Central Rakhine's Rural Economy

Snapshots of Development Needs

February 2022

MARKET ANALYSIS UNIT

MERCY CORPS

Mercy Corps’ Market Analysis Unit (MAU)

The Market Analysis Unit provides humanitarian and development practitioners, policymakers and private sector actors in Myanmar with data and analysis to better understand the present and potential impacts of COVID-19, conflict and other crises on:

- Household purchasing power, including coping mechanisms, safety nets and access to basic needs;
- Supply chains, including trade, cross-border dynamics and market functionality (particularly as it relates to food systems);
- Financial services, including financial services providers, household and business access to finance and remittances; and
- Labor markets (formal and informal), with a focus on agricultural labor and low-wage sectors (e.g., construction, food service).

Acknowledgements

Authors
Wahyu Nugroho, Dr. Ba San

Mercy Corps Market Analysis team members made valuable contributions to the report. In particular, Dr. Ba San contributed to planning and data collection, and Jonathan Bartolozzi and Jon Keesecker supported in reviewing the report.

Executive Summary

This report aims to help humanitarian and market development organisations better understand specific needs related to the rural economy of Central Rakhine State. While the work of international development partners remains rightly focused on addressing the immediate impacts of the COVID-19 pandemic, conflict and unfolding political events, this report also encourages continued discussion of rural economic development in the region by presenting an analysis of key sectors in the rural economy of Central Rakhine. While focus is given to Central Rakhine, insights in many cases may apply to other parts of Rakhine State as well.

Summary of Current Development Needs. Central Rakhine is rich in natural resources and located at a strategic crossroads of South and Southeast Asia, yet it remains underdeveloped. Climate-induced shocks and stresses, regular outbreaks of inter-communal violence, and the presence of armed and political conflicts have led to widespread displacement, structural inequality, a weak enabling environment, and inadequate infrastructure, services and markets. Yet there are still opportunities for livelihood improvements across different sectors and sub-sectors of the rural economy in Central Rakhine.

Livestock Sector	**Importance:** Livestock is valuable as a source of income, food, social status, and fertiliser for farming. Backyard keeping of pigs and village chickens plays an important role in household income and presents strong opportunities to promote women's economic empowerment. **Current Needs:** Good animal husbandry practices are rare due to limited access to inputs (such as quality weaners, animal medicines) and extension services. Private sector extension and outgrower schemes can be supported to increase scale and improve access to inputs, services, and markets. Biosecurity and food safety are also concerns, with highly pathogenic and infectious diseases potentially jeopardising the sector.
Fishery Sector	**Importance:** Fishing is not just a way of life, it is also vital to the economy. Given the vast coastal area and tidal rivers, fisheries play an important role in providing income as well as a protein-rich diet. The sector also exemplifies diversity, as it offers livelihoods not only to ethnic Rakhine people but also marginalised groups like ethno-religious minorities and/or landless persons. **Current Needs:** The fishery market system offers significant livelihoods for women, who play the leading role in post-harvest handling, processing and retail. This provides an excellent opportunity for women's economic empowerment in fisheries (e.g., through improvement in post-harvest technology and access to better markets). Food safety and hygiene are important but neglected priorities in the sector. In addition, enormous efforts are needed to improve conditions for workers in the fishing industry and other related sub-sectors by tackling safety issues and even exploitation/enslavement.
Agriculture Sector	**Importance:** Many populations rely on agriculture as their main source of livelihood and food. The sector is also a source of seasonal employment for rural people, including landless households. More than 18% of land area is arable, but only 14% of this arable land is used to cultivate different crops. The main crop cultivated is paddy/rice, while seasonal vegetables and oilseed crops—in particular ground nut and other beans—are also cultivated (mostly during the off-season). **Current Needs:** The sector suffers from chronically low productivity and profitability. Farmers lack the knowledge of good agronomic practices, access to high-quality inputs, improved post-harvest technology, and finance for productive investment. The sector is limited by poor connection to improved markets. However, existing practices of value chain financing by off-takers can be leveraged to introduce "win-win" outgrower schemes to engage women productively and to provide producers assured market, stable income, and access to key services.
Forestry Sector	**Importance:** Rich in both tropical rainforests and mangrove forests, Central Rakhine's forestry products are mostly used as material in construction, furniture production, or as a source of energy (i.e., wood fuel). Non-timber products like betel nut also provide income and are an important cultural and social tradition, although evidence points to serious health effects from regular use. In addition to

	providing livelihoods for communities, forests play a crucial role in delivering ecosystem services. Mangroves can serve as a natural buffer against cyclones and intense monsoon rains, and they stabilise shorelines. These nutrient-rich ecosystems also serve as biodiversity hotspots and help the environment by reducing carbon dioxide emissions that cause global warming. **Current Needs:** Developing diversified livelihood opportunities for those relying on illegal timber logging or firewood collection in permanent forests or other protected areas, along with improved policies and enforcement, is integral to tackling illegal logging and trade. Similarly, any efforts to reduce production and consumption of betel nut must be paired with alternative sources of income for betel nut and betel leaf growers.

Recommendations. A rural economy is a complex system of people, networks, and institutions on which populations rely not only for their livelihood and well-being but also to cope with and recover from crises during and after they occur. In the case of Central Rakhine, complex and protracted crises mean that extra effort—beyond the usual economic development interventions—is need to address underdevelopment.

To ensure inclusive growth, economic dynamics must be leveraged to address the root causes of underdevelopment. The poor are among the most vulnerable and marginalised groups in Central Rakhine, and typically they are not influential market participants; but they depend on markets for their livelihoods as either consumers, labourers, and producers of goods and services. In this setting, economic dynamics can either exacerbate grievances or foster a sense of community. While it is important to address underlying constraints that stunt the growth of rural economic sectors, issues around structural inequalities should never be overlooked. A market systems analysis should include assessments of existing negative power dynamics based on gender and ethno-religious backgrounds to inform the design and implementation of appropriate interventions.

Facilitating partnerships among key actors and ensuring participation by marginalised groups is important for transformative change in rural market systems. For the economy to be more competitive, robust, and inclusive, it is crucial to work in partnership with the private sector actors who make up the economy. To catalyse market systems change, a strong understanding of incentives is needed along with an assessment of what is feasible and commercially sustainable for these actors. However, interventions should also be designed to ensure the participation of marginalised groups. Interventions must assess the potential for inclusive growth that is sustainable but also generates pro-poor outcomes. Support to value chain actors should utilise a partnership model that incorporates cost-sharing and additionality while also functioning at the nexus of business and development objectives.

Helping local actors become development facilitators can achieve early wins and long term sustainability, ultimately leading to more sustainable development outcomes. Economic development aims to reduce the dependency on humanitarian assistance and enable long-term sustainability, yet protracted crises also require that development support produce early wins for actors to bounce back from immediate challenges. This requires short-term direct support that builds on existing market systems and reduces harm to local market actors. Local organisations that are integrated into communities are best positioned to understand local needs, link actors and respond appropriately.

Conflict-sensitivity in rural economic development remains essential to unlocking broad economic growth. An analysis of the political economy and conflict dynamics, in conjunction with a market systems analysis, is critical to understanding fragile contexts. A conflict-sensitive approach is therefore of the highest importance. This involves an understanding of power and conflict relationships, vested interests and elite capture, as well as formal and informal governance at national and local levels.

Background on Central Rakhine

Central Rakhine generally describes the area north and east of Sittwe town, including the Kaladan River valley and the area east to the Arakan Mountains. It typically includes both Sittwe District (Sittwe, Rathedaung, Ponnagyun, Pauktaw townships) and Mrauk U District (Kyauktaw, Mrauk U, Minbya, and Myebon townships). Sittwe is the main trading hub for the region and largest town in Rakhine State.

Total population: 1,204,714[1]

Ethnicities: Central Rakhine is home to diverse ethnic groups with different cultures and traditions. Ethnic Rakhine people make up the majority of the state's population, followed by a considerable population of Rohingya. Other ethno-religious minorities include the Thet, Kaman, Chin, Mro, Khami, Dainet, Hindu, and Maramagyi.

Religions:[2]

Economics: The major economic sectors of Rakhine State include agriculture, fisheries, hotels and tourism, and oil and gas. However, Rakhine State's per capita GDP is 25% below the country average and the state has the highest unemployment rates in the country. Rice cultivation is an important sub-sector for Rakhine but the landless rate is high, accounting for almost one-quarter of the population. The landless population is economically vulnerable and dependent on fishing-related activities and seasonal daily labour, mainly in paddy fields.[3]

Poverty & Injustice: Seventy-eight percent of Rakhine State's population lives below the poverty line. People in Rakhine have less access to sanitation, drinking water, and electricity than in any other state in Myanmar. Denial of citizenship rights and severe restrictions on movement for most Muslims in Rakhine also means they cannot access basic services and livelihood options. Internally displaced people in camps have no access to land, depleted assets and very limited income generation options.[4]

Retail Markets in Central Rakhine: Each township in Central Rakhine has its own primary retail market which is linked to Sittwe. Myoma market (formerly known as the New Municipal market) is the main market in Sittwe and Central Rakhine. Located on Strand Road on the eastern part of town, the market is near to the Kaladan river. Near the main market is a jetty used to connect Sittwe by boat to neighboring villages. Sittwe has many shops selling both food and non-food items, and Myoma Market plays an important role as a hub for traders and other market actors from throughout Central Rakhine. In addition to agriculture and fishery products, other items like shoes and clothing, medicines, kitchen and household utensils are also available.

Major Development Projects in Rakhine State: Currently, there are two major investment projects in Rakhine State that will impact the economy of Central Rakhine.[5] First, the Kyaukphyu Special Economic Zone in Southern Rakhine is an important asset in the China-Myanmar Economic Corridor and part of China's Belt and Road Initiative. It includes a deep sea oil and gas terminal that connects the Shwe gas field in the Bay of Bengal with two natural gas and oil pipelines leading to China. It is also an important connecting point for the planned high-speed Kunming - Muse - Mandalay - Kyaukphyu railway project. Second, the Kalandan River Multimodal Transit Transport Project in Central Rakhine is a US$484 million project offering a sea route between the eastern Indian seaport of Kolkata with Sittwe seaport. In Myanmar, it will link the Sittwe seaport to Paletwa in Chin State via the Kaladan river boat route, and from Paletwa by road onward to Mizoram state in Northeast India. Many components of the project have been completed, such as the Sittwe port, river dredging, and Paletwa jetty, yet the Zorinpui-Paletwa road has yet to be constructed. Originally, the project was scheduled to be completed by 2014, but recent reports suggest the end-to-end project may not be fully operational before March 2023.[6]

---

1 The 2014 Myanmar Population and Housing Census

2 Ibid 1

3 https://www.lift-fund.org/en/geographic-zone/rakhine

4 https://www.worldbank.org/en/news/statement/2019/06/12/the-world-bank-and-myanmars-rakhine-state

5 "Rakhine State Investment Opportunity Survey." Myanmar Investment Commission, et. al., 2019.

6 https://theprint.in/diplomacy/110-km-road-is-final-challenge-for-long-delayed-india-myanmar-kaladan-connectivity-project/629247/

Table of Contents

Executive Summary 3

Background on Central Rakhine 5

Introduction 7
- Background & objective 7
- Structure of the document 7

PART 1: SNAPSHOTS OF KEY SECTORS 8

The Livestock Sector 9
- Pig/Pork 9
- Chicken and Egg 11

The Fishery Sector 13
- Wild Capture Fishery Products 13
- Shrimp 15
- Mud Crab 17

The Agriculture Sector 19
- Rice 19
- Fresh Vegetables 21
- Groundnut 23

The Forestry Sector 24
- Hardwood Timber 25
- Mangrove 27
- Betel Nut 29

PART 2: CROSS-CUTTING THEMES 31

Support Services 32
- Financial services 32
- Transport and telecommunication services 33
- Electricity 34
- Labour access 34
- Government or non-governmental agency support services 35

Business Enabling Environment 35

Structural Inequalities and Climate Change 38
- Structural Inequalities 38
- Climate-induced Shocks and Stresses 39

CONCLUSIONS AND RECOMMENDATIONS 40

Conclusions 41
- Key Sectors 41
- Cross-Cutting Themes 42

Recommendations 42

Introduction

Background & Objective

This report aims to help humanitarian and market development organizations understand the breadth of current issues related to the rural economy of Central Rakhine. The report mainly focuses on rural livelihoods as the majority of the population makes a living in rural areas. However, since the value chains that engage the rural population cannot be disconnected from the broader market systems (both within each core market and in supporting functions, enabling business environment, and other aspects) the report also covers relevant information about the urban or peri-urban economy.

As the work of international development partners remains rightly focused on addressing the immediate impacts of the COVID-19 pandemic and ongoing effects of conflict and political events, this report encourages continued discussion of rural economic development in the region. It aims to achieve this by putting together primary data based on key informant interviews conducted by the MAU team to capture data on different sectors within the rural economy of Central Rakhine. These sectors include the livestock, fishery, agriculture, and forestry. Secondary data was also a major source of information for the report. As indicated, some information refers to Rakhine State more broadly (both Central, Southern, and Northern parts of the state). While focus is given to Central Rakhine, insights in many cases could apply for the other parts of the state as well.

The overviews and snapshots presented are intended to be only explorative in nature, so further investigation is strongly recommended. The document covers key information that can be used to get a sense of the general dynamics of key sub-sectors, key constraints and opportunities, and current needs for rural economic development in Central Rakhine. The key sectors were selected by the MAU team by considering their importance for livelihoods in the rural economy. However, this is not to suggest that they are priority sectors for economic development generally, rather they are an entry point for further scoping and engagement with stakeholders.

