



The Study of **COVID-19** Effects on the Fisheries Sector in the Gulf of the Mottama



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Cover Photo: Inland fisheries in Mandalay Region. (Photo: Aung Kyaw Tun)

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Network Activities Group

Network Activities Group (NAG) is a National Organization which started working in Myanmar in 2008. NAG is implementing several projects on Social Economic Development, Rural Development, Environmental Conservation, and Community Based Development.

HELVETAS Myanmar

HELVETAS Myanmar is an International NGO which started working in Myanmar in 2016. HELVETAS Myanmar is implementing development projects included Sustainable and Inclusive Economy, Skill Development and Education as well as Governance and Peace.

Myanmar Development Network

[Myanmar Development Network](#) (MDN) is a social organization which established in Myanmar in 2015. MDN is doing development consultancies in the country through providing social and professional services in policy analysis, research, evaluation, training, and networking.

The Gulf of the Mottama Program (GoMP)

The Gulf of the Mottama Program is started in 2015 with two phases of implementation which is funded by Swiss Agency for Development Cooperation (SDC).

The report used below graphic to represent as Two Study Sites, Bago Region and Mon State:

Bago Region



Mon State



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EXECUTIVE SUMMARY

The global pandemic COVID-19 has rapidly spread around the world with catastrophic impacts on social and economic.¹

The pandemic, as an unprecedented crisis, is rapidly altering the development context of Myanmar and threatening community development. The crisis has become far more than a health crisis. It is a multifaceted human crisis affecting societies and economies.² The short-term and long-term effects of COVID-19 may lead unpredictable vulnerability of small-scale fishers and coastal communities.³ Government of Myanmar has prepared a system-wide response to the Pandemic and has been trying to minimize unexpected risks and threats in food production.⁴

In Myanmar, there are 3.2 million people employed in fishery and aquaculture sector.⁵ Economic growth of the country is projected to drop from 6.8 % in FY18/19 to 0.5 % in FY 19/20. Myanmar Government has released the COVID-19 Economic Relief Plan (CERP) in April 2020 including tax relief, credit to business, food and cash provision to households and response coordination. In September 2020, Government has developed COVID-19 National Response and Recovery Plan with comprehensive measures to address short term, medium term and long term needs.^{6 7}

International development partners have contributed about \$2 billion for the implementation of the CERP quickly.⁸ (\$50 million by World Bank⁹, \$25 million by EU¹⁰, \$150 million by ADB provided \$150 million loan¹¹ to boost country's economy targeted for SME, tourism, transportation, logistic and supply chain services. The Ministry of

Planning, Finance and Industry of Myanmar has set up a 100 billion kyat (equals to \$75 million) as emergency loans for all sectors.

Industrial production of the country is expected to contract by 0.2 % in FY 19/20 as restrictions of access to labour and supplies of the inputs. Travel bans continue negatively impact upon wholesale and retail trade, service industries, and exports are expected to remain weak until 2021. Tax revenues are projected to decline by 6.0 %.¹² A negative growth of between – 2.4 to – 1.1 % is forecasted for agri-food system GDP in 2019/2020 (IFPRI 2020).

Key Findings

COVID-19: A Crisis within a Crisis for fishers?

COVID-19 created catastrophic economic losses and social stresses to the people, mostly to the vulnerable population who are working as small-scale fishers and coastal fishing communities in the Gulf of the Mottama. The pandemic caused social burdens to them in food shortage and food crises together with economic losses and lack of income. The most affected population are marginalized, small-scale fishers, mud crab fishers, workers in post-harvest, workers in the processing factories, workers in fishing boats, rice fish growers and women small-scale sellers in local markets and their communities.¹³

Low-income families faced lack of food due to reduced incomes and jobs opportunities

¹ WHO, 2020.

² UN, Covid-19 Response Plan of Myanmar, 2020

³ World Bank, 2019.

⁴ FAO, 2020. COVID-19 impacts on small-scale fishers and aquaculture in Myanmar.

⁵ Interview with Secretary of MFF, Bago Region.

⁶ <https://reliefweb.int/report/myanmar/myanmar-covid-19-national-response-and-recovery-plan-education-sector-may-2020>

⁷ UN, 2020. Myanmar Humanitarian Response Plan.

⁸ <https://www.irrawaddy.com/specials/myanmar-covid-19/myanmar-receive-2b-covid-19-relief-intl-development-organizations.html>

⁹ <https://www.worldbank.org/en/news/press-release/2020/04/20/myanmar-50-million-in-fast-track-financing-for-national-covid-19-coronavirus-emergency-response>

¹⁰ <https://www.frontiermyanmar.net/en/workers-mothers-and-elderly-to-benefit-from-25m-in-covid-19-foreign-aid/>

¹¹ <https://www.adb.org/news/adb-approves-250-million-loan-support-myanmars-covid-19-response#:~:text=ADB%20Approves%20%24250%20Million%20Loan%20to%20Support%20Myanmar's%20COVID%2D19%20Response,-News%20Release%20%7C%2021&text=The%20CARES%20Program%2C%20ADB's%20first,Myanmar's%20early%20COVID%2D19%20response.>

¹² World Bank, 2020.

¹³ Interviews 2, 7, 11

The pandemic disrupted the local food production, manufacturing, and industries including fisheries and aquaculture due to reduced demands and travel restrictions. It is affecting different scales to different producers. Inland and Marine Fisheries and Inland Aquaculture are the most effected by COVID-19.¹⁴ The pandemic also affecting a rice planting cycle of rain fed farmers as a whole in 2020 season. In the Gulf of the Motta, food availability is reduced particularly in the staple foods that they used to intake like rice, pulses and beans in the households and stocks in the market.¹⁵

Migratory fisheries practice led risk exposure to small-scale fishers

The practice of migratory fisheries led to risk exposure to virus infection. Fishers, sellers, and processors faced risks of COVID-19 spread and infection.¹⁶ Many fishers have to make difficult decision to feeding their families as they have been infected by the diseases.¹⁷ Access to health services for them and for rural fishing communities are difficult even under normal situation.¹⁸ It is harder for the most vulnerable people and small fishers to accessing testing, treatments, and sanitation supplies needed to address the virus infection effectively.^{19 20}

Largest losses in the history of Fisheries Sector

The Myanmar Food Producers, Processors and Exporters Association projected that the loss is the largest loss in the history. Since August 2020, the cold storage and facilities have been closed due to lack of revenue and travel restrictions. Delay in re-opening the factories and processing facilities could also affected as same as in production of fish seed and farmed fish.²¹

Fisheries could face complete shutdown in fish processing and exports

Many fisheries and processing plants could face complete shutdowns if they were not considered

vital to national food supply systems.²² It is like a twin disaster for small-scale fishers and coastal fishing communities due to reduced demands and attendant collapse of prices. Some fishing activities of inland and marine are temporary shutdown due to restrictions of local transportation and supply chain services. Local market and export-oriented fisheries have faced a vest of reduction in demand and slashed prices due to reduced demand from local markets.²³

Reliefs still needed for the Small Fishers and Aquaculture Farmers

Farmers and fishers received a small amount of financial assistance from the government for one planting season which is about 40,000 kyats (equals to \$30) per farmer.²⁴ This support can afford to buy two baskets of rice seed only and tends to address only for short term relief. Farmers cannot tell what the future of their livelihoods look like after the pandemic. This situation is expected to be continued until next planting season in 2021. While the pandemic is still unfolding, there is an urgent need to coordinate, plan and implement effective short-term and long-term responses. Rapid mobilization of the resources and inputs are needed in support of small-scale fishers, coastal fishing communities and aquaculture farmers.

Fish Exporters and Processors need Relief Loans

FAO study in August 2020 showed that COVID-19 impacts put as unexpected burdens to the aquaculture farmers with limited access to inputs, and reduced catch size due to reduce in demands. This also created economic loss to the exporters and the processors due to reduced demands and travel restrictions.²⁵ The affects in aquaculture and fisheries exports are projected about 45 % declined in EU and North America market which is about \$750 million in 2020. Lack of income and reduced in demands will lead business closures and unemployment.²⁶ Fish market prices have declined due to reduced demand from local markets and travel restrictions.²⁷

¹⁴ Interview with secretary of MFF from Mon State

¹⁵ MFF, 2020.

¹⁶ Interview 1, 5

¹⁷ Interview 3, 4

¹⁸ Interview 10,13

¹⁹ Interview 8, 14

²⁰ MFF, 2020

²¹ MFPPEA, 2020. <https://www.mmtimes.com/news/myanmar-fisheries-sector-nears-collapse-orders-tumble.html>

²² MFPPEA, 2020.

²³ Interview 21, 25

²⁴ Interview with a fisher from Mon State

²⁵ FAO, 2020. <http://www.fao.org/myanmar/news/detail-events/en/c/1314576/>

²⁶ MFPPEA, 2020.

²⁷ FAO, 2020. <http://www.fao.org/myanmar/news/detail-events/en/c/1314576/>

Does Fisheries Management fall upon communities?

