cyclones between 1887 and 2005—is the month with the highest number of cyclones crossing the Myanmar coast.



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From a socio-ecological perspective, the *kyarr phong* fishery is welcome since, unlike bottom trawling, it is a passive, labour-intensive, unpowered fishing operation, which does little damage to the sea bottom and does not cause destruction of marine biological diversity. Considering the shortage of labour in this fishery, the number of units, however, can definitely be scaled down to better utilize the available workforce.

From the perspective of decent working and living conditions on what is manifestly a hazardous work environment, there are concerns with regard to meeting minimum requirements for work on a raft continuously for eight months (minimum age, medical examination, basic training in sea safety, etc.), conditions of work (inclement weather, cyclones, etc), accommodation and food, occupational safety and health protection, and medical care and social security.

Improving conditions of work, including enhancing wages and incentives, providing better conditions of life on rafts at sea and more frequent access to land, and imparting training in sea safety in line with good practices can indeed mould a responsible workforce and arrest the issue of desertion from the workplace.

A comprehensive co-management approach to *kyarr phong* by enacting new legislation and policies on tenure rights to the internal waters of the Gulf of Mottama, combined with interlocking rights and duties in relation to work in fishing, could assist in integrating sea safety and decent work into a new framework for conservation and sustainable use of fisheries resources. It could very well be based on the Voluntary Guidelines for Securing Sustainable Small-scale Fisheries in the Context of Food Security and Poverty Eradication; the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security and the Work in Fishing Convention, 2007. Such a framework can promote responsible fisheries and labour, and protect the lives and livelihoods of thousands of fishers engaged in the precarious *kyarr phong* fisheries in the Gulf of Mottama and their families in the hinterland.

For more 

[iucn.org/news/gulf-mottama-navigating-muddy-waters](https://www.iucn.org/news/gulf-mottama-navigating-muddy-waters)
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