Report Structure

Part one presents snapshots of different sub-sectors in Central Rakhine State. These snapshots are grouped into two main categories of Key Sectors and Cross-Cutting Themes. Each snapshot presents the relevance of the sector to the local economy, the value chain structure, the impacts of COVID-19 and recent political events, and areas in need of development assistance.

Part two addresses cross-cutting challenges affecting various sectors of the economy in Central Rakhine. It focuses on describing the support services, the overall business enabling environment, and issues around structural inequalities and climate change that directly affect rural economic development in Central Rakhine.

Finally, the “Conclusions and Recommendations” section offers a summary of overarching constraints and opportunities, a summary of existing needs, and recommendations for future rural economic development in Central Rakhine.

PART ONE: SNAPSHOTS OF KEY SECTORS

The Livestock Sector

Small-scale household livestock rearing in Central Rakhine comprises both large (cattle, buffalo) and small ruminants (goat) as well as pigs. Better-off households usually keep a couple of cattle or buffalos as draught animals, while goats are popular livestock among landless households. In addition, poultry production also prevails across the state. Most households raise pigs and poultry both for income and food. Many times, displacement and violence result in severe reduction of livestock and poultry ownerships.[7]

Pig / Pork

Importance. In Central Rakhine, pig is a valued source of income as well as food, social status and manure for fertiliser. Many rural households, especially those in non-Muslim communities, as well as those on the edges of towns, keep pigs. In general pigs are used for their meat and sold at local markets. Despite some constraints that limit its growth, the pig sub-sector has been showing positive growth over the past years. This growth has mostly been driven by the increased demand for consumption—as indicated by the steady increase of pork prices in local markets over the past years.

Value Chain Map and Actors. Along the pig/pork value chain in Central Rakhine, different market actors, including private and public, interact with each other to bring the products to end consumers.

Pig Breeders – Breeders produce weaner piglets for fattening. There are a relatively limited number of pig breeders across Central Rakhine, they are mostly small-scale. It is projected that these farms have not been able to fully supply the local demand. The current price of a weaner pig of local breed is MMK 90,000 to MMK 120,000. Some producers would go to Yangon to get a branded cross-bred weaner produced by CP or Sunjin that will cost around MMK 160,000 in Yangon. Many breeders also provide 'mating services' by providing boars for breeding services for female pigs and charging MMK 30,000 per time.

Community Animal Health Workers (CAHWs) and Agri-input Vendors – Only a few pig owners have access to trained CAHWs, therefore many follow the advice of neighbours or people known locally for their expertise. Traditional preventive measures such as the use of lime powder as a disinfectant are popular. Farmers also often turn to antibiotics, which can be bought from agri-input vendors. Unfortunately, these vendors don't have sufficient knowledge to share with producers, also no guidance of vets or CAHWs is available, which turns into inappropriate treatment of sick pigs.

Pig Producers – They are generally households that raise 2-3 or more pigs through a traditional method. They source piglets from breeders or from their own production. The average body weight of local bred pigs at the market size is around 35 viss and the fattening period after weaning is around 3 to 4 months. In some pig production areas, it is common that households that raise pigs are also rice and liquor producers (Box 1).

Box 1: Rice, Liquor and Pork
In Sittwe township, Thein Tan village is one of the main pig producers in Central Rakhine. It is projected that 90% of households raise pigs for income. Interestingly, for these households, in addition to raising pigs, most of them also produce local liquor made from rice. Rice is a major ingredient in liquor production, and by-products from the traditional liquor production are used to feed pigs. There are some other villages in other townships that practice this approach. In the local markets, it is known that liquor-by-products feeding pork meats have a pale white color—which is generally preferred, while pork fed with other feed is reddish.

Collectors or Traders – They are middle-persons who buy pigs from small-scale pig producers at village-level and sell them to sellers or local abattoirs (usually through buying agents). Sometimes these collectors/traders also send their pigs to a slaughterhouse and supply the produced pork to sellers. In this case, butchers slaughter pigs at around 4:30 AM. They will then go to markets and arrive at around 6:00 AM to transfer the pork to respective sellers. These pig collectors or traders use trucks or boats to deliver pigs or pork.

[7] "Special Report, the 2018 FAO/WFP Agriculture and Food Security Mission to Rakhine State, Myanmar." FAO and WFP, 2019.

Local Abattoirs and Buying Agents – They are traditional slaughterhouse operators rather than modern abattoirs. In many cases, these local abattoirs are also traders who have buying agents to source pigs from producers and supply the pork to sellers. Butchers will remove the hairs of slaughtered pigs by using hot water and a blade. The butcher collected the blood of killed pigs and put in boiled water to make blood clots. In some cases, pork sellers have already bought pigs that are kept at the local abattoir one day ahead to be slaughtered and delivered.

Sellers – Most pigs and pork produced are mostly for local demand, sold at local markets. Key local markets, like Myoma Market in Sittwe, will have around 4 to 5 retailers (majority women) that sell pork meat. Some sellers also sell pigs. In other town markets in Central Rakhine, the number of sellers is likely fewer or the same. These sellers usually arrive at markets around 6:00 AM and wait for the arrivals of their suppliers. Pork sellers usually do not sell boiled blood clots. Blood clots are sold by boiled bean sellers in a different location of the market.

Box 2: Pork Prices
In local markets, there are three price categories of pork meats. The priciest one, is lean meats and internal organs that usually costs around MMK 16,000 per viss. The pork belly (or other part of pigs with layers of meat and fats) will cost at around MMK 14,000 per viss. For the head part, its price is cheaper at around MMK 10,000 per viss. The bones (with some meats attached to it, i.e., coming from spare ribs, legs) will be sold cheaper. These prices are significantly higher than last year, when it was around MMK 10,000 per viss for meats, internal organs or belly.

Processors – There are some households who produce small-scale pork sausages as a domestic business in Sittwe and other smaller towns across Central Rakhine. The sausages are sold in local markets, stores or directly to end customers.

Impacts of the Double-Crisis.[8] The direct negative impacts of the pandemic has been substantial decrease in livestock production due to self-consumption or selling of livestock to make up for the lack of income. The stay-at-home orders have also stopped people from going outside, which reduced demand. At the same time, accusations of animal theft were widespread. It was reported that the livestock industries sought to resume normal operations in August 2020 but were again impacted by a second, more serious wave of COVID-19. The disruptions resulting from the political and economic crisis following the February 2021 events have further reduced the demand for pork and its products as consumer purchasing power has also decreased. Meanwhile, to protect the supply of feed for farmers, the government continues to ban corn imports.[9]

Box 3: Rumors of Pig Disease Outbreaks
Pork (and other products) is usually sold in local markets on elevated concrete platforms around two feet from the floor of the pathway and buyers can check the meat by touching, since the pork is displayed openly. Diseases transmitted between pigs and from pigs or pig meat to people can damage livelihoods and wellbeing. If there is a rumor of the death of pigs due to an unknown disease, then many consumers avoid buying and eating pork. The demand for pork will then drop, although it does not take long for the consumers to buy and consume pork again.

Current Needs:

- Backyard pig keeping is a common method used, while more intensive farms are slowly emerging to meet the growing demand of pork products. One of the constraints faced by pig growers is limited access to quality weaners or piglets. In addition to the limited number of breeders, there is no artificial insemination for breeding sows in Central Rakhine, despite the fact that such practices have been widely applied in some other parts of Myanmar.
- Limited technical staff of the Livestock Breeding and Veterinary Department (LBVD) as well as CAHWs means that access to animal health and extension services for pig growers are very limited. The most common pig diseases in Central Rakhine are skin disease, coccidiosis, hog cholera and typhoid. In addition, inappropriate

[8] The "double crisis" refers to the COVID-19 Pandemic and the events following the February 1, 2021 government takeover by the military.
[9] https://www.trade.gov/country-commercial-guides/burma-agriculture

use of antibiotics—which is common, can increase antimicrobial resistance (AMR). Loss of a pig and its reduced productivity result from misdiagnosed disease or inappropriate treatment.

- Biosecurity and food safety along the pig/pork value chain are big concerns. Quality of pork meat produced and sold is very low. Market facilities are very basic. No cold facilities are available and used for both transporting and storing. Regular inspections by the respective personnel from the public health department is rare.

Chicken and Eggs

Importance. Chickens and eggs are two common animal protein sources for home consumption in Central Rakhine thanks to acceptance (i.e., in terms of cultures and religious beliefs as well as its nutrient value), affordability, and availability. They also play a vital role in the rural economy. They provide income to the family in addition to securing the availability of nutritious food. Specifically, women can also earn an income through backyard poultry production. Local demand for chicken meat and eggs is high. The demand has been mostly met by local production. Demand for chicken meat and eggs is expected to continue increasing due to population growth and rising individual consumption.

Value Chain Map and Actors. In general, there are three types of chicken and eggs available in the local markets (Box 4). Village growers who grow village chickens in their backyard and commercial farms who produce layer and broiler chicken and eggs in a more vertically integrated production system, are two key market players along the value chain.

Box 4: Three Types of Chicken
Commonly, chickens in the markets are categorized as: (i) village chicken, (ii) layer chicken, and (iii) broiler chicken. While layer chicken is mostly for producing eggs, its meats are also sold—especially once they are no longer productive. Meanwhile broilers are grown mostly for their meat. Meat and eggs from village chickens differ in appearance and taste from those that come from layers and broilers, and in general consumers prefer village chicken meat and eggs—therefore they are pricier. Village chickens mostly graze in the open, and therefore the meat is slightly tougher. But when cooked, it is juicier and soaks in spices better. Some consumers often consume village chicken eggs because they believe it gives more benefits for health than other eggs. This may be due to village chicken eggs being smaller than layer farm eggs in size and egg yolk being larger. Nevertheless, the availability of village chickens and eggs are limited while that of commercial layers/broilers ones is much better. When there are cultural and religious events such as meal donations at monasteries, there is more demand for layer or broiler chicken meats.

Livestock Feedstuff Companies and Private Sector Agents – In recent years, Myanmar has experienced a rapid growth in animal feed production, driven by investments made by multinational companies, like Charoen Phokpand (CP), Japfa Comfeed and De Heus. While local feed companies still play an important role in supplying feed, these larger companies, with CP leading, have now occupied the majority of poultry feed supply market shares in Rakhine State. CP owns a sub-office in Sittwe and they have been implementing outgrower schemes with selected poultry hatcheries and growers. In addition, there are a few private agents distributing livestock feedstuff, feed additives, and veterinary drugs to input vendors or directly to commercial hatcheries or growers.

Small-Scale Poultry Hatcheries – This actor plays an important role in supplying chicks of layers and broilers. They are usually engaged in outgrower schemes with CP or other private companies to ensure reliable supply of chicks for chicken and eggs producers. CP and other large private companies will provide technical support embedded in the purchase of feed, additives, or drugs through input vendors and agents. Some commercial poultry hatcheries or farms will source poultry drugs and feedstuff, in particular concentrates, from these companies directly as prices are more reasonable.

Community Animal Health Workers and Agri-input Vendors – Similar to the pig sub-sector, access to trained CAHWs for chickens and eggs production is also very limited. Agri-input vendors sell animal feed and veterinary drugs. Insufficient knowledge of these vendors and low monitoring from the LBVD and other relevant departments, in addition to lack of veterinary service access, turned into inappropriate treatment of sick chickens resulting in low productivity and risks of disease outbreaks.

Chicken and Egg Producers – Village chickens and eggs come from rural areas—mostly produced through traditional backyard production—while layer/broiler meat and eggs come mostly from more commercial farms in the peri-urban areas. Villagers rear village chicken on a small scale and mostly free range with limited supplemental feeding being provided. Meanwhile, commercial poultry farms grow their chicken in enclosed vicinities. There are around 50 layer-farms with capacity of 500 to 2,000 birds in each and 100 broiler-farms with capacity of 500 to 1,000 birds in each farm in Sittwe area. It is projected that there are some more of similar farms outside Sittwe across Central Rakhine.

Collectors and Traders – Chicken buyers reach villages and buy chickens and eggs from poultry growers and then sell chicken meat and eggs to sellers in the local markets or stores. Live-bird selling in the markets is uncommon, especially for off-layers and broilers, and chicken traders mostly sell slaughtered birds. Many of them slaughter chickens by themselves with no regular monitoring in terms of food safety and biosecurity from relevant authorities. Local suppliers of chicken and eggs transport to the market by motorcycle or car and carry them in baskets. Chicken collectors can get a large number of birds from commercial farms and their supply goes directly to the retail sellers in the market. Unlike off-layer eggs, which some of them also come from outside Rakhine, poultry meat coming from outside Rakhine State is uncommon.

Chicken Meat and Egg Sellers – In main town markets like Myoma Market in Sittwe, there are around 20 retail sellers of chicken meat with an estimated total daily demand of around 600 to 1,000 heads of birds. Retail sellers sell chicken meat in whole bird or in parts. The sellers provide the service of cutting-up meat upon the request of the consumer. They display chicken meat openly on the elevated floor without being chilled or room. These meat sellers are not selling eggs. Eggs are being supplied to and sold by many more stores or vendors across local markets and communities.