Local government-imposed travel restrictions to minimise the spread of COVID-19 further squeezed project staff to access on ground. Mobilization to respond to COVID-19 fell more on Community Based Organizations and community-based associations. This situation hindered government staff and project staff to provide monitoring to ensure the population of GoMP project is aware of personal safety and protection for COVID-19 virus. Local compliance is declined due to lack of available resources and compliance fatigue. The lack of compliance is likely to increase Illegal, Unreported and Unregulated (IUU) fishing and incursions into the project area used by small-scale fishers.²⁸ However, DOF and local government have recognized that small-scale fishers are contributing to local food supply and security and fishing communities and community based fishers committee are importance for sustainable fisheries and aquaculture.²⁹

Opportunities are always associated with crises

While the pandemic is spreading with travel restrictions, local people, fishing communities and CBOs are active to take action to respond. They could share food, resources and capacity to make food security contributions in neighbours.³⁰ The middle scale and small aquaculture farmers could use mobile applications to share fisheries information during the pandemic. Home delivery system and online fish selling is only allowed for processed and cooked foods, but it did not favourable for wet market and seafood products yet.

Flexible in regulations served faster re-opening fisheries

COVID-19 has caused everything has to be backward for the moment. This situation may see as a pull factor of the local food production and economy. On the other, that could be a bouncing force to reboot Myanmar's economy with stimulus

packages of recovery assistances made by World Bank, EU and ADB (GoM 2020). Local contributions and donations are fundamental assets of social and financial injections together with international aids.³¹ MFPPEA in Mon State is facilitating with workers' associations and processing factories upon re-opening of processing facilities, entering the processing facilities, safe working conditions and fair prices.³²

“Inland fisheries, inland aquaculture and marine fisheries are the most affected sectors by the pandemic.”³³

Effective coordination required for Build Back Better in the Gulf of the Mottama

Providing relief packages, aid and loan forgiveness for small-scale fishers and fish workers in the post-harvest sector are urgently needed. It needs to be ensured access of health services in rural communities and fishing communities. DoF can facilitate the process of discussion on prioritizing re-opening of fishing and production activities to provide food security and livelihoods. It needs to monitor to protect workers from COVID-19 and exploitation as an urgent action. DOF and development partners can facilitate consultations of market access.³⁴ NGOs, Development Agencies, and Donors can facilitate the process of mobilization of resources and market development by Private Sector. They can draw insights and experiences from field sites and country programs and can engage and advocate for the needs of CBOs and CSOs.³⁵ Donors can facilitate the process of re-orientation and flexibility of funding programs and targeting supports to reach to smallholders and rural fishing communities. Private sectors can facilitate strengthening social safeguards;³⁶ safety of workers and market access; buyers should stay engaged with suppliers sourcing from small fishers; distributors should ensure trading patterns are maintained and ensured access by smallholders.³⁷

²⁸ Interview 8, 22,30

²⁹ Interview 4, 17, 22, 38

³⁰ Interview with a fish collector from Bago Region

³¹ Interview with chairperson of MFPPEA by Myanmar Times.

³² Ibid.

³³ MFPPEA, 2020.

³⁴ Interview with a staff from the GoMP project

³⁵ Interview with a lecturer from Zoological Department

³⁶ Interview with a staff from the GoMP project

³⁷ Interview with an owner of fish processing factory from Mon State

INTRODUCTION

The study of COVID-19 effects on the fisheries sector in the Gulf of the Mottama is a rapid qualitative study that provides key findings of impacts by COVID-19 in fisheries and aquaculture in the Gulf of the Mottama, particularly in Bago Region and Mon State. The study is reflected the experiences of difficulties, shocks and stresses by fishing communities, producers, collectors, buyers, exporters and those who are working in fisheries and aquaculture sector. The study is not enough to assess the effects of COVID-19 upon the whole fisheries and aquaculture sector in Myanmar. Since COVID-19 situation is constantly evolving, further assessments will be required to fully understand the impact that COVID-19 has had imminent losses in local fisheries and aquaculture.

Covid-19 context in Myanmar

Since the first infected case of COVID-19 was reported in March 2020, Myanmar has responded COVID-19 first wave with quick actions. Yet, in September 2020, the second wave of the virus infection hit widely to Yangon and Sittwe.³⁸ With potential for infection hotspots to develop in densely populated urban areas, Yangon and other major cities and towns were spread of the virus with speedy casualties.

COVID-19 DASHBOARD OF MYANMAR³⁹

	As of 10 December 2020
	103,166 confirmed cases. First case reported on 23 March 2020.
	2,174 confirmed cases. First case reported on 31 March 2020.
	Hospital Capacity (2018)
	Number of hospitals – 1,134
	Number of available beds – 61,811
	Hospital bed occupancy rate – 65%
	Density of medical doctors (per 100,000 population)
	Myanmar – 6.8
	Global average – 15.8



South and East Asia coverage – **8.1**



Population using hand washing facilities, soap and water (2017)



Myanmar – **79%**



Global average – **60%**



South and East Asia coverage – **60%**

Figure 1 COVID-19 Dashboard of Myanmar

As of 10 December 2020, there were 103,166 confirmed cases of COVID-19; and 2,174 confirmed deaths.⁴⁰ The Ministry of Health and Sports (MOHS) is primarily responsible for Myanmar's COVID-19 response efforts. As the country's limited health facilities and capacities for testing and treatment must deal with rising case number. Myanmar Government continues to face challenges around how best to enforce public compliance with COVID-19 safeguard. To date, Myanmar Government relied on community based awareness and volunteers help implement control measures.⁴¹ Most of the townships practiced semi-lockdowns and travel restrictions to prevent infection. When the second election was took place on 8 November 2020, health restrictions were eased to enable campaign and voting. The case numbers has increased slightly.

Fisheries in Myanmar

Myanmar, the largest country in South East Asia, has a land area of 676,577km², a coastline of about 3,000 km. About 1.3 million ha of inland freshwater bodies are permanent out of total 8.1 million ha. Myanmar has impressive freshwater capture fisheries. Inland waters are made up mainly of the interlocking/mingling of riverine and estuarine systems of the Ayeyarwaddy (2150 km long), Chindwin (844 km; a tributary of the main Ayeyarwaddy) and Sittaung Rivers (563 km) plus the large Thalwin River (2400 km) to the east and a small section of the Mekong River basin. Together these systems extend from the eastern part of the

³⁸ Phyo Tha, Kyaw, WHO Country Chief Urges Myanmar to Sustain 'Amazing' COVID-19 Response, The Ayeyawaddy, July 2020.

³⁹ MOHS, 2020

⁴⁰ WFP, Myanmar COVID-19 Situation Report # 13.

⁴¹ WHO, 2020.

Bay of Bengal to the Gulf of Mottama and along the eastern edge of the Andaman Sea.⁴²

Myanmar produced 5.97 million tons of fishes in 2019, 3.24 million tons of marine fisheries and 2.73 million tons of inland fisheries. There were 29,455 fishing vessels of which 43 % were not equipped with an engine, as of 2016. There were 3.2 million people employed in fishery and aquaculture sector, in which above 800,000 people are employed in aquaculture, about 300,000 workers are employed in processing factories, and other remainder divided nearly evenly between inland and marine fisheries. The fishery sector provided 3.5 % of country GDP in 2018 in which agriculture sector provided 10.2 % and livestock sector provided 6.7 of GDP.⁴³ FAO and Norwegian government report in 2015 recognized that marine capture fisheries sector contributed around 10 % to the GDP.⁴⁴

Fisheries Data of Myanmar^{45,46}

5.97 million tonnes of fish produced (2019)

3.24 million tonnes of fish produced by Marine Fisheries (54% of total fish production)

2.73 million tonnes of fish produced by Inland Fisheries (46% of total fish production)

29,455 registered fishing vessels (12,583 non-powered vessels, 13,831 powered vessels, 3,030 national offshore vessels, and 11 foreign offshore vessels)

3.2 million people working in fishery and aquaculture (57% in freshwater fisheries and 43% in marine fisheries)

800,000 workers employed in aquaculture

300,000 workers employed in processing factories

3.5 % of country GDP is shared by fisheries

6% of population received livelihood supports from fisheries

Fisheries Data of the Gulf of the Mottama

32,133 fish ponds in acre (31,132 in BG and 1,001 in Mon)

1,164 shrimp/prawn pond in acre (40 in BG and 1,124 in Mon)

76.678 M of production of hatcheries in 2019 (72.217 M in BG and 4.461 M in Mon) from 4 hatchery sites in Bago Region

320 Drift nets in Mon State

528 MT of ice production per day from 29 ice plants in Mon State

68 Resource Conservation Trainings conducted in Mon State

22 Fish Health and Diagnostic Trainings conducted in Bago Region

634 Aquaculture Trainings conducted in Bago Region

⁴² DOF, Fishery Statistics 2019. <file:///C:/Users/Lenovo/Downloads/Fishery%20Statistic%202019%20Originals/t16-9-2020.pdf>

⁴³ DOF, Fishery Statistics 2019.

⁴⁴ FAO, 2015.

⁴⁵ DOF, Fishery Statistics 2019.

⁴⁶ FAOSTAT. 2018. Statistics Division, Food and Agriculture Organization of the United Nations. Available at <http://www.fao.org/faostat/en/#country/28>. Accessed on 28 May 2018.

Figure 2 Fisheries Data of Myanmar and the Gulf of the Mottama

COVID-19 Effects on Fisheries Sector

COVID-19 effects on fisheries sector is reported as a record-breaking year for fishery exports, most of the processing factories and exports are shutdown and jeopardised thousands of jobs. The pandemic hit about 40% of production of 4,900 livestock and fisheries breeding businesses. In the fisheries sector, the impact has cascaded down the fisheries value chain, leading to delays in transport and logistics and large quantities of spoilage.⁴⁷

Yet, DOF and the experts reported exports earning was over \$81 million a month in the fiscal year beginning in last October and \$651 million in total until May 2020.⁴⁸ The buyers cancelled orders due to temporary closed of the factories. The seafood export sector has been badly affected by transport disruptions and enforcement of COVID-19 safety measures since March 2020 (DOF 2020). Despite the impacts found in the sector, the fisheries sector has not received any specific supports from the government until June 2020. The sector has reopened the fishing activities after July and expected to receive loans from COVID-19 emergency loans program which was targeted for SMEs in garment and tourism sectors.⁴⁹

Local orders were stopped when domestic markets collapsed after the closure of restaurants and hotels since August 2020. As of today, more than 300,000 are employed in processing plants and fisheries and aquaculture provide jobs for more than 3.3 million in the country.⁵⁰ In Mon State, 80% of people assumed that the fisheries business is dropdown as the whole sector in all functions of pre and post production.⁵¹ Seafood products from Mon State were exported China and Thailand. Processing and exporting companies are being stressful due to offshore fishing ban in re-opening of fisheries in next season. MFF requested DOF to ease and shorten the regulation as per conditional and seasonal by one month based on the additional recommendation of the Norwegian Research team,

⁴⁷ Interview with U Ye Tun Win, DG of Livestock and Veterinary Department. by The Frontier, June 2020.

⁴⁸ U Ye Tun Win, DG of Livestock and Veterinary Department.

⁴⁹ Lin Htun, Kyaw, Fisheries sector calls for government rescue amid COVID-19 fallout, The Frontier, June 2020.

⁵⁰ Ibid.

⁵¹ Interview with U Myint Soe, Chair of Mon State Fisheries Federation, by The Frontier, June 2020.

into the normal season from February 15 to May 15.⁵²

“Since the situation is constantly evolving and further assessments will be required to fully understand the impact that COVID-19”.⁵³

In the respond to the COVID-19, Government of Myanmar provided basic food items to vulnerable families that included rice, cooking oil, salt, onions, and beans. The proposal of DoF for fisheries sector response package to the Cabinet was approved in July 2010. The plan includes K10 million for trawlers, K100 – 200 million for Jetty owners, K300 million for seafood producers and processors.⁵⁴ In July 2020, Myanmar government approved a sum of K6 billion for fish breeders.⁵⁵ The funds were distributed to breeders to develop fish ponds across 150,000 acres of land despite the selection criteria were not clear to the beneficiaries and issues arising for transparent and accountable ways of management.⁵⁶ About K1.4 billion was allocated to support training and technology for breeders, as the funds were utilized under CERP plan.

"Relief loans should be distributed to fish exporters and fish processors in Mon State as same as SME."⁵⁷

The effects of COVID-19 are associated with health preventive measures followed by local authorities in order to safe people from virus infection. Travel restriction, semi-lockdown, and enforcement of quarantine to visitors have been limited accessibility and movement of people. Travel needs to get temporary movement cards, travel permission from the local authorities, health check certificate from department of health. One or two persons from a household are allowed to go market to buy food and hospital visit. The restrictions limited fishers and fish producers to buy fish feed and necessary inputs for their farms. Majority of the population are small-scale artisanal fishers those who have potential risk exposure to the virus as they practice migratory fishing practice. The middle and larger scale fishers and boat owners are also affecting by the pandemic as they had to reduce their workers due to reduced

income, less fishing activities, reduced demands from exporters and reduced fish price. Fish price in local market and export have been declined particularly in trade export to China and Thailand.

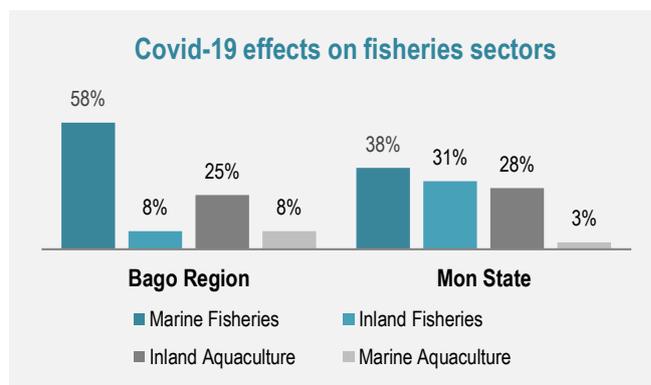


Figure 3 COVID-19 effect on fisheries and aquaculture

Figure - 3 shows COVID-19 effects upon four fisheries sector segregated as Inland Fisheries, Inland Aquaculture, Marine Fisheries and Marine Aquaculture in Bago Region and Mon State. Marine Fisheries, Inland Fisheries and Aquaculture are the most affected sectors by COVID-19. In Bago Region, 58 % of the respondents said COVID-19 has affected reduced of catch in marine fisheries in which Inland Aquaculture is followed as the second most effected by 25 %. In Mon State, the respondents see that Marine Fisheries is affected by 38 % in catch, and Inland Fisheries is followed as second most effected by 31 %, and thirdly, Inland Aquaculture is by 28 %. Marine Aquaculture is less affected sector by the pandemic in both regions of the Gulf of the Mottama.

Most of the cold chain factories in Mon State and fish processing factories have been shutdown in August 2020 and resumed in late September. The condition of sea food export to China and Thailand become more restricted with health preventive measures. Boarder trade with Thailand has closed temporarily due to second massive hit of virus infection in September 2020. China Boarder Trade Authority has banned frozen food imports over virus fear in November 2020 due to the reported cases of contact with drivers and contaminated cold-chain products.⁵⁸

⁵² Interview with U Myo Nyunt, Secretary of Myanmar Fishery Products Processors and Exporters Association, by Myanmar Times, August 2020.

⁵³ Interview with Secretary of MFF in Mon State

⁵⁴ Interview with U Myint Zin Htoo, DDG of DOF by Myanmar Times, August 2020.

⁵⁵ Hein, Zeyar and Mya Htwe, Chan, Myanmar govt channels funds to support fisheries sector, Myanmar Times, 14 July2020.

⁵⁶ Interview with U Ye Tun Win, DG of Livestock and Veterinary Department, by The Frontier, June 2020.

⁵⁷ Interview with a fish exporter from Mon State

⁵⁸ Mizzima News, 19 November 2020. <http://mizzima.com/article/china-targets-frozen-food-imports-over-virus-fears>

Government supports for fisheries sectors

	Food distribution to low income families (5 basic food items)
	40,000 K as relief cash to low income families (included all small-scale fishers and farmers)
	6 billion K for fish breeders (fish ponds across 150,000 acre)
	1.4 billion K for training and technology for breeder