Box 5: Chicken Prices

Price of the chicken meat is generally stable in the Sittwe market. Price of broiler meat is the cheapest, while village chicken meat is the most expensive. The average price of chicken meat ranges from MMK 9,000 to MMK 12,000 per viss in the local markets. The demand and prices of chicken meat are sometimes influenced by the availability of fish sold in the market. Chicken meat price rises slightly when fish is less available and vice versa.

Impacts of the Double-Crisis. In general, the COVID-19 pandemic has caused an increased demand for eggs as people look for affordable nutritious food. However, there has been limited or no panic buying of eggs reported. At some points during the past year, as a result of online rumors promoting the efficacy of eggs in the treatment of COVID-19, the price of a normal sized off-layer egg went up from around MMK 150 to around MMK 200-250 per piece. But this increase did not stay long and returned back to nearly normal price because of sufficient supply from commercial layer farms. Interestingly, for village chicken eggs the price has gone up from MMK 300 before the pandemic to MMK 400 and it has not returned back. As with many other products, following the aftermath of the February 2021 events, prices of key inputs, like feed and animal medicines have increased due to the combination of fuel and logistics price increases, MMK depreciation, and the nearly-collapsing banking system in Myanmar. Meanwhile, the median price of chicken meat in Central and Northern Rakhine, which increased since June 2021 and reached MMK 9,000 per viss in September, has returned to its price in May of around MMK 8,000 per viss in October 2021.[10]

Current Needs:

- While demand and supply for broiler chickens and layer eggs has overtaken the demand and supply for village chicken, village chicken cannot be overlooked due to people's preference for its meat and eggs and its importance for rural households especially for women (i.e., for income and home consumption). An improvement area for backyard chicken farming is around good husbandry practices—including supplemental feeding practices to improve productivity. Technical transfer of low-cost poultry feed production will benefit local entrepreneurs because raw materials such as broken rice, rice bran, fish meals and bone meals are plentiful.
- CP and other private companies have started to provide private sector-led extension services, especially to off-layers and broilers farms. Such services can complement the LBVD-led services which have been very limited in terms of outreach. These private companies have also started to carry out outgrower schemes to address

[10] "Rakhine State (Oct 2021) Market Price Report." Mercy Corps MAU, October 2021

some constraints to access inputs (i.e., feed, drugs, additives, chicks) as well as improved markets. Providing support to these companies can speed up the uptake and upscale of such private sector-led approaches.

- Similar to pork, the demand for chicken meat is affected by the information of poultry disease outbreak in the area. There have not been major outbreaks from chicken meat and eggs in Central Rakhine, but due to low biosecurity system and food safety, Highly Pathogenic Avian Influenza (HPAI) and other infectious diseases may jeopardize the sub-sector in the future.

The Fishery Sector

Facing directly the Bay of Bengal, the marine capture fishery in Central Rakhine comprises coastal or inshore fisheries, and offshore or deep-sea fisheries. In addition, the region's labyrinth of freshwater and brackish rivers also provides people with a source of fish and other fishery products. The state also has an enormous opportunity to develop aquaculture, in particular fish, shrimp, and mud crab farming to meet the market demand and widen its export market. However, the people are still using traditional methods in fishing and aquaculture. As a result, the production rate is generally low compared with other coastal regions like Ayeyarwaddy and Tanintharyi Regions.[11]

Wild Capture Fishery Products

Importance. The vast coastal area and tidal rivers are home to different fish, shrimp and other aquatic species. Fishing is not just a way of life but also vital for the economy. As such, fish and fishery products play an important role in both providing livelihoods and protein-rich food for the people. The fishery sub-sector also exemplifies the diversity of Rakhine State in that it offers livelihoods not only to ethnic Rakhine, but also marginalised groups, which include displaced persons, ethno-religious minorities, and landless persons.[12]

Value Chain Map and Actors. The seasonal calendar of fishing activity can be divided in two main seasons, a low season from October to April, where fisheries catch is low, and a high season starting in May until August/September when catch is higher. In general, demand for fish and other fishery products are high and expected to grow both for local, national and international markets. As a result, prices have been showing a trend of increasing over the past years but unsustainable fishing practices also continue jeopardizing the sector.

Fishery-input Vendors and Fuel Suppliers – Various types of fishing gear are used to exploit the large diversity of marine species found in Rakhine's waters. The fishing gear is classified into commercial, such as trawl net, purse seines, driftnet and gillnet, and traditional, including hook-and-line, cast net, bag net, trammel gill net, lift net and traps. They can be procured locally at some input vendors or stores in Sittwe, or at local village shops for some traditional equipment. Fuel (in particular diesel) is also a key input being used in fishery, especially for fishing vessels. It is usually obtained from fuel suppliers.

Labourers – Fishing, especially using large vessels, is reliant on labour. Many of the labourers used in fishing boats in Rakhine are coming from minority groups in Rakhine or migrants from other parts of Myanmar. Unfortunately, a range of unsafe and exploitative labour practices are increasingly apparent.

Local Fisherfolk – They are fisherfolk using either manual canoes to catch fish, shrimp or crabs in riverine and estuarine systems using traditional gear (such as crab trap) or small engine boats for fishing at coastal or inshore fishing areas.[13] Some fisherfolk also use push nets and cast nets that do not necessarily require a boat and are used by poor households during the rainy season when access to fishing grounds is limited by weather conditions. Hook lines are used for large-sized fish like sea bass. A specific drift net (used to catch hilsa) and fence nets (to catch shrimp post-larvae or PL) are less common, as they require high investment and need to be operated by at least two boats. Penaeid shrimps (discussed in the next section) and demersal finfish are caught using otter bottom trawl nets.

[11] Ibid 5

[12] "Small Scale Fishermen in Rakhine State." Saw Ehh Htoo, Independent Journal of Burmese Scholarship, 2016.

[13] "Fishery and Aquaculture Country Profiles, the Republic of the Union of Myanmar." FAO, 2019

***Foreign Fishing Vessels* –** They fish in the deep water (offshore or deep-sea fisheries). Foreign fishing vessels use improved tech equipment, like fish aggregating devices (FADs) so they can catch more fish from the sea. The purse seine is a major fishing gear, used to exploit the pelagic fish resources or anchovies. However, catching efficiency of this gear has not improved through the years. There are relatively few new fishing techniques to increase fishing pressure on stocks of small pelagic species. Drift netting and gill netting are also common, mainly to target higher valued commercial pelagic fish species.[14]

Box 6: Swim Bladders: Demand vs. Protection
There are more than 50 shark and 70 ray species in Myanmar. Among them, 13 shark and 14 ray species are priority species marked for protection. But enforcement is an issue. Demand for large fish swim bladders, shark fins, stingray skins are always high for export to China. The swim bladder of kingfish is the most expensive and the bigger the size, the higher the price. Buyers collect these parts in the fish market, dry them, and export them.

***Shrimp, Fish, Crab Farmers* –** Polyculture system is widely used, whereby fish, crab, and shrimp (following sections) are grown together in the same ponds. These farmers are one of the main buyers of PLs and crablets, caught by fisherfolk. These fish/shrimp farmers will then grow the PLs to full size in coastal or inland ponds.

***Traders* –** Some fish traders buy fishery products from foreign fishing vessels and sell them at the Sittwe market. The fish are sardines, mackerel, bream, butterfly fish, catfish, eel, grey mullet, herring, hilsa, stingray, shark, sturgeon, tuna, sea bass, puffer fish or fugu, prawns of sea tiger, sea white, sea pink, lobster, mud crab, squid, octopus and some other fish. Some freshwater fish such as climbing perch, black catfish, snakehead fish, etc. are also available in the market. Freshwater fish such as carps, imported from outside the Rakhine State, are also sold in small amounts in the fish market because consumers prefer marine fish more. Fish traders and local fishermen sell their fish at the fish market through fish agents and retail fish sellers. They also supply fish and other products to processors. The use of ice blocks to maintain quality is a common practice for long trip transportation.

***Fish Processors* –** Fish and other fishery products not consumed immediately or not sold by small fishermen are processed. Drying, pasting and making crackers out of fish or other fishery products are common processing done through simple methods by small-scale processors. Some large processors pack and ice fish or other products for transport to Yangon, Mandalay, Muse and China markets. There are four fishery product-processing factories in Sittwe with a total capacity of 550 tonnes where fish/shrimp/crabs are frozen and fish paste and dried fish are produced.[15] Interestingly, neither fish sauce nor fish meal is locally produced here.

Box 7: Fish Paste and Crackers
Fish or shrimp paste is an essential condiment for cooking in Myanmar. Most households buy fish paste in advance before the rainy season for the whole year's consumption—with an average family with 5 members stores around 3-4 viss of fish paste. Fish paste is produced as small business at fishing villages through pounding small fishes or shrimps. Fish paste production is seasonal and mostly available in winter season and summer season. Most consumers prefer fish paste produced during the winter season because it is mostly free from dust. Fish crackers are made from seer fish. Some households make fish crackers and produce as branded and well-packed products. They buy mackerel fish from fish agents and produce fish crackers. There are more than a dozen producers of fish crackers in the urban area of Sittwe, as demand is good in local markets.

***Sellers and Agents* –** Retail fish sellers sell fish whole or by cutting them in parts, depending upon the size and types. They do not freeze or put on ice while selling fish because most of the consumers do not like ice-packed fish. No scale is used, since fish is not sold based on volume but number of fish or fish cuts. Most of the fish sold are dead. Consumers judge the freshness of fish by checking the color of the gills and texture of the body. If it has a mild scent and moist flesh, while the gill color is light red and the body is stiff, it is mostly fresh and suitable to buy for consumption. Unlike fish, shrimp sellers use scales for weighing, while mud crabs sold in the market are alive.

---

14 https://www.fao.org/3/ad497e/ad497e05.htm
15 Ibid 7

Impacts of the Double-Crisis. During the stay-at-home period, fish availability was lower than usual. Fishers and traders limited their time to catch or sell fish. Demand was also down. Many consumers, who would usually do their shopping daily, bought fish and meat less often, but in greater quantities (e.g., three or more days) to reduce their time outside. While Myanmar had its sights set on a record-breaking year for fishery exports until the coronavirus pandemic swept away orders,[16] the economic shocks resulting from the political crisis (i.e., increased prices, dysfunctional financial system, closing of border trade, etc.) further undermined the development gains in the sub-sector over the past years, which has been reflected by the stable growth in demand for fishery products in local, national and international markets up until the pandemic.

Current Needs:

- The fishery market system offers significant livelihood for women, who play the leading role in post-harvest handling, processing and retailing activities. This provides an excellent opportunity for women's economic empowerment in fisheries.
- Across Rakhine State there's only nine cold storages to process fishery products.[17] In general, the sector's post-harvest techniques and technologies are outdated. Drying, for example, is done using traditional rack sun-drying on the shore.
- The use of trawl nets within coastal waters has resulted in the current intensive exploitation of the coastal demersal finfish and penaeid shrimp resources. While policies to limit overfishing and to promote sustainable fishing are available, enforcement is weak, leading to overfishing especially by foreign fishing vessels, resulting in a decline of fish stocks in fishing grounds.
- Physical abuse, labour exploitation and enslavement are frequently observed and experienced among fishery workers. Enormous efforts are needed to improve conditions for workers in the fishing industry and tackle exploitation and safety concerns.

Shrimp

Importance. In Central Rakhine, shrimp (mostly *Penaeus monodon*) come from both wild capture fisheries as well as shrimp pond aquaculture. This section focuses more on shrimp aquaculture. Similar with the wild capture fishery, the cultured shrimp farming exemplifies the diversity of Rakhine State beyond the ethnic majority (Rakhine), but also displaced persons, ethno-religious minorities, and landless persons. The shrimp market system has significant potential to provide sustainable livelihoods for diverse communities. Shrimp production rates highly for its importance to food security, being a key source of protein for domestic markets across Myanmar. Shrimp production and processing is also highly labour intensive, providing employment for large numbers of people due to low levels of mechanisation with broad scope for improving labor conditions.

Box 8: Unconducive Enabling Environment
Rakhine's shrimp sub-sector (as well as fishery, in general) is characterized by restrictive and discriminatory regulations in place of growth-oriented governance; low levels of interaction, coordination and trust among value chain actors; and lack of participation of value chain actors in decision-making concerning the sub-sector, particularly among women and minority groups.

Value Chain Map and Actors. The shrimp sub-sector in Central Rakhine is considered undervalued, with a potential for inclusive growth. Within the Rakhine fisheries sector—which includes offshore marine fishing, inshore brackish and freshwater fishing, and aquaculture—there exists an extensive shrimp aquaculture sub-sector that hosts two-thirds of all shrimp ponds in Myanmar.[18] However, shrimp-engaged households are comparatively worse-off economically

[16] https://www.frontiermyanmar.net/en/fisheries-sector-calls-for-government-rescue-amid-covid-19-fallout/

[17] Ibid 5

[18] "Myanmar Country Environmental Analysis Sustainability, Peace and Prosperity Forests, Fisheries and Environmental Management, Fisheries Sector Report." International Bank for Reconstruction and Development, the World Bank, 2019.

because they often do not own land, and access productive infrastructure and resources that are highly vulnerable to shocks associated with cyclones and other extreme weather events.