Figure 4 Government supports for fisheries sector

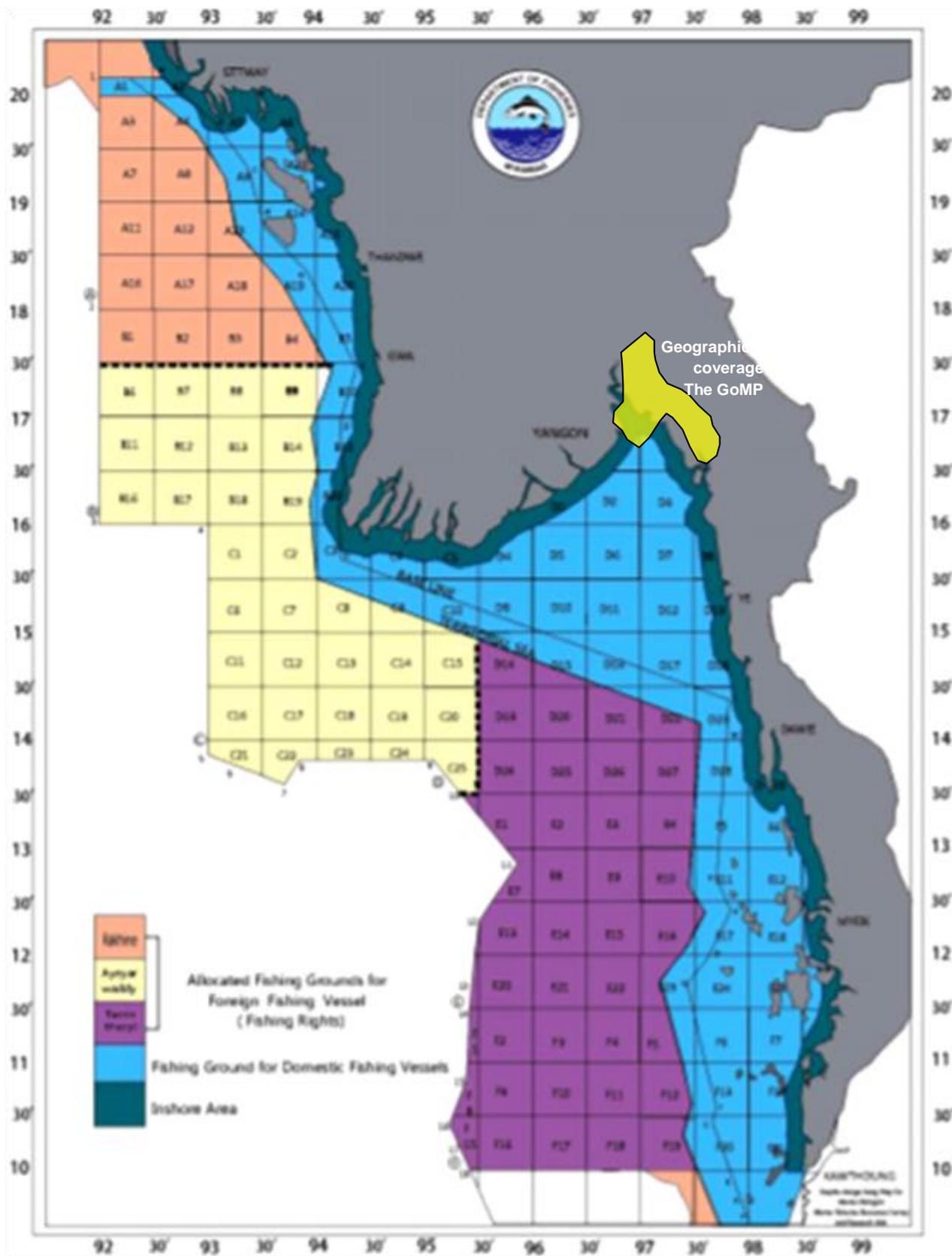
The Gulf of the Mottama Program

The Gulf of Mottama (GoM) is a unique ecosystem of Myanmar which coastline spans 3,000 km, it links the Yangon and Bago Regions to Mon State and receives water and sediments from the Salween, Sittaung, and Yangon Rivers. The mudflat in the GoMP is home to at least 150,000 water birds, including the Critically Endangered Spoon-billed Sandpiper (SBS), as well as fishes, crustaceans, and other flora and fauna of ecological, conservation, and commercial importance.

However, lack of management and uncoordinated governance of these coastal natural resources have led to overexploitation, resulting in massive decline of fisheries stocks, decrease in SBS populations, habitat destruction, and inland salinity intrusion. In this regards, the GoM Program was initiated to support the implementation of the Gulf of Mottama (GoM) Coastal Natural Resources Management

Plan (CNRMP), to build the capacities of the local communities to manage and govern their own local natural resources, in particular fish stocks and to reduce the pressure on the natural resources the project promotes various livelihood alternatives. The GoMP project is implemented by a consortium led by HELVETAS Swiss Inter-cooperation, with core partners: Network Activities Group (NAG), a Myanmar NGO; the International Union for Conservation of Nature (IUCN), a Swiss-based environmental network; and the Biodiversity and Nature Conservation Association (BANCA), a Myanmar NGO. With support from the Swiss Agency for Development and Cooperation (SDC), the Community-Led Coastal Management in the Gulf of Mottama Project (CLCMGoMP) was initiated in 2015, with a first phase running until April 2018, a second phase planned until December 2021, and a third phase expected until December 2024. (HELVETAS, 2018)

Map 1 Fishery Map of Myanmar and geographical coverage of the GoMP



Source: Department of Fishery, 2019.

METHODOLOGY

About the study

HELVETAS and NAG commissioned Myanmar Development Network (MDN) to conduct a study of COVID-19 effects on fisheries sector in the GoMP during November and December 2020. The aim of the study is to provide timely overview and scale of impacts and collate suggestions for interventions of mitigation measures and recovery actions in the response to COVID-19. The study was conducted in 10 Townships of the Gulf of the Mottama project namely in Belin, Chaung Zone, Kawa, Kyaikhto, Kyaikkame, Kyaikmayaw, Mawlamyine, Paung, Thaton and Thanphyuzayat in Bago Region and Mon State.

The study themes have covered on Fisheries Production; Access and Availability of Inputs; Market Condition; Food Security; Natural Resources; Fisheries Management; Resilience of Fishers; and Recovery Options and Policy Interventions for Bago Region and Mon State.

The study has used mixed methods of data collection by using Key Informant Interviews (KIIs), Case Studies, and Mobile Survey. Non-probability sampling method was used for both of structured and semi-structured tools. Samples were determined by gender disaggregation, classification of livelihoods and geographical context. Selection of the respondents were categorized upon livelihoods classification, characteristics of jobs related to fishers, producers, processors, buyers, collectors, boat owners, exporters, women groups, fishers group, trade unions, government officials and other relevant institutions.

Primary objective of the study is to analyze the effects of covid-19 pandemic on the livelihoods of fishers (small-scale fishers as well as bigger boats with at least three salaried fishers) and to identify ways to strengthen these fishers resilience in the Gulf of Mottama area and to document the effects of policy response measures implemented by the Government in the fisheries sector due to covid-19 pandemic.

The specific objectives of the Study are:

- ▶ To analyze the effect of covid-19 pandemic on accessibility and availability of inputs for the fishers (ice for storage, fishing nets, micro-credit, the role of fish collectors in the village, etc.), fisheries practices (including labor availability), fish marketing opportunities in domestic and export value chains and the overall effect of COVID 19 on the livelihoods of small-scale fishers.
- ▶ To specific analyze the role of women and youth in the fisheries sector and the specific effect COVID 19 has on both groups.
- ▶ To assess the resiliency of fishers in project intervention villages (GoMP interventions - compared with other non-project villages in the GoM area).
- ▶ To recommend interventions that will help strengthen the resiliency of fishers within the framework of the GoMP.
- ▶ To identify key fisheries policy measures implemented in response to covid-19 pandemic and its effects to the fisheries sector.
- ▶ To recommend measures to strengthen the Myanmar fisheries sector post covid-19 pandemic.

Study Questions

- How COVID-19 has affected fisheries production in the Gulf of the Mottama, particularly in local market, employment, supply and demand?
- In what extend of COVID-19 have affected access of fisheries inputs for ice for storage, fishing nets, micro-credit, and fisheries practices, including labour availability, fish marketing opportunities in domestic and export value chains?

- What responses have been made by Government of Myanmar for fisheries sector response and recovery in Bago Region and Mon State?
- What challenges have been overcome in response to implementation of Coastal Natural Resource Management Plan in the Gulf of the Mottama?

Data Collection and Analysis

The study has looked 25 documents of relevant studies and research reports related to COVID-19 and fisheries in Myanmar. Literature review was conducted through analysis of relevant studies and reports done by development agencies and institutions. Other project documents of proposal, baseline survey, value chain analysis, community assessment report, and project reports were also reviewed to understand the project interventions in the GoMP.

Tools	Methods
25 + Documents	Document review of COVID-19 impacts reports done by other agencies and project documents, proposal, and reports.
34 Interviews	34 Key Informant Interviews (KII) were conducted in 8 Townships (7 fishers, 3 fish collectors, 3 Dry fish processors, 3 Aquaculture farmers, 3 Boat owners, 2 Fish exporters, 2 Mud crab fishers, 4 DOF staff, 3 project staff, 2 staff of Zoological Departments, 1 MFF staff and 1 MOC staff.
28 Survey Respondents	The mobile survey was conducted to collect quantitative information on ground from 8 Townships with 11 fishers, 9 fish collectors, 4 fish processors, 2 aquaculture farmers, 1 boat owner, and 1 fish exporter

Table 1 Study Tools and Methods

Key Informant Interviews and Mobile survey were undertaken as the additional data collection methods in the study. Answers of the interviews and mobile survey data were analyzed together to feed into the report with qualitative and quantitative information. Data were analyzed as per the study themes of Fisheries Production; Access and Availability of Inputs; Market Condition; Food Security; Natural Resources; Fisheries Management; Resilience of Fishers; and Recovery Options. Data were checked and generated with SPSS and Excel Analyzer. Findings were validated with project stakeholders and the project management team.

Content of the Report

The study report is organized as followed: Introductory section is consisted with Executive Summary and Introduction; Methodology section is consisted with three data collection tools (1) KIIs (2) Case Studies and (3) Mobile Survey; Last section is consisted with key findings and conclusion. Findings were reflected upon the study themes.

Limitations of the Study

Representation

To get the suitable representation of the respondents was challenged for the study as it was a rapid study. Distribution of the respondents were categorized into fishers, aquaculture farmers, collectors, boat owners, processors, exporters and fisheries management institutions in both study sites while people from non-project areas were also contributed in the study, although they have limited knowledge about GoMP activities. The contribution of larger scale fisheries and fish exporters and processors was limited in the study to present the situation of export fisheries.

Interpretation bias

The data may be influenced by differing interpretation of key terms used during the survey process specific to technical words used in fisheries and aquaculture sector. Sometime, local terms are different between townships and their local languages.