Suppliers Post-larvaes (PLs) or 'Baby Shrimp' – They include hatcheries, fisherfolk, as well as large fishing vessels. Fisherfolk and fishing vessel operators are already covered under the previous section. Fisherfolk and fishing vessels operators supply PLs to fish farmers. Due to overfishing, the volume of wild catch PLs are reducing overtime. Meanwhile, hatcheries breed PLs and therefore are elemental for shrimp aquaculture development in Central Rakhine. There are both government- or private-run saltwater hatcheries in Rakhine, with government hatcheries still more productive than the private ones. There is a new plan by DoF to establish freshwater shrimp hatcheries in Mrauk U, Ponnagyun, and Kyauktaw.[19]

Box 9: Key Stressors for Shrimp Farmers
Shrimp pond farmers experience precarity in their livelihoods because of stressors such as conflict, market constraints, and extreme weather, including cyclones and storm surges which can cause extensive damage. Moreover, the depletion of aquatic resources caused by the degradation of mangroves leads to the stress of inconsistent supply of baby shrimp as the primary input for both ethnic Rakhine and Muslim shrimp farming, further undermining livelihoods.[20] For Muslim shrimp producers these vulnerabilities are further exacerbated by movement restrictions which limit their income-earning possibilities.

Labourers – The majority are youth working as pond 'watchmen' responsible for pond maintenance and shrimp feeding. Many were hard hit financially by COVID and had to be paid in-kind with shrimp, not cash. They experience poor working conditions, especially long hours and low wages. On average, farmers employ 5 workers per 10 acres, of which approximately 20% are family members and 80% are hired labour. Women are involved in pond construction and embankment repairs.[21]

Shrimp, Fish, and Crab Farmers – Pond farming is done by using polyculture systems, whereby fish, crab and shrimp are grown together in the same ponds. This system is less productive but considered to be more sustainable. These are smallholder farmers most of whom are ethnic Rakhine after a substantial number of Muslim pond farmers lost their ponds due to conflict and cyclone damage in the past decade. Suboptimal pond management practices are common among this group. The challenges they face to increasing shrimp production include unsustainable access to 'baby shrimp,' unaffordable financing, and climate-related shocks and stresses. Evidence suggests more than half of shrimp ponds in Rakhine are dormant, having been abandoned due to damage sustained in successive cyclones and the impact of conflict, pushing households out of productive roles.[22]

Traders, Processors and Sellers – They are similar to fish traders, processors and sellers and have already been covered in the previous section.

Box 10: Gender in Shrimp Processing
The majority are women from multiple ethno-religious backgrounds who are involved in cleaning, sorting, drying and processing raw shrimp, and packaging the final product. Processing is mostly done manually at the household level with family members assisting. Women's alternative livelihoods during shrimp low season include growing rice and vegetables, raising animals (cows, goats, chickens), selling crabs and fish as local vendors, and sewing. Socio-cultural norms limit women's ability to interact with male actors in the value chain.

Impacts of the Double-Crisis. Shrimp farmers interviewed by Mercy Corps in January 2021 reported a 30-50% reduction in production in 2020 due to lack of access to critical inputs and a decline in market prices. Revenues from shrimp buying and trading, an activity in which women have a significant role, dropped by a reported 60%, primarily due

[19] https://www.dmediag.com/news/3510-shrimp-hatchery
[20] "Mapping the Extent of Mangrove Ecosystem Degradation by Integrating an Ecological Conceptual Model with Satellite Data." Lee, C. K. F., et al., MDPI, 2021
[21] Ibid 14
[22] Ibid 18

to lockdown of export market borders and transportation routes. Almost 50% of 'baby shrimp' collectors at village level lost their jobs. Meanwhile, shrimp processors, almost all women, experienced an estimated 50% drop in income and were forced to terminate 70% of workers due to suspended orders for shrimp products. The majority of terminated labourers were unable to find alternative sources of income. Similar to the situation faced by the wild catch fishery sub-sector, the events since February 2021 have further jeopardized the shrimp sub-sector. Overall, aquaculture exports, including shrimp from Rakhine, decreased. In FY 2020/21, Myanmar only exported USD 640 million in aquaculture products, which is USD 110 million less than FY 2019/20.[23] To push production and trade, it was reported that the State Administration Council (SAC) will provide loans to the livestock, fish and shrimp farming sub-sectors with an interest rate of one percent for one year.[24]

Current Needs:

- Galvanising shrimp productivity in Central Rakhine requires improving farmers' access to PLs. Support is needed to rehabilitate hatcheries; introduce more productive brood-stock varieties. Specifically for government hatcheries, support will also include operationalizing a market mechanism for sustainable distribution of PLs to shrimp farmers that will out-last the program.
- Climate-induced stresses faced by shrimp farmers stunt shrimp sub-sector growth. Assistance to vulnerable farmers should include introducing risk-sensitive pond infrastructure including dykes for protection against cyclones and storm surges.
- An improved access to risk information i.e., via ICT/mobile-based weather information and early warning systems could benefit the sub-sector to mitigate against climate change.
- To improve shrimp production in Rakhine, dormant and damaged ponds are potential for rehabilitation based on a sustainable intensive model that avoids unchecked pond expansion into fragile mangrove ecosystems.
- Rakhine's shrimp sub-sector (as well as the broader fishery sub-sector) can benefit from the introduction of multi-stakeholder sector co-management arrangements to enable shrimp market system actors to establish an agreed vision and developmental strategy to better collaborate across ethno-religious lines of division. Increased trust, cooperation, and coordination in the value chain, as well as more meaningful representation of minorities and women will contribute to a more conducive and inclusive policy/regulatory environment. Sector co-management is essential for incentivising responsible stewardship of Rakhine's coastal resources, thus contributing to the resilience of the state's shrimp market system.

Mud Crab[25]

Importance. Mud crab is the second most important fishery product (in terms of economic value) in Myanmar after Rohu (*Labeo rohita*), predominantly exported to China and Thailand. Around two-third of mud crabs are intended for export. The majority of individuals who reside in Central Rakhine's coastal communities, as well as those who live near rivers and streams in close proximity to the sea, are engaged in the mud crab (*Scylla serrata*) sub-sector to some degree, and it contributes to their household income. Mud crab capture is a relatively low-intensity activity for men and women, requiring minimal equipment and capital investment (less than MMK 50,000). The most common capturing practice is utilising traps and small boats. Additionally, as a license is not required, the capture is performed by different ethnic minority communities, including those living in Internally Displaced Person (IDP) camps.

Value Chain Map and Actors. In general, mud crab is sold as hard-shell and soft-shell crabs. However, the majority of mud crabs produced in and sold from Central Rakhine are hard-shell crabs. The soft-shell crab production in Central Rakhine is still much lower than in Yangon, Tanintharyi and Ayeyarwady Regions, and even lower compared to Southern Rakhine.

Suppliers of Crablets – As is the case with shrimp, fishers capture different aquatic products, including crabs and crablets in mangrove areas, estuaries to coastal mudflats and trenches. Higher volume and therefore opportunities of capture occur during the rainy season (June to September), while progressively decreasing to its lowest levels in the

---

23 "Burma - Rising Food Prices due to Exchange Rate and Other Challenges." USDA, 2021

24 Ibid 23

25 A study on the COVID-19 impacts on mud crab value chain in Rakhine State was carried out by MAU. The report can be accessed through the link: https://themimu.info/sites/themimu.info/files/mau_public/Report_MAU_COVID-19_Impact_on_Crab_Value_Chain_in_Rakhine.pdf

summer season (March to May). Additionally, optimal harvests for mud crabs occur four to five days before and after full moons, as their behaviour is in part driven by tidal cycles. While mature crabs will go to collectors/traders, the crablets will go to farmers to grow them to a saleable size. Alternatively, they can go to a soft-shell crab producer who will produce and sell soft-shell crabs.

Box 11: Mangroves, the Natural Habitat of Mud Crabs
Mangrove forests are the natural habitat of mud crabs. They usually burrow in mud or sandy mud. The mud crabs also breed there, with cycles occurring between April and May. Mangroves also provide a diverse diet for mud crabs of a wide range of animals and plant resources. The availability of wild mud crab has been significantly decreasing over the years due to mangrove deforestation, in addition to overfishing, capturing female crab and/or crablets who have not fully reached maturity.

Farmers – Crab growers will grow crabs in water ponds. Ponds serve as a suitable resource to allow crablets (juvenile crab) to mature to full size (100 grams), the minimum size to be commercialized. Because of its profitability, commercial soft-shell crab production was gaining popularity before the COVID-19 pandemic. However, this business venture requires significant investments which rural community members are not able to take on.

Collectors / Traders – Collectors and local traders purchase mud crabs mainly from crab fishers and growers and sell them to international traders or importer companies. Although more mud crab conservation efforts are required across Myanmar, certain regulations are enforced and followed by actors in the value chain. Most critically, it is illegal to fish or export live mud crab weighing less than 100 grams. Typically, collectors will not accept mud crabs under 100g (unless they own ponds to keep them). Prices are determined by their weight and mud crab under 100g cannot be exported. Improved mud crab farming practices are required in order to further develop this industry in a sustainable way. Investing in hatcheries and ponds (outside of mangrove areas) could support the industry, adding to the resilience of actors' livelihoods.

International Traders / Exporters and Their Agents – Based mainly in Muse or China, the international traders or exporters purchase live mud crab to sell in Chinese markets. These buyers usually work through buying agents in Mandalay. These agents check the quality of the product, change water and support transport, including changing trucks.

Box 12: Soft-Shell Crabs
Soft-shell crab is a seafood delicacy with the entire crustacean capable of being eaten. Like lobsters, when crabs grow into the size of their hard shell, they shed that shell. This leaves them with a brand new, paper-thin soft shell, which then hardens over the course of a few days. Soft-shell crabs are harvested in the 90 minutes it takes from an old shell being thrown off to the hardening of the skin beneath to create a new shell. Myanmar exports its soft-shell crabs to Hong Kong, China (Taipei), Thailand and Japan after the soft-shell crabs are frozen. Most of the factories which produce the soft-shell crabs are located in Yangon, Thanintayi, Ayeyarwady regions. In Rakhine, most of them are located in Kyauk Phyu township, with some located in Sittwe township.

Impacts of the Double-Crisis. Rakhine's mud crab industry has proven especially vulnerable to the effects of COVID-19 as its value chain is dependent on final export to China. As China dealt with the COVID-19 outbreaks, demand was sluggish. Imposed restrictions, such as border closures, an early measure adopted by the government of Myanmar to stop the spread of the disease, further exacerbated the impact on the industry. The over-dependence on the China border market meant that the political crisis, which has disrupted border trade,[26] has further damaged the crab industry across Myanmar, including Central Rakhine.

Current Needs:

- The conservation of fisheries resources and the maintenance of ecological systems are the main factors in the

[26] https://www.frontiermyanmar.net/en/prices-are-dropping-exponentially-border-trade-hit-hard-as-china-shuts-the-gates/

sustainable development of the fisheries industry in Myanmar. This would include setting up protected areas for crab or conserving their natural habitats such as mangroves.

- The mud crab sector has been significantly growing over the last few years, contributing to the livelihoods of the majority of households in the coastal communities of Central Rakhine. However, the pandemic has revealed that the over-dependency on exporting to the Chinese markets and the unlikely possibility for a quick shift to a domestic market (due to lack of demand and lower prices) are weaknesses in the live mud crab sector. Diversifying market channels would increase, to some extent, the resilience for all actors of the value chain. However, developing the national market would have to consider the obstacle of a significant price increase. As for the community members engaged in the sub-sectors, diversifying their livelihoods in other sub-sectors resilient to constraints created by the pandemic (i.e, the diminishing export market, border closures and the increased cost of transportation), could be a way forward.
- At the moment, the entire mud crab value chain is essentially dependent on its natural breeding. Therefore, conservation and quality of mangrove resources is critical, in order to preserve and further develop the mud crab sector in a sustainable manner. Internationally, mud crab hatcheries have also proven successful in breeding, and the use of hatchery reared crabs is encouraged so as not to deplete the wild population.
- Further research and extension work is required in order to disseminate best practices, including conservation of mud crab resources.

The Agriculture Sector

In addition to fishery, aquaculture and livestock, many populations in Central Rakhine rely on the agriculture sector as their main source of livelihood. Across Rakhine State, over 18% of total land area is arable, but only 14% of this arable land is used to cultivate different crops.[27] The main crop cultivated is paddy/rice, while oilseed crops, in particular ground nuts and seasonal vegetables are also cultivated during off season.

Rice

Importance. Rice is a dominant crop, grown on approximately 85% of cultivated land.[28] In rice production, landless farmers are agriculture labourers or are able to access land through shared cropping or lease. Rice is the single largest source of calories in the food basket of most households, and provides a significant source of income for most rural households. Rice cultivation is also a source of seasonal employment for rural people, including landless.

Box 13: Paddy Growing Seasons
Paddy can be potentially grown twice a year in the areas where irrigation is available, nevertheless the lack of fresh water storage and consequently irrigation infrastructure restrict summer (dry season) paddy production. In Rakhine, the irrigated area is very small, approximately at 5% of the cropped area.[29] Therefore the monsoon (rainfed) season is far more important than the summer one, despite that the irrigated areas yields are usually higher because of better soil moisture control under irrigation. In some low coastal areas, however, salinity of irrigation water becomes a problem, because seawater penetrates deeper in rivers and streams, also infiltrating in underground water layers. The quality of irrigation water is variable and salt contents tend to be high.