Level of evidence

It is important to note that this was a rapid high-level analysis, so not all fisheries activities were captured. This study cannot be considered as a comprehensive review and study of the COVID-19 effects on fisheries sector in Myanmar, which remains ongoing.

Presence of Respondents

Access to project locations and non project location was not allowed by government-imposed travel restrictions. Number of the respondents in the study is not enough to represent by all fisheries related jobs. Interviews with government officials need a proper approval from the respective ministry such as Universities and Department of Trade and Commerce. Timely presence of the respondents from all project townships was challenged due to

limited access of phone and internet. Some respondents were not able to participate in the study due to fishing works outside of their townships and some were not able to come back for the interviews as scheduled.

KEY FINDINGS

Respondents in the study

The total 62 respondents from community members and fishing groups including young fishers, women fish sellers, trawlers, mud crab fishers, aquaculture farmers, fish collectors, dry fish processors, boat owners, fish exporters, DOF staff, lecturers from Zoology departments, project staffs and officials from state government participated in the study (28 respondents in the mobile survey and 34 respondents in the interviews). Mon State is represented by 69 % and Bago Region is 31 %. About 53 % of the respondents have had experiences of engagement in the GoMP activities of project meetings, awareness meetings, and trainings.

Distribution of fisheries sector in the study



Figure 5 Fisheries sector in the Study

Distribution of fisheries sectors in the study is categorized into (1) Inland Fisheries, (2) Marine Fisheries, (3) Marine Aquaculture, (4) Inland Aquaculture and (5) Fisheries Management. Participation of Inland fisheries was highest in the study with young fishers, women fish sellers, mud crab fishers, aquaculture farmers, fish collectors, dry fish processors, post-harvest workers, and fish trap users. The middle and large scale fishers, boat owners, fish exporters, fish processors and sea food producers are followed as Marine Fisheries and Marine Aquaculture. The population of Inland Aquaculture can be seen as the representation of fish farmers, rice fish growers

and fish pond owners. Department of Fisheries, Zoological Departments from two Universities, Myanmar Fisheries Federation and Myanmar Food Producers, Processors and Exporters Association and project staff of the GoMP are represented as the sector from Fisheries Management.

“For us, continuation of job and income are vital for our family members.”⁵⁹

Distribution of participants in the study

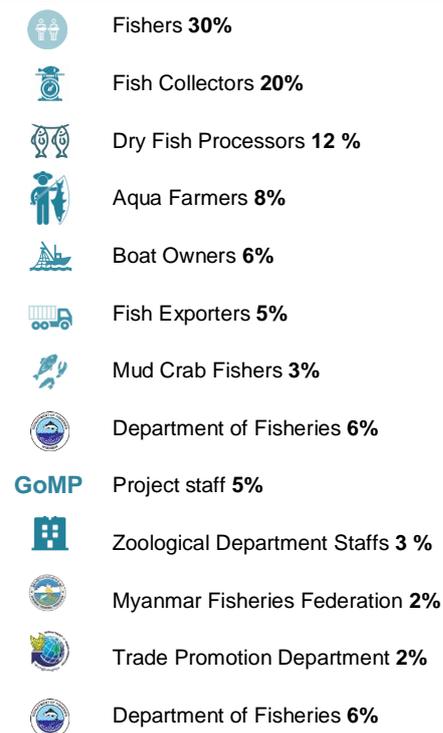


Figure 6 Project Beneficiaries in the Study

In figure – 5, Participation of small scale fishers, young fishers, women fish sellers, post-harvest workers, fish trap users, trawlers, fish ponds owners, and small-scale fish marketer mostly done by women are highest as 30 %. Their livelihoods depend on seasonal and with artisanal fishing, low technology, low capital and fishing practices undertaken by individuals fishing households. Fish

⁵⁹ A woman fish collector from Bago Region

collectors are represented as 20 % from marine and inland fisheries. Dry fish processors are followed by 12 % in the study, boat owners by 6 %, fish exporters by 5 % and mud crab fishers by 3 %.

From fisheries management, Department of Fisheries has presented by 6 % through providing state and regional fisheries management data and update of COVID-19 on fisheries sector in the region. Project staffs of the GoMP have provided management supports and project supports in line with the Coastal Natural Resource Management Plan. Myanmar Fishery Federation in Bago Region and Department of Trade Promotion have contributed from the aspect of trade promotion and sustainable fisheries in both study sites.

How do the fishers fight COVID-19?

Fishers and fishing communities in the GoMP have been able to access health and COVID-19 information from internet, radio and Television. For the low income families, they could not use mobile phone but they have accessed radio information. They know to follow basic simple way of prevention of COVID-19 by washing hands, wearing face masks, and keep distancing. However, the practice of hand washing is easy to follow by the people from all ages in rural communities. And they could not able use single used face mask which is only available in town markets.⁶⁰

The villages from Bago Region have prepared by keeping medical stuffs and first aid kits. They used the battery supplied wireless sound boxes to announce COVID-19 information to the villagers and kept informing the update news from MOHS. Every household has kept a piece of soap or a soap bar to wash their hands.⁶¹

Fishers from Mon State reported that they have received health information from internet, radio, TV and visual materials or posters. MOHS has provided COVID-19 preventive messages by posting in the public places such as markets, junctions and road sides.⁶² The people have shared updated information about COVID-19 to their family members and their neighbours by sharing of number of infected cases, number of death and number of discharged.

However, access to health service by the fishers and fishing communities have been difficult even in normal condition. Lack of health knowledge and low income status created financial problems and not be able show the doctors regularly. They used to take generalized drugs without physician guide. It is harder for the most vulnerable people and small fishers to accessing testing, treatments, and sanitation supplies needed to address the virus infection effectively.⁶³

COVID-19 Effects on Fisheries Production in the GoMP

Fishery provides incomes and foods for the people in GoMP and it plays vital role of domestic income and food security. Fishery products served as a major role of protein, supplementary foods and diets for the people. DOF reports have shown that about 70 % of fishery products are produce for direct consumption and about 10 % is processed as dried fish and algae for production of fish sauce, paste, spices and agaragar by inland and coastal fishing communities.⁶⁴

The inland fisheries of the GoMP composites with leasable fisheries with management of indigenous fish and fisheries habitat conservation, pond culture and capture based system for sustainable fish production. Open fisheries provide basic food and protein for the small scale and subsistence fishers.

There are 31,132 acre of fish ponds and 40 acre of shrimp/prawn ponds in Bago Region. The aquaculture farmers from the region produced fishes from the fresh water ponds and brackish water ponds culture by growing freshwater fishes including common carp, Indian major carps, Chinese carps, Tilapia, Pangasius, Catfish, and Pacu, shrimps and mud crab. However, Mon State has produced higher amount of shrimp and prawn from 1,124 acre of shrimp and prawn ponds.⁶⁵

⁶⁰ Interviews with the fishers in both study sites

⁶¹ Interviews with the fishers from Bago Region

⁶² Interview with the fishers from Mon State

⁶³ Interviews with the fishers in both study sites

⁶⁴ DOF, Fisheries Statistic 2019.

⁶⁵ DOF, Fisheries Statistic 2019.

How has COVID-19 affected Incomes, jobs opportunities and fisheries production? (n = 28 persons)	Bago Region	Mon State
		
Reduced income	88%	83%
Reduced Job opportunities	100%	61%
Reduced harvested fish	50%	50%
Reduced catch per day	38%	56%
Availability of labours	48%	61%

Table 2 Effects of COVID-19 on fisheries production in two study sites

Table 2 shows the effects of COVID-19 on the fisheries production of the GoMP connected with income, jobs opportunities, catch size and harvested fish. Before the pandemic, people could do regular fishing activities and easily access to other townships. During the pandemic, the income has been significantly decreased reported by 88% of respondents in Bago Region and 83% of respondents in Mon State. The impacts are strongly connected with less fishing activities and less travels or movements within townships that caused reduction of harvested fishes and catch per day. Harvested fish has been affected by 50% in both locations and expected more negative impacts in Bago Region where 31,132 fish ponds are operating with high demands. Catch size in Mon State has been decreased significantly by 56% in which 38% in Bago Region.

Catch size per day was different from Townships due to availability of fish stocks and government imposed travel bans. The fishers who used to catch fish have reduced from five days to three days a week.⁶⁶ Three inland fishers from Bago Region and two offshore boat owners from Mon State reported that the catch size has been increased slightly in the first wave of pandemic, March to April 2020 by 10-20% of catch amount compare to normal season.⁶⁷

However, the study has looked project monitoring data between 2019 and 2020 from two project sites in Sutpanu and Kyikehto. The catch size of all species in Sutpanu between March to December has been increased by 17% in and the catch size of Croaker in Kyikehto has been decreased by 33%.

⁶⁶ Interview with a fisher from Bago Region

⁶⁷ Interview 10, 24, 33

⁶⁸ Interview with a fisher from Mon State

⁶⁹ Interview with a fish farmer from Bago Region

Monthly Monitoring Data	2019 (March-Dec) In viss	2020 (March-Dec) In MMH	Difference In %
All species in Sutpanu	8,974	10,515	Δ 17%
Parma Croker in Kyikehto	65,37	43,775	∇ 33%

Table 3 Comparison of catch size in Sutpanu and Kyikehto

Fish prices in both study sites seem to be declined significantly in the time of COVID-19 from 30% to 40%. In normal fishing season prior to the COVID-19, they have received 3,500 MMK per viss for normal catch and it has reduced to 2,000 MMK per viss. Some days in August, they had to sell the fishes by reducing 50% of the price and nobody was able to buy for it.⁶⁸ However, middle scale and larger scale fishers were able to survive and able to buy fishes with less prices.