Value Chain Map and Actors. Paddy is usually grown during monsoon, from June to November, with summer cereal harvest (January to April) being much lower than the monsoon production. The price of rice (paddy) is lowest after the monsoon harvest and highest in April and May, the leanest and driest months of the year. While Myanmar is a net exporter of rice and Rakhine State is self-sufficient in rice, the contributions of Central Rakhine to the total exported Myanmar's rice is likely very minimal.[30]

[27] Ibid 5
[28] Ibid 7
[29] Ibid 7
[30] Ibid 7

Input Vendors – They are selling different types of agricultural inputs. Among others, agrochemicals are main inputs. The use of chemical fertilizers in rice production is relatively widespread and fertilizers are generally available but application rates in the field frequently differ from those recommended by the DoA, constrained by high purchasing costs. Recommendations typically include urea, Triple Super Phosphate (TSP), Potash (KCl) and a compound fertilizer. Urea is the most popular as it is generally more available.

Box 14: DoA Outgrower Scheme for Seed Production

Rice farmers in Central Rakhine rely on three different seed systems: (1) farmers reproducing their own seeds of both improved and local varieties—which is the most common one; (2) individual seed growers and small-scale national seed companies multiplying improved varieties; and (3) private companies that produce or import hybrid varieties. Specifically, in order to multiply registered paddy seeds produced by the Department of Agriculture Research (DAR), into certified seeds, the DoA contracts selected farmers to carry it out. These farmers received support from the DoA including the seeds to be multiplied, extension and inspection services, as well as fertilizer and plant protection materials. The produced seeds will be then distributed to selected farmers by DoA.

Farmers – In Central Rakhine, rice is mostly produced on the strip of lowlands along the coast. In this setting, farmers are recommended to use a transplanting method where the rice is partially submerged (known as wet rice cultivation). However, due to lack of labor, the seeds are mostly seeded directly (broadcasted), although some transplanting also occurs. Transplanting requires less seed but more labour compared to broadcasting. Prior to transplanting, seedlings are raised in nurseries supported by fertilizer application. Transplanted crops take longer to mature due to transplanting shock. Along the growing season, farmers usually apply agrochemicals to improve soil fertility and to protect plants against pests and diseases. Depending on the seed varieties, paddy growing can take 3 to 6 months.

Collectors, Traders, Wholesalers and Sellers – Intermediaries play important roles in value chains that lack vertical coordination. Four types of intermediaries are generally involved in the rice value chain: collectors at the village level, paddy traders at the township level, milled rice wholesalers, and milled rice retailers. Most intermediaries are independent operators, using their own working capital and selling rice to millers who are willing to meet their price. A few groups of collectors act as employees of traders and rice millers and get a percentage of profits. Intermediaries also distribute milled rice to small and remote villages, as well as district and township markets. Since intermediaries tend to be located closer to farmers, the trust established between sellers and buyers could be one benefit of their activity. Given the poor road infrastructure linking villages and townships and the unorganized value chain, intermediaries may also be efficient in using the most appropriate means of transportation to lower the costs of intermediation between farmers and larger operators such as millers. However, as an additional layer within the value chain, intermediaries increase the final costs of goods, or otherwise reduce farmgate prices.

Box 15: Two Main Groups of Paddy Varieties

In Rakhine and Myanmar in general, paddy varieties can be categorized into two. The shorter-term 90-day varieties, and the longer ones. In general, the 90-day varieties, like thiridon, *shwewartun* and *sinthwelat* are grown around 3-4 months, and have higher yield, but the price is lower. Meanwhile the longer-term varieties, like *pawsan hmwe*, take 4-6 months to grow and yield lower, but offer higher price, sometimes doubled than the 90-day varieties.

Millers – Rice millers collect paddy from January to May, although a small percentage also collect paddy year-round in locations with dry-season paddy production. Rice millers generally have no control over the quality of paddy procured, unless they have entered into a contract with farmers. Procured paddy has a high moisture content, the grain of different varieties is mixed, and the grain is contaminated with foreign matter such as stones, straw, and dirt. Most rice mills lack sufficient storage at the factory site, especially during harvest period when farmers arrive at the same time to sell wet paddy. The maximum duration of storage is estimated at 3–4 months. The high moisture content of paddy requires large drying units, which are lacking. Medium-sized rice mills rely on the clusters of small mills that dehusk paddy and produce raw rice, which they sell to the medium-sized mills for polishing and final treatment.

Other Processors – Other than millers, some forms of processing exist–for instance to make rice noodles, snacks, and liquor–but do not involve a huge amount of milled rice. Byproducts such as bran go to the feed sector.

Impacts of the Double-Crisis. The decrease in cash flow and the following increase in debt has affected households' ability to invest in production. The problem is reflected in mounting debt in absolute livelihood terms, and in relation to the ability of farmers to purchase inputs, pay labour and other services, etc. Farmers have reverted to more traditional cultivation practices to reduce exposure to crop loss, such as reduction in fertilizer and quality seeds use, return to broadcast rice seeding (for those who used the transplanting method) and no weeding. Due to the depreciation of the MMK against the USD, transportation difficulties, decreased rice mill operations, and an anticipated smaller second crop production, on October 6, 2021 the SAC set the basic reference price of 100 baskets at MMK 540,000 for monsoon rice and summer rice crops in 2021/22.[31] This figure is MMK 20 higher than the previous year. However, due to a slowdown in rice export activity, inactive domestic demand, and China's closure of the main border crossings that has significantly disrupted border trade, farmers have received prices lower than the SAC reference price. As prices for fuel, fertilizers, and chemicals have increased, this has driven up the production costs for farmers; combined with this, the scarcity of cash, banking disruptions, and high prices will probably limit how much fertilizer and other inputs farmers can utilize during the next seasons, which could hurt yield.

Current Needs:

- Flooding and storms, as well as pest infestations majorly affect livelihoods. Strong rain and floods wash off not just agricultural lands, crops, prawn ponds and livestock but also homes along the river banks. Saltwater intrusion is a concern across production centers. The combination of strong winds and high tides during planting season hamper the rice planting activities in low lying areas. Many of the poorest members of the village were those living in areas most prone to floods, landslides and strong winds.
- Rice productivity in Rakhine State is still below the high producing areas of Myanmar and well below the Thai and Vietnamese standards. This is mainly due to high costs of farm inputs such as fertilizers, lack of quality certified seeds, inadequate access to markets and credit, poor irrigation and water management infrastructures and poorly developed research, training and extension services.
- Rice quality is compromised because millers or traders usually lack control over the quality of paddy procured through bulk collections, unless millers or traders enter into a contract with farmers. Most mills also have insufficient storage at the factory site, especially during the harvest, when large numbers of farmers supply wet paddy at the same time. High paddy moisture content requires mechanical drying infrastructure that most mill sites lack. Competitive trucking services are not widely available, and constrain transportation efficiency.

Fresh Vegetables

Importance. Vegetables can be cultivated on extremely small plots and yield relatively high profits. Availability of water in most areas (i.e., Rakhine coastal regions, which receive annual rainfall in the range of 2,500– 5,500 mm)[32] and suitable topography for producing off-season vegetables are key advantages for Central Rakhine to produce and sell vegetables not only for local, but also for external markets and thus creating opportunities for increasing income of smallholder farmers and improving availability of nutritious food for the communities. Reliance on imported vegetables provides an opportunity for farmers to substitute them with locally produced vegetables.

Value Chain Map and Actors. There are still large opportunities to improve local production of vegetables in Central Rakhine to replace imported products. In Central Rakhine, vegetables are mainly grown during winter (October - January) and only occasionally grown during the monsoon season (June - September). Summer (February - May) cultivation is rare due to the lack of rainfall, high temperatures, and pest/disease issues.

Input Vendors – Input vendors are actors who procure inputs from distributors/suppliers and are authorized/certified by DoA to sell inputs such as seed, fertilizers, pesticides, equipment/tools to farmers. Other actors such as grocery stores and hardware shops sometimes sell input supplies without proper authorization from concerned authorities. There is a good presence of input vendors at township level market centers, particularly in Sittwe, Mrauk U and Kyauktaw.

[31] Ibid 23

[32] "Climate Change Impacts on Health and Livelihoods." IFRC, 2021

Despite the fact that the presence of input vendors outside those market centers is low, the distribution network for inputs is rather good.[33] The quality, availability, and access to inputs provided by vendors vary based on local demand.

Box 16: Local and Imported Vegetables
Vegetables sold locally can be grouped into two as: (i) locally grown and (ii) imported from outside. Locally grown vegetables come from some villages of Sittwe township, Kyauktaw and Mrauk U townships. Imported vegetables and fruits come from Minbu, Magway, Pyay, Mandalay and Yangon. There are also some fruits imported from Thailand. In the past, fruits were also imported from China. Interestingly, there are more imported vegetables and fruits than those locally grown in local market centers. The approximate ratio between locally grown and imported vegetables and fruits is around 1:3 to 1:4.

Input Companies – Large input supply companies like Awba Group (Seeds, Agrochemicals), CP Group (Seeds, fertilizers), Golden Key (Agrochemicals), Diamond Star, New Holland (Machinery supplier), Harmony (Bio-fertilizer), East-West Seeds (vegetable seeds) have a reasonable presence in Sittwe with their own distribution system in all townships and influence on input markets particularly on quality, availability and price for their users. Most of them also offer some form of extension service to vendors or key farmers.

Farmers – The vast majority of producers are smallholders (land holdings between 0.5 to 2 acres) engaged in mostly subsistence farming, selling relatively small volumes of surplus vegetables to the markets.[34] There are a much smaller number of commercial producers for vegetables for commercial purposes. Producers tend to produce seasonal crops suited to their production areas. Almost all produce is sold to local traders/collectors, followed by traders from outside the townships. Some farmers will also sell their product to end users directly. Sales of production is generally limited to local markets as local traders do not have direct access to larger markets and networks, nor do they produce a large enough quantity and quality to justify transportation costs to/from larger markets.

Collectors / Traders – Collectors, traders, and processors provide access to markets for producers. They purchase products from producers and add value by bulking, packaging, grading, and transporting to appropriate markets. Generally, a collector visits producers at their farm/homes within the same neighborhood and purchases products. Prices of the products are offered by collectors based on market price information from bigger traders, generally from Sittwe or other towns, who actually decide on products' price. Hence, producers are the price takers. Although there are no formal contracts between producers and collectors, producers generally sell to the same collectors.

Box 17: Traditional Value Chain Financing in the Vegetable Sub-sector
Buyers sometimes offer advance money to producers and purchase produce at a previously agreed price, which often is lower than current market price. One of the reasons for such a lower offer is due to interest added in the advance money received by the producers. In addition to advance money, traders are the key informants of market information like price, quality, quantity and delivery terms (place, date, package size, etc.).

Processors – Simple processing of drying of chilies is done at producer- or small trader-level. Fermented bamboo shoots, radish, leaves, etc. are also done manually. Despite the potential for increasing value and creating employment, vegetable processing is not as commonly done as with fisheries products. Outdated equipment, machinery and other facilities limit their competitiveness in terms of increasing efficiency, quality and quantity of processing. There is a strong need to improve at the processing level of the sub-sector.

Sellers – Retailers purchase goods from collectors/traders and sell to individual end consumers and sometimes institutional buyers like restaurants and hotels, which also often source directly from wholesalers. Produce is sold by vegetable shops, and mobile vendors, amongst others. Sometimes, retailers also procure directly from the producers when produce is brought early in the morning, and sell through their outlets in smaller markets.

[33] "Market Assessment in Central Rakhine, Assessment Conducted in Sittwe, Mrauk U, Ponnagyun, Pauktaw and Kyauktaw Townships." Mercy Corps, 2019.
[34] Ibid 33

Impacts of the Double-Crisis. Similar to other sub-sectors, the COVID-19 travel restrictions generally reduced the trade of vegetable products. The increased transport costs have also meant increased prices for inputs and other production costs. As aforementioned, following the aftermath of the February 2021 events, prices for key inputs like fertilizers and agrochemicals have increased, and it is expected that the production costs for vegetable farmers will also skyrocket during the coming winter and summer seasons. Meanwhile, in October 2021, vegetable prices rose and fell but displayed some clear trends.[35] Onion and green chili rose in most markets, with onion up at least +50% in six markets and green chili up at least +35% in four. On the other hand, prices for long bean, watercress and eggplant pulled back in most markets. In half of all markets, long beans fell -20% or more, watercress fell -7% or more, and eggplant fell -10% or more. Garlic prices were stable. It is important to note that vegetable price volatility tends to be extreme[36] and, since farmers are price takers, increased production costs could have a large negative impact on farmers income (i.e., when the price is lower than predicted).

Current Needs:

- Farmers lack the knowledge of good agronomic practices, access to high-quality inputs, and access to finance for productive investment. They are limited by a poorly connected market that is distant from Myanmar's largest cities.
- Input companies are often providing extension services to producers either through key farmers or input vendors, providing an excellent opportunity to promote good farming practices and climate-smart farming practices. Key farmers and input vendors can be alternatives for the limited government extension staff to provide information and advice for producers on the choice and proper use of inputs.
- In response to the increasing demand and import of vegetables and by leveraging the existing traditional practice of provision of financing by off-takers, more rigorous outgrower schemes (i.e., contract farming approach) with an affordable value chain financing component can be introduced. This can be developed to provide growers with an assured market, stable income, access to off-takers' services, ease of credit and technical knowledge, and it provides off-takers with an assured supply of good quality raw material at less fixed investment and low cost.
- Food safety and hygiene is important but handling and monitoring are still very weak. This will require longer term behavioural change support complemented with access to technologies and better waste management.