Food production industries depending on marine fisheries and aquaculture were disrupted due to reduced demands from local markets and travel bans. Scale of affects was differed from different scale of production in both inland and marine fisheries. Rice production has seen reduction in 2020-21 planting season due to reduce of farming activities. Fishers, who do farming activities, reported that the price of cash crops and vegetables have been reduced by the pandemic as same as other agriculture products of fruits.⁶⁹ In Mon State, six cold storage and processing factories have reported that they could not produce value added products such as frozen and cooked foods to China, ASEAN countries and EU countries where regular contacts and exports have been made.⁷⁰

For mud crab fishers, they could earn about 8,000 to 10,000 Kyats as daily income in normal fishing season before COVID-19. Now it has reduced by 50% of income from 3,000 to 5,000 Kyats. They wanted to get the casual jobs in their villages for additional income they needed. And they have worried about for children and lack of food due to less income. They had to reduce their spending.⁷¹

For boat owners, catch size was decreased in both inland and marine fisheries.⁷² They could not hire transport services due to less income and

⁷⁰ DOF, Fisheries Statistic of Myanmar 2019.

⁷¹ Interview with mud crab fishers

⁷² Interview 29

reduced orders from local markets. One boat owner from Mon State reported that income was declined by 30% to 40% compare to the normal fishing season.⁷³ DoF has reopened the commercial fishing activities in the mid of September 2020 after three-month ban by Myanmar government from June to August. Only 10 % of offshore fishing vessels have been reported to resume marine fishing activities and catch size is yet to be informed.⁷⁴

COVID-19 has created **unstable business and unemployment** at all levels of fisheries sectors. For the small scale fishers, they have to find random jobs near to the living places with under wages or paid.⁷⁵ All of the respondents, 100% from Bago Region have reported they have lost their jobs for temporary or permanent in which 61 % of people in Mon State. Unemployment situation has been increased in both study sites due to temporal shutdown of fishing activities. For the middle scale and larger scale fishers, they had to reduce numbers of labours and workers due to unstable business that was not able to provide regular jobs. They were even had to release skilled labours those who have been working with them for years.⁷⁶

For household women, they had to take dual roles in the family by doing household things and by assisting family owned fisheries activities. They do not think as an inequality issue in the family even they had to work out more than 12-15 hours a day.⁷⁷ **For young people**, they have been waited the calls from their job providers, boat owners, big aquaculture farmers, and processing factories owners.⁷⁸ The population of young women is more condensed in Mon State where the processing facilities are functioned.⁷⁹

Hatcheries production and sale was decreased since April 2020. Sales of *Rohu* hatcheries fry and fingerlings were decreased and significantly affected of business income in the seeders. Four hatcheries sites of DOF in Bago, Thanatpin, Oakpho, and Thahton Townships have reduced the production due to reduced demands and temporary shutdown of supply chains.⁸⁰ Feed

sales, sales of fish feed was decreased by 62 % in April and same condition has been reported until November.⁸¹ Production of six processing factories in Mon State was stopped their products due to trade bans from China and Thailand and have been waiting to resume boarder trade.⁸²

COVID-19 effects on Access and Availability of fisheries Inputs

COVID-19 has affected access to and availability of fisheries inputs (n = 28 persons)	Bago Region	Mon State
Access to fishing gears and boats	50%	39%
Reduced extension services	38%	50%
Reduced access to fish feeds and seeds	38%	32%
Reduced access to cash, credits and loans	25%	33%
Reduced access to storage facilities and cold chains	38%	44%

Table 4 Access and availability of inputs

Access to fishing inputs and gears for inland and marine fisheries has reduced reported by 50 % of respondents in Bago Region and 39 % of respondents in Mon State. Small fishers were not able to buy the repaired gears and tools without regular income. And they had to make priority decision to buy basic foods, rice, pulses and oils, for the family. They were not able to access credit from money lenders in the villages. Due to travel restrictions, they were not able go to other townships to rent necessary items even from their relatives and friends. However, people from Mon State reported that they were able to share their limited resources for maintenance and repair.⁸³

Access to credits, loans and financial services by small-scale fishers was much easier before COVID-19. People could access cash and loans from formal and informal financial institutions such as local lenders, NGOs, government bank and companies before. To date, about 33 % of the respondents from Mon State faced difficulties to

⁷³ Interview with a boat owner

⁷⁴ Htoo Thant, Myanmar Times, Commercial fishing resumes in Myanmar after three-month ban <https://www.mmtimes.com/news/commercial-fishing-resumes-myanmar-after-three-month-ban.html>

⁷⁵ Interview with fishers from Bago Region

⁷⁶ Interview with a boat owner

⁷⁷ Interview with women fishers from Bago Region

⁷⁸ Interview with a young fisher from Mon State

⁷⁹ Interview with an owner of processing plant in Mon State

⁸⁰ Interview with a DoF staff.

⁸¹ WorldFish 2020, Impacts of COVID-19 on aquatic food supply chains in Myanmar.

⁸² Interview with Regional DoF staff in Mon State.

⁸³ Interview with fisher from Mon State

access cash from the local lenders and financial institutions those who also have been affected by the pandemic. Relief loan is one of the most effective financial services for both study sites.

Government supports (food bag and cash support) for low income families were reported useful and relevant for the small scale fishers through COVID-19 reliefs while they have been in difficulties. They received 5 units of food items and relief cash 40,000 K⁸⁴, despite the cash equals to the price of 1-1.5 baskets of paddy seeds. They have received the cash into two trenches. Some issues have been reported that the selection criteria were not clear and not transparent in communication done by the local government.⁸⁵

Regional and State level DoF have proposed the Fisheries Sector Response Plan package to provide necessary inputs for CERP that was developed in June 2010. The proposed plan has included K10 million for trawlers, K100 – 200 million for Jetty owners, K300 million for seafood producers and processors.⁸⁶ In July 2020, Myanmar government has approved a sum of K6 billion for fish breeders against the proposal targeted to fisheries concentrated states regions.⁸⁷ The funds were distributed to the fish breeders to develop fish ponds across 150,000 acres of land.⁸⁸ The beneficiaries wanted to see simple process of distribution of the cash.⁸⁹ From this support, about K1.4 billion was allocated to support training and technology for breeders. The study did not get exact reports on this support.

Access to extension services: DOF from Bago Region and Mon State have been provided the extension services to the fishers and fishing communities in working with NGOs and private sector and fisheries companies. The pandemic has limited of access to extension services from DoF by 38% in Bago Region and 50% in Mon State. Limitations included access to fisheries information, promoting fishing technology and practices. The extension services were provided through three extension centres which have been operating in Bago, Thanatpin and Thahton Townships. To date, DoF has reduced the frequency of extension and support services due to

government imposed restrictions and temporary closure of government offices across all administrative levels.⁹⁰

The study has received information from local people on the extension services which were providing by NGOs, the private sectors and companies. This was happening in inland fisheries and aquaculture farmers. They have created alternative approaches to share information of pond culture, fishing and farming practices for whole production cycle, pond and water management and market information, which include access to feed, access to seedlings, and local supply chains by using mobile application and internet services. This was happened in the project areas of FishAdapt project implemented by FAO in upper and lower Myanmar.⁹¹

Access to fish feed is limited in local markets due to travel bans and closure of local markets. According to the interviews, 38% of people from Bago Region have faced difficulties in which 32% in Mon State. Most of the fish feed producers are concentrated in towns, Bago and Mawlamyine. Inland aquaculture fishery is more concentrated in Bago Region and farmers have been using three types of fish feeds. They used natural food, supplementary feeds and complete feeds alternatively. During the pandemic, they were not able to buy high-quality feed as much as they needed. Fish feed cost has been increased slightly compare to pre disaster situation.⁹² Sometime, they had to use natural food instead of supplementary feeds and complete feeds when fish feeds were out of stock.⁹³

Ice production from 29 ice plants in Mon State was reduced daily production size, 528 MT per day. Most of the cold chain factories in Mon State and fish processing factories have been shutdown since August 2020 and expected to resume when they receive the orders from local markets. Based on the interviews, 44% of people from Mon State have reported they have reduced access to storage facilities and cold chains in which 38% in Bago Region. Use of ice by small-fishing vessels was decreased in demand due to less fishing activities, as they produced different types of ices

⁸⁴ Interview with DOF

⁸⁵ Interview 35

⁸⁶ Interview with U Myint Zin Htoo, DDG of DOF by Myanmar Times, August 2020.

⁸⁷ Hein, Zeyar and Mya Htwe, Chan, Myanmar govt channels funds to support fisheries sector, Myanmar Times, 14 July2020.

⁸⁸ Interview with DOF

⁸⁹ Interview with U Ye Tun Win, DG of Livestock and Veterinary Department, by The Frontier, June 2020.