Groundnut

Importance. As with vegetables, in Central Rakhine, pulses and oilseeds are grown by some farmers during the winter or summer seasons. Among others, groundnut is the most popular oilseed because of its high demand for cooking oils and other delicacies. It grows well on alluvial lands along the riverbanks that gives the highest yields at the lowest input cost and plays an especially important role in the livelihoods of landless households. For smallholders, it is considered among the most economically significant cash crops (together with betel leaves or betel nuts) providing high return with relatively lesser effort than other agricultural production. Peanut residues are also the main feed for cattle and a source of cash income for households that do not own livestock or aquaculture.

Value Chain Map and Actors. Myanmar used to be self-sufficient in edible oils before the government began importing palm oil from Malaysia and Indonesia in the early 1990s. Palm oil then quickly came to dominate the market because it is cheaper. In recent years, in particular before COVID-19 pandemic, markets for locally produced oils from oilseeds started to bounce back as domestic and export demand for peanut, sesame, and sunflower oils increased.

Farmers – As aforementioned, many of the producers are landless growing groundnuts along the riverbanks rich in alluvial deposits brought by running water in a stream bed, on a floodplain, during monsoon season. Otherwise, they are smallholders producing and selling relatively small quantities of groundnut during off-season. Producers rely on farm-saved, own seeds with relatively low yield. The groundnuts will mostly go to collectors or traders.

Collectors / Traders – They purchase products from producers and add value/price by bulking, packaging, grading,

[35] Ibid 10

[36] "Transforming Rakhine's Vegetable Markets, Case Study on Inclusive Market-based Programming in Rakhine State." Mercy Corps, 2020.

transporting, delivering to appropriate markets. Generally, producers have already an established relationship with certain intermediaries and sell their groundnuts to them, most of the time. Sometimes traders visit producers at their farm/homes and purchase products. The price has been relatively stable or if not increasing slightly over the past years, at around MMK 4,500 to MMK 12,000/basket. This price discrepancy is mostly based on the location of farmers and ease of access by traders/collectors. Average yield is about 25-30 baskets/acre, which is considered to be low (i.e., it can be doubled through better farming practices).

Processors – Although the main bulk is sold to intermediaries, many small food processors and small oil processors are available and get groundnut from farmers. Intermediaries are also supplying groundnuts to these processors. Oil producers prefer high oil varieties while food processors consider more uniform kernel size.

Sellers – Retailers purchase goods from collectors/traders/wholesalers and sell to individual end consumers. Final products are sold by general shops, amongst others.

Impacts of the Double-Crisis. Despite COVID-19, Myanmar has exported US$190.7 million worth of 160,776 tonnes of groundnuts, in particular to China and India in the financial year 2020-2021.[37] Key to Myanmar's pulses and beans market resilience have been their ability to access alternative export markets besides China. Trade sources report that demand for pulses from India increased after pulse production areas in India experience heavy rains.[38] Thanks to the MMK depreciation, groundnuts demand has increased domestically as the retail price of imported palm oil edged up to above MMK 5,000 per viss in October 2021–up from around MMK 4,000 beforehand. While the groundnut oil retail price is still higher at around MMK 6,500 per viss, lower prices have driven some customers toward groundnut consumption.[39]

Current Needs:

- Farmers over-reliance on farm-saved seeds has been identified as one of the constraints to improve groundnut farming productivity. Therefore, improved groundnut varieties with local adaptability are needed.
- Post-harvest losses along the value chain are also an area for improvement. Reduction in post-harvest losses can be facilitated through use of improved technology and efficient storage.

Box 18: Groundnut Oils and Substandard Quality

Also known as peanuts, groundnuts are an important part of the diet in Myanmar and feature in some of the country's most popular dishes.[40] Owning high oleic acid content groundnut can extend shelf-life of foods and promises significant health benefits. Its oil is preferred for cooking curries. Roasted and ground peanuts are added to salads made from blanched spinach, pennywort leaves, and tomatoes. Peanuts are also sprinkled on noodle dishes and added to soups. The nuts are also eaten toasted and served as a snack. Due to its popularity, groundnut oil is pricier than other vegetable oils, in particular those coming from palm oil. Therefore fake or substandard groundnut oils are common.[41] Some oils are produced by mixing real groundnut oil with palm oil. A second type has no peanut oil at all, but instead mixes palm oil with chemicals to achieve the correct color, smell and consistency. Sodium hydroxide is used to prevent the palm oil from solidifying. A third variety of fake peanut oil mixes reused cooking oils with sodium hydroxide. It is a common phenomenon that groundnut farmers sell their products but buy much cheaper palm oil for their own cooking and consumption.

The Forestry Sector

Rakhine State is rich in natural forests, both tropical rainforests and mangroves, with a total area of Permanent Forest Estate (PFE) equal to 2,108,802.63 acres.[42] There are 13 Reserved Forests with areas of 520,525.92 acres, 23

[37] https://www.gnlm.com.mm/myanmar-ships-over-160700-tonnes-of-peanut-to-international-markets-in-2020-2021fy/
[38] Ibid 23
[39] Ibid 37
[40] https://www.frontiermyanmar.net/en/myanmars-edible-oils-sector-bites-back-against-palm-oil-2/
[41] https://www.irrawaddy.com/news/burma/burmas-substandard-peanut-oils-put-test.html
[42] Ibid 5

Protected Public Forests with areas of 1,570,727.71 acres, and one natural conservation area with an estimated size of 433,843 acres. Out of 13 Reserved Forests, 4 are located in Central Rakhine (2 in Kyauktaw, 1 in Mrauk U, and another one in Minbya). Over 88% of total households in Rakhine State use firewood as the source of energy.[43]

Hardwood Timber

Importance. Wood is a natural hard material that is used in construction, infrastructure, energy, and furniture. Efficient and sustainable forest products value chains are important for sustainable forest management, rural livelihoods and poverty alleviation. However, in Central Rakhine, these value chains are not well-developed and governed effectively to ensure equitable distribution of income and benefits from the trade of timber, thus providing less incentive for sustainable forest management.

Box 19: Types of Wood in Local Markets
Wood has different applications and value based on properties such as strength, pliability, density, workability, color, appearance, grain, texture, and resistances to rot, water, and insect. There are many types of hardwood in Central Rakhine's markets. Pyinkado (Iron Wood), Teak and Pyinma are considered first class woods. These timbers are very durable and resistant to termite attack and marine borers. It is suitable for heavy, structural work especially as piles, bridge girders, harbor work and wharf decking. It is one of the most useful timbers where strength, durability, beauty and resistance wear and tear are required. Availability is still large but they are very expensive. Thingan, Kanyin (Keruing), Kalar Mathwe, Saga (Champaca), Pinle Kanazo, etc. are second class woods and cheaper in price. Taung-peinne, Thabye, Taung-tha yet, Thinpone, etc are third class woods and these are normally used for form-work in construction. Two other popular woods are mangrove and bamboo. Mangrove (explained more below) is used a lot as firewood, while bamboo is used in many ways, mostly in construction. Other than mangrove, bamboo is naturally grown at Rakhine mountain ranges and Kayin-wa. Extractions of bamboo for sale is also common in that location that covers about 8,000 km^2 in Rakhine State.

Value Chain Map and Actors. Unsustainable timber extraction and trade are common in Central Rakhine and inefficiencies and inequitable distribution of benefits in timber value chains has contributed to forest degradation. All natural forests in Myanmar belong to the government and are managed by the Forestry Department which is entrusted with the responsibility for the protection, conservation and sustainable management of all forest resources in the country. However, institutional bottlenecks, unfavourable regulations, and inefficient governance in the "formal" timber value chains have led to the emergence of parallel "informal" value chains which have been created by loggers and traders in their bid to circumvent the burden of regulatory compliance and their incapacity to participate in the formal value chains.

Plantations – There are both government and private plantations of teak and pyinkado.[44] These plantations will supply sawmillers with logs to be processed as lumber. Many of those plantations also own sawmilling facilities. For logs dedicated to exports, they have to sell the products through the state-owned Myanma Timber Enterprise (MTE), although since 2014 Myanmar has a log export ban in place to promote in-country value addition as processing.

Loggers – Many illegal loggers harvest, transport, and sell timbers in violation of laws. This mostly happens due to lack of monitoring by the authorities. Since the demand of wood in Bangladesh is high, illegal logs or lumbers are traded occasionally to Bangladesh. Illegal loggers cut and collect wood for sale.

Traders – Toungup and Ann townships (Southern Rakhine) are major sources of wood and bamboo production in Rakhine State. Some other townships such as Mrauk U, Minbya (Central Rakhine) and Buthidaung (Northern Rakhine) are also supplying wood and bamboo. Timber traders get logs or bamboo from Toungup, Ann and Mrauk U townships. Traders transport bamboo or logs by rafts or boats to Sittwe and sell the logs to sawmillers. Transporting is not always smooth because there are some strict limitations on it. There are some navy gates on the waterway to Sittwe and timber traders pass these gates by showing approved letters from the local authorities. Traders also face red tape. Bamboo and fuelwood sellers need to get a license from the Forestry Department and the Township Development Department

43 Ibid 1

44 "Township Profiles (Mrauk U, Minbya, Pauktaw)." The General Administration Department (GAD), Ministry of Home Affairs, 2017

for running a business. Bamboo in the Sittwe markets is mostly from Laymro river between Mrauk U and Minbya townships, sent by rafts or boats.

Sawmillers – Sawmillers cut logs into lumbers, planks, boards, girders, etc. based upon the market demand. An interview with a saw mill owner suggests that his average selling quantity of different woods in the Sittwe area is around 150 - 200 tons per month, so it may be estimated to be around 2,000 to 2,500 tons annually. Sawmill owners sell woods for domestic usage particularly for construction projects and individual house construction. There is no reference price, therefore prices are negotiated between sawmillers and buyers. Red tape is faced by sawmillers and therefore they sometimes need to find ways to deal with the authorities. There are three types of saw mills: (1) 30 - 50 horse-powered (HP) mill; (2) 13 HP mill; and (3) 7 HP mill. They need to get a license from the Forestry Department for operating sawmills. Across Rakhine, there are 70 saw mills. Specifically in Central Rakhine, there are 8 in Sittwe, 3 in Mrauk U, 4 in Minbya and 1 in Myebon.[45]

Carpenters – There is no pulp or paper producing factory in Rakhine State yet, despite bamboo in Rakhine State having an estimated growing stock of 21.34 million tonnes capable of producing around 830,000 tonnes of pulp each year. Carpenters use some electrical carpentry tools for carpentry works because town's electricity is available 24 hours and using electrical tools helps increase efficiency. Some furniture makers use chain saws for cutting logs and they also need to get a license for a 7 HP mill.

Furniture Sellers – While many sell locally-made furniture, some of them also import the readymade teak furniture such as settee, door, windows, etc. into Rakhine State from Bago and Yangon Region where teak is easily available.

Box 20: Gender in Timber Value Chains

In Myanmar, timber value chains are dominated by men mostly due to the physical requirements of timber extraction, but women nevertheless also play various roles in the lower nodes of the chain.[46] Almost all activities in the production, extraction, and transportation stages of the value chain are carried out by men. The role of women in the timber value chain is almost only visible at the later stages of the value chain where women are involved in cleaning sawdust in sawmills, gluing and packaging plywood, loading and carrying of lumber and furniture products from the factories to storage and sales points.

Exporters – Hardwoods from Myanmar are famous in international markets, however only the Myanma Timber Enterprise (MTE) can export logs from the country. Some of the high value timber from Central Rakhine are also export-oriented products, exported by MTE to neighbouring countries.

Impacts of the Double-Crisis. As with other sub-sectors, the imposed COVID-19 travel restrictions as well as the political crisis have also negatively affected the timber trade. The demand has also reduced as people try to reduce their spending and construction projects are delayed. Timber harvesting usually stops during the monsoon. Even illegal loggers have typically halted their activities from mid-May to early October to avoid the rainy season. However, it is reported that illegal logging and trafficking has surged as a result of the political crisis.[47]

Current Needs:

- Tackling illegal timber logging and trade through better law enforcement and market driven timber trade policies. Community forest enterprises and smallholder plantations can also be introduced and developed to reduce unsustainable practices. This will include removing red tape faced by value chain actors.
- Promoting in-country value addition by encouraging further processing which will help create jobs and increase the contribution of the forest sector to the economy.
- Finding solutions to provide diversified livelihood opportunities for those relying on illegal timber logging or firewood collection in the permanent forests or other protected areas.

---

45 Ibid 5

46 "Promoting REDD+ compatible timber value chains The teak value chain in Myanmar and its compatibility with REDD+." ICIMOD Working Paper 2019/3

47 https://rb.gy/mwyycp

Box 21: Weaknesses of the Timber Sub-sector in Myanmar

The documented weaknesses of the timber sub-sector in Myanmar[48] include: illegal logging and timber trade; export orientation and inadequate supply of legal timber for domestic market; little in-country value addition; lack of globally recognized certification scheme; barriers in institutional environment and value chain governance; state monopoly over timber trade; lack of diversity in timber supply sources; and the inability of local people to benefit from timber trade. In addition, the increasing trend of timber prices, combined with natural forest loss and low investment in community forest and smallholder teak plantations further hinders the growth of the sub-sector.