⁹⁰ Interview with a Township DoF staff

⁹¹ FAO, August 2020.

⁹² Interview with a fish pond grower from Bago Region

⁹³ Interview with fish pond owner

as they used to produce block ice, compacted blocks of small ice, and slush ice.⁹⁴

COVID-19 effects on Markets

COVID-19 affects on local markets and exports (n = 28 persons)	Bago Region	Mon State
	Reduced fish and sea food prices	50%
Reduced demand of markets	40%	39%
Access to logistics services	63%	33%

Table 5 Effects on Markets

Fish price: According to the interviews with fishers and processors, all of the respondents from Bago reported that fish price has been decreased by 40% to 50%.⁹⁵ Dry fish price was decreased by 20% to 30% in Yangon and it was affected directly to the supply side in both of Bago and Mon State.⁹⁶ Market prices for fishing and aquaculture products have declined due to reduced demand from local markets and travel restrictions.⁹⁷

Sales in the market: The direct sellers in the local markets faced reduced of sale amount per day by decreasing from 5 – 8 viss to 3-4 viss. They could not sell the extra fishes to the collectors or other markets as regularly due to travel bans.⁹⁸ Some women found the solutions for the remaining fish by making dry fishes.⁹⁹

The study has looked change in value of *Croaker* landings between 2019 and 2020. MMH landings of *Croaker* were similar to 2019 landings but this is due to large catches prior to COVID-19. The March – December landings were 41% less than the same period in 2019 and little or no fishing occurred in May & June (breeding season). Fish prices have been declined for *Croaker* and along with changes in catches resulted in reduction in income to fishers of over 150,000 US\$. This was a 23 % reduction in yearly income or 41% reduction over the March to December period.

Project Monitoring Data	In MMK	In USD	Difference In %
Mar-Dec 2019 Prices	504,596,325	\$368,355	-
Mar –Dec Actual 2020 Prices	297,502,400	\$217,176	-
Difference	207,093,925	-\$151,179	∇ 41%

Table 6 Comparison of landing prices of Croaker

Access to local markets, wet markets, and retail stores were limited by Government imposed travel restrictions, quarantine measures and shutdowns of local markets caused fewer activities of local markets in both supply and demand sides. Local market and export-oriented fisheries have faced a vest of reduction in demand and slashed prices due to reduced demand from local markets.¹⁰⁰

According to the project staff, it has been difficult to order plastic boxes from Yangon market. However, work flow is functioning and remaining stocks can sell whenever the markets reopen.¹⁰¹ A rapid survey of WorldFish done in May 2020 indicated that the condition of purchasing fisheries inputs was slightly declined from 57% to 47% between March and April. Similarly, the selling of fisheries products went down from 60% to 53%.¹⁰²

Exports: Most of the cold chain factories in Mon State and fish processing factories have been shutdown since August 2020. They could not supply fisheries products due to reduced demand from EU countries and ASEAN countries. The condition of sea food export and frozen food to China and Thailand become more restricted after the reported case of contact with drivers and contaminated cold-chain products. China Boarder Trade Authority has banned frozen food imports over virus fear in November 2020. Boarder trade with Thailand has closed temporarily due to second massive hit of virus infection in September 2020.¹⁰³ The affects in aquaculture and fisheries exports are projected about 45 % declined in EU and North America market which is about \$750 million in 2020.¹⁰⁴

Market closure: Three fish sellers said the function of the open and wet markets depends on COVID-19 infection. When positive case was reported, the market was closed for 7 – 10 days

⁹⁴ Interview 32

⁹⁵ Interview with a fish collector

⁹⁶ Interview with a fish exporter

⁹⁷ FAO, 2020. <http://www.fao.org/myanmar/news/detail-events/en/c/1314576/>

⁹⁸ Interview with a woman fish seller in Bago Region

⁹⁹ Interview with a woman fish seller in Mon State

¹⁰⁰ Interview 26, 38

¹⁰¹ Interview with a project staff

¹⁰² https://www.worldfishcenter.org/pages/covid-19/images/myanmar_covid_summary.pdf

¹⁰³ Mizzima News, 19 November 2020. <http://mizzima.com/article/china-targets-frozen-food-imports-over-virus-fears>

¹⁰⁴ MFPPEA, 2020.

period to ensure the infected case was managed carefully as per health guideline.

covid-19 effects on Fisheries Management

COVID-19 affects on fisheries management	Bago Region	Mon State
Reduced frequency of extension services	100%	100%
Implementation of CNRMP	-	-
License and registrations	-	-
Research works	-	-

Table 7 Effects on Fisheries Management

Department of Fishery (DoF) under Ministry of Agriculture, Livestock and Irrigation is responsible for relief and recovery of fisheries in Myanmar. DoF has the role of monitoring, control and surveillance (MCS) activities to ensure compliance in both inland and marine fisheries. To date, DoF has been leading the implementation of Coastal Natural Resources Management Plan (CNRMP) for the Gulf of Mottama (GoM), through effective management and govern the natural resources.¹⁰⁵ Due to the pandemic, DoF has closed its office for temporary and could not provide any extension services together other functions of license and registration, and research works. DOF has planned to conduct the regulations of closed season and closed area for marine fisheries to protect spawning season of marine fish stocks and species. Surveillance and monitoring was followed by applying Fisheries Information System (FIS) and Vessels Monitoring System (VMS).

Ecosystem in the Gulf of the Mottama still needed for protection

The interviews of the study provided positive opinions to keep protection of ecosystem in the Gulf of the Mottama. Freshwater and marine ecosystem in the Gulf of the Mottama is facing numbers of challenges by overexploitation and inland salinity intrusion.^{106 107}The combination of decreased demand, lower prices, and lockdown on fisheries providing some reliefs to marine

ecosystem and possibly benefits for small-scale fishers in the longer run.¹⁰⁸ This could allow potentials for improvement of fish stocks in the GoMP. The collective actions within local fishing communities and community based natural resource management committees in rural areas have been reported in several ways. The case of contamination of micro-plastics was not reported in the GoM.

IUU cases potentially increase in the GoMP:

There has been an increased evidence of Illegal Unreported and Unregulated case in some Townships particularly in Chaungzon and Mawlamyine by illegal industrial fleets and small fishers. While fishing vessels and boats are staying in ports, fishing activities have been reduced.¹⁰⁹ Reduced frequency of extension and surveillance services by DOF may decrease promoting basic fish culture technology to fishers and prevention of illegal fishing in the GoMP.

The lack of compliance is likely to increase numbers of Illegal, Unreported and Unregulated (IUU) fishing and incursions into the project area.¹¹⁰

Three extension training centres of DoF have stopped department training programs particularly in trainings on Resource Conservation; trainings on Health and Diagnostic Examination of Fish and Health of Fish and Shell Fish and aquaculture trainings.¹¹¹ Access to fisheries and aquaculture trainings by the fishers and the communities was reduced in COVID-19 and remote assistance by the project staff was only mean for the time being.¹¹² **GAqP for aquaculture**, has been regulated by DOF in 2019 in line with National Aquaculture Development Plan.

Communities in fisheries management: Local government-imposed travel restrictions to minimise the spread of COVID-19 further squeezed project staff to access on ground. Mobilization to respond to COVID-19 fell more on Community Based Organizations and community based associations. This situation hindered government staff and project staff to provide monitoring to ensure the population of GoMP project is aware of personal safety and protection for COVID-19 virus. Local compliance is declined due to lack of available resources and compliance fatigue. The lack of

¹⁰⁵ Interview with a DoF staff from Mon State

¹⁰⁶ Interview with a fish boat owner

¹⁰⁷ Interview with DoF

¹⁰⁸ Interview with a DOF staff from Mon State

¹⁰⁹ Interview with a fish boat owner from Mon State

¹¹⁰ Interview with a fish boat owner from Mon State

¹¹¹ Interview with a DoF staff from Bago Region

¹¹² Interview with a project staff of the GoMP

compliance is likely to increase Illegal, Unreported and Unregulated (IUU) fishing and incursions into the project area used by small-scale fishers.¹¹³ However, DOF and local government have recognized that small-scale fishers are contributing to local food supply and security and fishing communities and community based fishers committee are importance for sustainable fisheries and aquaculture.¹¹⁴

Aids management: COVID-19 has caused everything has to be backward for the moment. This situation may see as a pull factor of the local food production and economy. On the other, that could be a bouncing force to reboot Myanmar's economy with stimulus packages of recovery assistances made by World Bank, EU and ADB (GoM 2020). Local contributions and donations are fundamental assets of social and financial injections together with international aids.