Mangrove

Importance. There are 381,036 acres of mangrove forest across Rakhine State, including those in the six state-owned protected areas that cover 87,219 acres.[49] Mangrove trees and other shrubs are also wildly grown along the banks of rivers. They are important for the rural economy as they provide natural resources for both commercial and personal use. Poor rural communities located near mangrove forests are dependent on these ecosystems for their livelihoods. In addition, as many communities are located in the coastal areas of the state, mangroves can serve as a natural buffer against cyclones and intense monsoon rains. Mangroves stabilize shorelines by slowing erosion and provide natural barriers protecting coastal communities from increased storm surge and flooding. As they link the land and the sea, mangrove systems receive nutrients and organic matter from terrestrial ecosystems, estuaries, and marine systems. These nutrient-rich ecosystems serve as biodiversity hotspots, habitats for land animals and nesting and breeding areas for fish and shellfish, migratory birds, and others. They also help the environment by reducing carbon dioxide emissions that cause global warming.

Value Chain Map and Actors. As mentioned above, mangroves provide various livelihood options (as well as other ecosystem functions) for the communities. Among others, the collection, sale and use of mangrove trees for fuelwood are very common in Central Rakhine. By the early 1990s, Myanmar had lost up to 75% of its original mangrove cover, much of it to make way for aquaculture and rice fields, with the trees themselves burned as firewood or to make charcoal.[50] Consumers prefer fuelwood produced from mangrove over other trees because of its heating capacity, and therefore their price is higher. While other value chains which are strongly interconnected to mangroves have been presented in previous sections (i..e, aquaculture–especially shrimp and mud crab–and hardwood timber), the following value chain map and actors specifically cover mangrove fuelwood.

Box 22: Mangrove and Livelihoods

The annual value of mangroves has been estimated in the range of USD 200,000–900,000 per km^2.[51] Mature mangroves provide wood for construction, firewood, charcoal, furniture, and fish traps, as well as non-timber forest products such as honey, fruit, medicine, and even wine; nypa palm thatch are used for roofing, and are also used to make syrup, juice, wine, and vinegar.

Loggers – Illegal loggers cut and collect wood from mangrove forests for sale. The government enacted a ban on logging in 2016, but since demand for firewood has always been high, the illegal logging of mangroves continues to date. The loggers cut the trees, chop them into a practical size, then dry and pack for transport.

Fuelwood Collectors and Traders – Collectors collect mangrove woods from loggers and then sort and repack them for transport and sale. Collectors will mostly supply their woods to traders, while smaller amounts will be sent to brick producers to fire their kilns and charcoal producers for making charcoal. While collectors' and traders' functions in the value chain are relatively the same–which is to aggregate and transport products for sale–collectors operate at a more localized level (i.e., villages or village tracts), while traders will trade fuelwood across different townships.

---

48 Ibid 46

49 https://www.gnlm.com.mm/over-380000-acres-of-mangrove-forests-conserved-in-rakhine-state/

50 https://gca.org/can-this-simple-solution-stem-the-tide-of-mangrove-deforestation-in-myanmar/

51 "The Mangroves of Myanmar." Zöckler, C., and Aung, C., Springer Nature Switzerland AG, 2019

Box 23: Mangrove Species in Myanmar [52]
Myanmar hosts 44 species of mangrove trees, 32 of which can be found in Rakhine, including species of the genus Rhizophora, Sonneratia, Avicennia, Bruguiera, Ceriops, and Xylocarpus spp. Eight of these species are considered as globally threatened and two (*Sonneratia griffithii* and *Bruguiera hainesii*) are critically endangered.

Brick and Charcoal Producers – Both brick and charcoal productions are done by small-scale operators involving a number of informal labourers–mostly from ethnic minority groups. Both brick and charcoal producers can be found across Central Rakhine. Minbya and Pauktaw townships are the main mangrove habitat areas in Central Rakhine and the main sources of fuelwood and charcoal. Meanwhile most of the firewood for brick kilns is coming from Wunbaik Forest in Rakhine's Ramree township. Charcoal is produced from sorted lower quality mangrove wood. Charcoal and brick making for commercialisation is mainly an activity executed by men.

Sellers – Local retail sellers located at local markets sell fuelwood and charcoal to consumers. Across the value chain, including the sellers, heavy monsoon rains are major concerns, especially as drying is relying on sunshine and there is a lack of storage facilities available to properly store fuelwoods or charcoal.

Box 24: Mangrove Degradation
40% (597 km^2) of the extent of mangroves in Rakhine is showing evidence of degradation.[53] Pressure on the Rakhine mangrove forest habitat comes from the new developments planned for deep sea ports, gas pipelines, infrastructure projects, and hotels. An analysis of the Wanbike area illustrates the loss of mangrove forests over the last 10–12 years due to land conversion into rice paddies and aquaculture farms, in particular for shrimp.[54] Other factors, such as logging, cutting, clear-cutting, fire, and the intensity of the impact, has also reduced the quality of mangrove forests (i.e., deterioration of the remaining mangrove trees).

Impact of the Double-Crisis. Similar to other sub-sector, value chains related to mangroves have been in general negatively affected by the double crisis. In addition, it is reported that an important mangrove conservation project could be set back years by political instability and the pandemic in Rakhine State as plans to establish a coastal mangrove conservation project within the next two years have been delayed.[55]

Current Needs:

- Cyclones, such as Nargis (2008), Giri (2010) and Komen (2015) highlighted the need to emphasise the critical ecosystem services of high-quality mangroves, mainly in protecting coastal communities from storm surges. Repeated natural hazards are hard upon coastal communities, and while mangroves serve as a natural buffer against intense monsoon rains, mangroves in Rakhine State are experiencing degradation at alarming rates.[56] While mangroves are highly important for storing carbon and providing vital fish, crab, and shellfish nurseries, marine life in Central Rakhine's coastal areas has become scarce because of the destruction of the mangrove forests. While conservation efforts are needed, especially in mangrove areas where local communities are also located, any conservation attempts to be viable and sustainable, have to consider economic development needs holistically.
- Mangrove forests have an efficient mechanism for natural regeneration[57] that can be used as an entry point for community engagement in sustainable management of mangrove resources. Approaches like Participatory Forest Management (PFM), Farmer-Managed Natural Regeneration (FMNR), or Mangrove-Friendly Aquaculture can be promoted whereby local communities–as the cornerstone of participatory management–are

[52] Ibid 50
[53] Ibid 22
[54] Ibid 50
[55] https://www.bnionline.net/en/news/mangrove-conservation-stalled-rakhine-state
[56] https://www.acted.org/en/myanmar-acted-supports-mangrove-conservation-in-rakhine-state/
[57] https://www.fao.org/3/v5200e/v5200e09.htm

participating actively in mangrove restorations while gaining financial rewards from the improved forests in sustainable manner; such initiatives may also yield intangible gains in social capital from interactions and coordination among community members.

Betel Nut

Importance. Betel nut is the seed of the fruit of the areca palm. It is also known as areca nut. Areca trees are grown on a small scale as home gardening and commercial scale as large acres. Betel nut trees prefer to grow in tropical and subtropical regions, as they are not tolerant to the cold. For that reason, the trees can be found across Central Rakhine, with Minbya and Mrauk U townships as production centers. Despite the fact that it plays a crucial role in providing livelihoods for the people and an important cultural and social tradition in Central Rakhine, evidence points to serious health effects from regular use.[58]

Value Chain Map and Actors. Betel nut is especially popular among working-age men, who chew to stay awake through long hours of driving, fishing or working on construction sites, although it is also consumed by women and children, to a lesser extent. Therefore, the demand is high and growing. Since the betel nut production in Central Rakhine is more than the local consumption, therefore traders also export it to Yangon and India when the price is acceptable.

Box 25: Negative Health Effects of Consuming Betel Nut
Betel nut is consumed dried, fresh or wrapped up in a package known as a quid (kun-ya) and it is usually a mixture of slaked lime, a betel leaf, and flavorings such as cardamom, cinnamon and tobacco. Many people chew betel nuts for the energy boost it produces. This is likely due to the nut's natural alkaloids, which release adrenaline. It may also result in feelings of euphoria and well-being. It possesses a warm-spicy taste and consists of arecoline, arecaidine, choline, gallic fatty acid, and tannins. Regular chewing of betel nut can also cause gum irritation and tooth decay. Teeth may become permanently stained deep red or even black. And it has been linked to cancer of the mouth and esophagus, oral submucous fibrosis, and tooth decay.

***Grower-Processors* –** They are mostly small-scale home gardening growers. A mature and productive tree can produce 300 - 400 nuts per year. The annual yield of betel nut per acre is around 25 *moungs* (1 *moung* is equal to 25 viss). The growers harvest betel nuts and peel to obtain the kernels. During high seasons, labor is hired to help peel the nuts. Most of the betel nut farmers do not store harvested betel nuts year-long because of risks of insect infestation and possibility of price declining at the new harvesting period.

***Labourers* –** Labourers are engaged to help the processing of kernels from the raw fruits. Labourers are sourced from within or in neighbouring villages. In the production centers like in Minbya township, the current wage of peeling betel nuts is MMK 1,500 per 1,000 nuts. In addition to peeling, labourers are also engaged in drying and being paid daily. To produce dried betel nuts requires 7 to 10 days of traditional sun-drying.

***Traders and Agents* –** Traders or collectors will collect dried nuts from grower-processors. Sometimes, they have buying agents who will aggregate products on their behalf. While most farmers will sell to betel nut traders any time they have dried nuts and therefore become price-takers, some traders store betel nuts using a type of pesticide and resell these when the price is high. Betel nut traders or collectors reach to the farms and collect kernels of betel nuts with local prices. Most of the betel nut traders are from Kyauktaw and they trade betel nuts to India through Paletwa or to China through Muse.

***Steaming Service Providers* –** There are some betel nut steaming services using a simple steamer on a wood stove with some amount of Sulphur added. Some consumers like steamed betel nuts because of their texture.

***Retail Sellers* –** Almost every street corner in Myanmar, including Central Rakhine, has a stall selling *kun-ya*. Retail sellers buy steamed or dried betel nuts from traders. As an indicative figure, the average selling amount of betel nut per

[58] "Adverse Health Effects of Betel Quid and the Risk of Oral and Pharyngeal Cancers." Ping-Ho Chen, et al., 2017.

retail seller per week is around 100-150 viss. There are around 30 retail sellers in or around town-level markets, like Sittwe market and weekly sales can be estimated at 3,000 – 4,500 viss (or 5 – 7 metric tons)—a huge quantity to chew in a week.

Box 26: Betel Leaf
Used to wrap the other ingredients for a betel quid, betel leaf also plays a crucial role in providing income for the growers. Betel leaf is a vine of Piperaceae and comes with several curative health benefits like Vitamin C, thiamine, niacin, riboflavin, carotene and a great source of calcium. Once they have been picked and packaged, growers arrange the leaves by size. The largest are transported to town markets or large wholesalers, and the smaller leaves are sold locally. Despite some measures taken by the Ministry of Health to decrease the habit of betel chewing, its demand is on the rise, especially among young people. Therefore, the production areas have been on the rise. For many of those growers, heavy monsoon rains are the main challenge faced to grow, and has caused a severe loss in income, in past years.

Box 27: Betel Nut Varieties
In local markets, there are two main varieties of betel nut. The Zeezar betel nut is a local product, smaller in size than the other. The Yangon betel nut is an imported variety from the Tanintharyi region, through Yangon. Most of the local people prefer local variety nuts since it is harder, more flavorsome and cheaper.

Box 28: New Demand for Green Nuts
Harvesting time for betel nut is between July to December. The older the trees, the later the harvesting month. Sales are therefore seasonal and it declines at the peak harvesting period of October to December. One significant current event is the demand for green elongated betel nuts by a processor in Yangon. The green nuts will be steamed to meet growing export demand from Taiwan and other East Asian countries. The processor offers an interesting price for green nuts at around MMK 3,200 – 3,500 MMK per viss, and a viss consists of around 70 green nuts.

Impacts of the Double-Crisis. As travel restrictions were imposed during the COVID-19 outbreaks in Rakhine State, betel nut trading was also negatively affected. The demand was also slightly reduced as people try to reduce or avoid harmful consumption of the nuts. While it is unclear if the political crisis has impacted the consumption and thus demand of betel nut, the efforts made by the previous government to reduce betel quid consumption through campaigns have been discontinued since February 2021.

Current Needs:

- Betel nut is one of the most popular psychoactive substances in the world, in fourth place after nicotine, alcohol, and caffeine. Despite being an addictive substance with many more harmful effects than benefits, betel nut is less regulated than other substances. Awareness raising on the danger of betel quid chewing is also minimal, if not, nonexistent. While it might be challenging to do, any efforts to reduce production and consumption of betel nut have to be complemented with finding alternative sources of income for engaged actors.

PART TWO: CROSS-CUTTING THEMES

Support Services

A series of services are required to enable private sector activity and the production and flow of produce along a value chain's core. Support services in terms of transportation, market information, infrastructure and other services are provided by non-core value chain actors in the market system. In Central Rakhine, some of those services are provided by local authorities, local civil society organizations (CSOs) as well as private sector actors.

Financial services

Key financial services are available in the form of loans and savings.[59] In addition, remittances represent a significant role in the rural economy, and although mainly used for consumption, there are examples of producers using remittances for productive purposes. Informal lenders are a popular choice for many men and women as they offer flexibility in loan amount, timing and repayment schedules, though they charge higher interest rates.[60] In many cases, farmers receive cash advances provided by traders and local collectors.[61] This informal loan system is a characteristic of the entire value chain with traders and exporters financing lower levels in the value chain (collectors and farmers). Formal financial institutions operating in Central Rakhine are micro-finance institutions (MFIs) or cooperatives and commercial banks.