Private sector: The Myanmar Food Producers, Processors and Exporters Association and Myanmar Fisheries Federation is facilitating the negotiations with boarder countries to resuming boarder trade and export of fresh products, vegetables, fruits and sea foods. And the association is consulting with Department of Fisheries upon conditional extension of fishing season.¹¹⁵ The collective actions within local fishing communities and community based natural resource management committees in rural areas have been reported in several ways. MFPPEA in Mon State is facilitating with workers' associations and processing factories upon re-opening of processing facilities, entering the processing facilities, safe working conditions and fair prices.¹¹⁶ Resuming of offshore fisheries in the Gulf of the Mottama was started in September 2020.¹¹⁷

covid-19 effects on Food Security

	Bago Region	Mon State
COVID-19 affected availability of food and food security		
HH have less availability of food	50%	39%
HH reduced consumption of fish	48%	61%
HH reduced number of meal a day	38%	50%

Table 8 COVID-19 effects on local food security

Availability of food is reduced in the families of the project sites as they have been accessed the staple foods like rice, pulses and beans due to less incomes and jobs.¹¹⁸ Form the interviews, 50% of HH from Bago ad 39% of HH from Mon State have faced lack of food or unavailability of food in the time of pandemic. They have faced more difficulties in the period of May and June as close season for fishing. Consumption of fish and fishery products has also been reduced by 48% HH in Bago Region and 61% HH in Mon State. Each family had to reduce one meal per day from their meals by 38% HH in Bago and 50% HH in Mon State.¹¹⁹ However, they had an alternative option to take dry fish which is low cost and affordable. Household mothers had to select vegetables rather than fresh fish or meat for their daily meals. It has reported as a positive chance to improve nutritional values for their family members and their children.¹²⁰

Local food supply: DOF and local government have recognized that small-scale fishers are contributing to local food supply and security and fishing communities and community based fishers committee are importance for sustainable fisheries and aquaculture.¹²¹ **Nutrition:** Housewives could make small dry fish into fish powder to feed their children while they cannot access to local market and to buy food. This offers as an opportunity for accessible and acceptable form of micronutrients needed for children.¹²²

¹¹³ Interview 12

¹¹⁴ Interview 18, 20

¹¹⁵ Interview with chairperson of MFPPEA by Myanmar Times.

¹¹⁶ Ibid.

¹¹⁷ Interview with Secretary of MFF Mon State, by Myanmar Times.

¹¹⁸ <https://www.mmtimes.com/news/myanmar-puts-early-stop-fishing-season.html>

¹¹⁸ Interview with a women fisher from Mon State

¹¹⁹ A survey respondent from Mon State

¹²⁰ Interview with a women fisher from Mon State

¹²¹ Interview []

¹²² CGIAR. 2020. <https://fish.cgiar.org/news-and-updates/news/fish-and-aquatic-food-systems-covid-19-updates-may-myanmar>

RECOVERY OPTIONS

Recovery options for Fisheries Sector in the Gulf of the Mottama	Prioritization
Emergency coordination for CERP	1
Cash support for small scale fishers	2
Provision of grants and loans	3
Food support	4
Resuming of fresh products and sea food processing	5
Provision of seeds and fingerlings	6
Learning from damages and losses	7
Minimize unnecessary controls and burdens	8
Extension of fishing season	9
Impose Health Preventive Measures to resuming fisheries activities	10

Figure 7 Build Back Better Options

While the pandemic is still unfolding, there is an urgent need to coordinate, plan and implement effective short-term and long-term responses. Rapid mobilization of the resources and inputs are needed in support of small-scale fishers, coastal fishing communities and aquaculture farmers. The below options will serve as the suggestive and recommendations drawn from the views of people in the Gulf of the Mottama. Immediate impacts and results can be created in working with other sectors agriculture, livestock, and trade promotion.

- 1. Establish effective coordination to address fisheries sector needs, gaps and challenges in economic recovery.** Local government, local organizations, private sectors, and development partners have substantial roles to play in effective implementation of CERP. DoF can facilitate immediate responses and reliefs through provision of food and cash.
- 2. Provision of emergency cash for small fishers and vulnerable fishing communities.** DoF and development partners can conduct the Rapid Need Assessment for fisheries sector. The assessment will cover the needs, gaps and challenges of fishing communities. The provision can be included

with loan forgiveness for small-scale fishers and farmers.

- 3. Emergency and relief loan will boost up the reopening fishing sector including fishing activities, production, processing and trade.** The distribution of relief loan should be conducted based upon needs and operational relevancy. The selection of beneficiary needs to be conducted in transparent way. The existing financial institution and credit schemes from government and private sector can play significant roles to distribute financial resources in timely and effectively.
- 4. Food distribution and support** is still needed to provided to low income households for a certain period 6-12 months. Five units of food items provided by the government are basic and relevant. People in need could be serve with the immediate supports of family food and minimum cash under emergency response.
- 5. Resuming of fresh products and sea food processing** needs immediate supports for safety and health check certification by FDA. Fisheries products and processing facilities are required to impose health and safety measures. It needs to monitor to protect workers from COVID-19 and exploitation as an urgent action. DoF and development partners can facilitate consultations of market access.¹²³ Resuming of boarder trade and export of fresh products, vegetables, fruits and sea foods may need bilateral supports.¹²⁴
- 6. Provision of seeds and fingerlings** DoF can facilitate the implementation of CERP on the approval of relief loans for trawlers, jetty owners, seafood producers, and processors in late July 2020. The funds were also approved for fish breeders and fish ponds and supports training and technology for

¹²³ Interview with a staff from the GoMP project

¹²⁴ Interview with chair person of MFPEA by Myanmar Times.

extension services. It also allowed providing fish seeds and fingerlings.¹²⁵

7. Learning from damages and losses

Mobilization of resources is needed to learn across institutional and sector-wise. The existing development projects and programs can provide reflective insights and draw the experiences from field sites. It needs to invite and allow the contribution of fishing communities and CBOs, CSOs who have been resisted and coped for any challenges and disasters.¹²⁶ Donors can facilitate the process of re-orientation and flexibility of funding programs and targeting supports to reach to smallholders and rural fishing communities. Buyers should stay engaged with suppliers sourcing from small fishers. Distributors should ensure trading patterns are maintained and ensured access by smallholders.¹²⁷

8. Minimize unnecessary controls and burdens

To minimize unnecessary controls and burdens, the design and implementation of rescue policy package should be focused per local needs together with prioritization of recovery actions for short-medium-long term time framework.

9. Extension of fishing season can be managed conditional.

Conditional extension of fishing season is allowable and manageable by DOF.

10. Re-opening of processing facilities, entering the processing facilities need safe working conditions and fair prices.

Imposing preventive measures for workers and fishers are required practical conditions of access to health services.

PROPOSED ACTIONS

Proposed Actions	Timeframe
Local Government	
Providing immediate and durable relief packages, aid and loan forgiveness for small-scale fishers and fish workers in the post-harvest sector in study areas.	Short-medium term
Ensuring access of health services by rural people and rural communities for community fisher groups, private and public sector including young fishers, women fish sellers, trawlers, mud crab fishers, aquaculture farmers,	Short-medium term
Prioritizing re-opening of fishing and production activities to provide food security and livelihoods for domestic consumption and exports	Short-medium term
Facilitate implementation of safeguard supply chain in working with private sector in Mon State where fish exports industry is potentially grow.	Short-medium term
Protecting workers from COVID-19 and exploitation from labour abuse and child labours	Short-medium term
Facilitating consultations of boarder trade and international market access	Medium-long term
NGOs, Development Partners and Academia	
Mobilization of resources for market development in both local markets, retail shops and boarder trade exports	Medium-long term
Draw insights and experiences from communities and fishers, field sites to develop and reshaping country programs	Medium-long term
Engage and advocate for the needs of CBOs and CSOs in better fisheries management	Short-medium term
Assisting monitoring in impacts of the fishers and implementation of sectoral and CERP	Medium-long term
leverage coordination and collective actions to support effective respond by government and private sector	Short-medium term
Support responsible market development with respective entities from PPP	Medium-long term
Documentation of nationwide lessons and learning that reflecting socio-economic losses and prepare better resilience fisheries management	Medium-long term

¹²⁵ Hein, Zeyar and Mya Htwe, Chan, Myanmar govt channels funds to support fisheries sector, Myanmar Times, 14 July2020.

¹²⁶ Interview with a lecturer from Zoological Department

¹²⁷ Interview with an owner of fish processing factory from Mon State

Donors	
Re-orientation and flexibility of funding programs and targeting supports to reach to smallholders and rural fishing communities	Medium-long term
Private Sector	
Facilitate strengthening social safeguards and ensuring health preventive measures in fisheries industries	Medium-long term
Safety of workers and market access; buyers should stay engaged with suppliers sourcing from small fishers	Medium-long term
Distributors should ensure trading patterns are maintained and ensured access by smallholders	Medium-long term
Relief and flexibility of credit and loans terms and conditions within extendable and applicable	Short-medium term
Community members	
Strengthen community monitoring system on IUU cases	Medium-long term
Enhance information and communication networks across states and regions to share good fisheries practices	Medium-long term
Participatory learning and action researches on community based fisheries management and natural resource management	Medium-long term

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List of participants in the Study

Respondents distribution	Mobile Survey	KIIs	Total
Fishers	11	7	18
Fish collector	9	3	12
Dry fish processor	4	3	7
Aquaculture farmer	2	3	5
Boat owner	1	3	4
Fish exporter	1	2	3
Mud crab fisher	0	2	2
DOF	0	4	4
Project staff	0	3	3
Zoological staff	0	2	2
MFF	0	1	1
MOC	0	1	1

Total	28	34	62

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