Box 29: Debt Cycles Among Rural Households
Many households don't have a savings account. They also have no reserves for an emergency and could not invest in their future. For some, they have to take loans from different sources: family and friends, credit suppliers, shopkeepers and community moneylenders, who charge interest rates of up to 25 percent a month.[62] The burden of interest repayment of loans can be substantial. Accumulating debt, particularly during the lean and monsoon seasons, traps these households into vicious debt cycles and makes them vulnerable to food insecurity and highly sensitive to changes in food availability and access, as well as changes in the labour markets.

Microfinance Institutions. There are several MFIs operating in Central Rakhine providing loans for local market actors. Wan Lark Development Foundation and Myat Thazin Cooperative are among those MFIs. These MFIs provide loans to sellers or traders in the local markets with a lower interest rate compared to informal money lenders (but much higher compared to banks). Under the latest government directive in 2019, the interest rate for microfinance loans shall be charged at a rate of 2.30% per month but shall not exceed 28% per year and would be calculated using an effective rate.[63] The loan amount received by some sellers is MMK 300,000 for the duration of 2 months—with options for daily or weekly repayment for loan takers, and dividends from profit distributed bi-annually for members. However, some do not have access to credits from MFIs or other formal financial institutions and therefore rely on informal money lenders.

Banks. In Sittwe, there are several banks operating, including KBZ, AYA, GDB, MAB, CB, May Flower, Myanma Economic Bank and Myanma Agriculture Development Bank. Among those banks, MADB is the largest financial institution in terms of serving financial services to rural communities.[64] It is the second largest financial institution in Myanmar by number of branches and the largest by assets and loans. There has been a plan to merge MADB with other state-run banks in particular the Myanma Economic Bank (MEB) in order to modernise a loss-making lending scheme that involved one-year loans at reduced interest rates to farmers.[65] This would be complemented with the formation of a credit guarantee corporation (CGC) spearheaded by the Central Bank of Myanmar to modernise lending in the agricultural sector, by helping spread the burden of risk for farmers and business owners who cannot put up collateral. MADB has a threshold for subsidized loans and only provides loans to annual crop production of farmers with land. For farmers with land certificates, MADB loans are very helpful due to its government subsidized low interest, but

---

59 "Community-Driven Financial Inclusion for the Most Vulnerable Households, Lessons from the Tat Lan Programme's Village Savings and Loan Associations in Rakhine, Myanmar." Self, V., Turk, T., Save the Children, Care, IRC, LIFT

60 "Case Study: Women's Demand for Financial Services in Conflict and Post Conflict Areas." UN Capital Development Fund

61 "Prawn Value Chain Analysis, Rakhine State, Myanmar." Joffre, O., Aung, M., LIFT, 2012

62 https://www.frontiermyanmar.net/en/ending-the-debt-cycle/

63 https://www.dfdl.com/resources/legal-and-tax-updates/myanmar-legal-update-new-set-of-interest-rates-for-microfinance-institutions/

64 "Myanmar Agri Development Bank: Initial Assessment and Restructuring Options." LIFT, 2014

65 https://www.mmtimes.com/news/government-plans-merge-state-run-banks-facilitate-more-lending.html

only covers a small portion of the overall financing needs per acre. Farmers therefore still have to complement the remaining financial needs through other sources.

The presence of MFIs and commercial banks in Central Rakhine is limited to major township market centres. These MFIs are often inaccessible to rural populations. Even when available, formal financial services consist of strict payment terms and high interest rates, sometimes requiring mortgaging fixed assets. Hence, these financial services at present are not accessible for farmers or other value chain actors.[66] Far-off locations are underprivileged, as service providers cannot operate in such locations due to security reasons.

Box 30: Money Exchange Services, Banking Crisis and MMK Depreciation
There are not many money exchange services in Central Rakhine, if available they are mostly in Sittwe. Hotel Memory, Shwe Thazin hotel, and TTT trading in Sittwe town provide the service. The rates offered by those providers are generally lower around 5-10% than the rates in Yangon. It is projected that the volume of the exchange is not that big and relies on employees of UN agencies and border traders with Bangladesh. Only a few tourists have arrived in Sittwe over the last couple of years and most of them arrive in Rakhine with kyat being acquired in Yangon or other major cities. Since February 1, 2021 the MMK has tumbled.[67] At the local level, the immediate impacts have been an increase of prices especially for imported products (e.g., agrochemicals), a reduction of money being exchanged, and the closure of private banks' foreign exchange service.

Transportation and Telecommunication Services

Transportation services are mostly provided by private transporters. In comparison to other regions in Myanmar, transportation costs in Central Rakhine, in general, are relatively higher. This is both due to the need to cross over the Rakhine-Yoma mountain range, as well as the low-quality of the roads.

Highway Roads. There are three inter-city highways that connect Rakhine State with the rest of Myanmar; those are: (i) Sittwe - Ann - Minbu - Yangon highway, (ii) Taungup - Pyay - Yangon highway, and (iii) Gwa - Ngathainggyaung - Yangon Highway. The most popular land transport routes from Sittwe to other regions of Myanmar are through Ann and Tounguop routes in Southern Rakhine.

Sea Routes and Inland Waterways. Most people in Central Rakhine rely on inland water transportation for flows of people and products among different townships and villages in the state. Also, the sea route is a major transportation mode for inflow and outflow of goods. The major ports exist at Sittwe and Kyaukphyu (Southern Rakhine) while all towns have jetties. Waterway transportation routes from Sittwe can connect to Yangon, Kawtaung, and Pathein. Using boats or ships, people have also been able to reach other countries like Thailand, Malaysia, and Bangladesh.

Flights. Airlines fly daily from Sittwe to Yangon and weekly to Mandalay and Naypyidaw. Out of the five airports used for air transportation in Rakhine State, one is located in Central Rakhine, which is the Sittwe airport. The other airports in Rakhine State are Kyaukphyu Airport, Thandwe Airport, Ann Airport and Manaung Airport. There has also been a plan to develop Mrauk U Airport.[68]

Railways. Although railway transportation is important and cost-effective in transporting local products to the market and ports, Rakhine State has no functional railway at the moment. There was a plan to develop a rail route of Sittwe-Mrauk U-Minbu, however this development has been stalled. The railway has so far connected Sittwe to Yoe Tayoke of Ponnagyun, but after the initial use this leg has also been stopped.

Within the state, transportation with the waterways can be 3 to 4 times cheaper than transportation by roads, while roadway transportation is relatively faster. Travel between Sittwe and Yangon takes around 26 hours by roadway, around 70 hours by direct waterway and around one and half hours by flight. Torrential rain, seasonal floods, landslides

[66] Ibid 33
[67] https://www.bloomberg.com/news/articles/2021-10-11/plunging-currency-dollar-drought-worsen-myanmar-economic-crisis
[68] https://www.bangkokpost.com/business/1208749/rakhine-airport-in-myanmar-to-be-built-by-tender

and occasional cyclones are major constraints of transportation in Rakhine State and it can result in a high rise of commodity prices occasionally. Most traders use waterway transportation for bulk shipment of commodities and some traders have their own marine vessels for transporting their commodities.

Box 31: A Long, Long Way to China

Rakhine's fishery sector is highly dependent on its final export to China, through the border town of Muse in Northern Shan State.[69] These products are transported via Mandalay to the border by cargo trucks, where branches of Chinese importer companies check their quality and perform other important handlings. The distance from Sittwe to Mandalay is 388 kilometers (241 miles) and it takes around 1-2 days by truck —in a normal situation. Meanwhile, from Mandalay to Muse it will take another day for a 453-kilometer distance (281 miles). There is a lack of refrigerated trucks in the region, meaning most of the fresh fishery products are typically transported in Styrofoam boxes and quality is most of the time compromised. Early in 2021, Myanmar and China have formally agreed to conduct a feasibility study on a crucial part of Beijing's strategic railway plan to connect China's southern city of Kunming and Myanmar's Kyaukphyu port on the Bay of Bengal in Southern Rakhine.[70] Accessing the port will play a key role in China's move to boost its presence in the Indian Ocean through its Belt and Road Initiative (BRI).

Telecommunication. Myanmar's four telco operators —Telenor, Ooredoo, Myanmar Post & Telecommunications (MPT), and Mytel— are present in Central Rakhine. Recently, Norwegian's Telenor has announced the sale of its mobile operations in Myanmar to M1 Group, a Lebanese company, amid increasingly severe restrictions on businesses following the events of Feb 2021.[71] Although mobile phone usage and fixed broadband internet users in Rakhine State are lower compared with other regions in Myanmar, it is projected that these figures are rapidly changing and catching up with the other States and Regions.[72] For 18 months starting from June 21, 2019 until February 2, 2021, eight townships in Rakhine and Chin States experienced a mobile internet shutdown, affecting more than a million people.[73]

Electricity

In Central Rakhine, disparity in electricity access exists between the urban and rural areas. The majority of households rely on wood as the primary source of energy for cooking and lighting. The use of solar-powered lamps in rural and peri-urban areas at night in recent years have increased. Across Rakhine State, there are four primary substations (230 kV) that distribute electricity in the respective township area.[74] One of them is located in Ponnagyun that serves the six townships in Central Rakhine. Only 13.7% of the population in Rakhine State have access to the national electricity grid and 17.5% to the local grids. Accordingly, 88.9% of households cannot access electricity as their source of energy (higher than the Union level of 69.2%).[75]

Labour Access

Around 58.8% of the population aged 15 years and above is economically active whereas the percentage of the total labour force is 67%.[76] The unemployment rate in Rakhine State is highest (2014, 10.4%) compared with other Regions and States (2014, average for Myanmar was 3.9%). In Rakhine State, 60% of the rural population is landless.[77] The figures increase for the Muslim population, most of which does not own land. These landless households supply labor in Rakhine's economy. Over the years, disruptions in labour relations due to ethnic violence have in many instances generated a lack of labour force in Buddhist communities and a chronic unemployment in Muslim communities, which are traditional suppliers of labour.

69 Ibid 25
70 https://rb.gy/uz9ee0
71 https://asia.nikkei.com/Spotlight/Myanmar-Crisis/Telenor-quits-Myanmar-as-regime-pressures-telco-operators
72 https://www.csostat.gov.mm/Content/PublicationAndRelease/2019/s1431.htm
73 https://restofworld.org/2021/myanmar-one-blackout-ends-another-begins/
74 https://www.moee.gov.mm/en/ignite/page/189
75 Ibid 1
76 Ibid 1
77 "Mechanization services in rural communities, Enhancing the resilience of smallholder farmers and creating job opportunities." FAO, 2019

Government and Non-governmental Support Services

In recent years, NGOs/CSOs and government agencies have delivered a range of support services for community economic activities in Central Rakhine—mostly free of charge or highly subsidized. These services include, but are not limited to: provisions of extension services, including training and demo farms of good practices; market information; high quality seeds; fingerlings or shrimp's post-larvaes produced by government-managed hatcheries; equipment; etc. Through livelihood development support, projects have provided assistance like training, distribution of inputs and equipment.

Support rendered by development projects has been mainly focused at the production level to improve productivity or added value through processing.[78] However, many of those services provided are inadequate/ineffective and unscalable, with a relatively low adoption rate. This, complemented with a lack of financing to acquire value addition facilities (like storing, grading, packaging, customised transportation, etc.) both at production and trading levels, poor infrastructures, high transaction costs (due to low economy of scale), and other challenges, make projects' achievements not persist beyond the end of these projects.

Business Enabling Environment

The business enabling environment includes norms and customs, laws, regulations, policies, international trade agreements and public infrastructure that either facilitate or hinder the movement of a product or service along its value chain. The related enabling environment consists of those controlled by the national government as well as local authorities. Historically unresponsive government services have meant that it is difficult to start or expand a formal business in Central Rakhine. As a result, many market actors operate informally. Furthermore, poor infrastructure inhibits competitiveness of the local economy. Security concerns (i.e., night curfew or travel restrictions) add another layer of complexity resulting in an unconducive business environment.

Box 32: Farmland Regulations

In Myanmar, land for farming is regulated under the following laws: The Farmland Law (2012) and the Vacant, Fallow, Virgin (VFV) Lands Management Law (2012). The former placed a system of securing rural land tenure through a land use certificate and registration system. The latter permits VFV lands to be reclassified as farmland as determined by Farmland Administration Bodies. On September 11, 2018 parliament passed an amendment to the VFV Land Management Law. Under this amendment, people who occupy designated VFV land–which covers 50 million acres (around 20 million hectares), one-third of the country–were given a certain period to apply for land-ownership permits and failure to apply for a permit may be punishable with a large fine and up to two years in jail.[79] This law has been criticized with a primary concern that it will cause further insecurity for farmers and ethnic communities, as most of the lands classified as VFV are in ethnic rural areas and up to 10 million people live or rely on this land for their livelihood.[80] Meanwhile the main issue with the Farmland Law is that it limits other land use, such as for aquaculture development. This is despite the fact that the livelihoods of several thousand people in the coastal region are directly and indirectly involved in aquaculture activities. This policy, of preventing the conversion of farmland to other uses, is a historical legacy from previous governments that placed heavy emphasis on protecting crop cultivation to ensure national food security.[81]

Policies in the Agriculture Sector. In 2018, the Union Government of Myanmar released the Myanmar Agriculture Development Strategy and Investment Plan 2018/19 - 2022/23 to improve the performance of the agriculture sector.[82]

---

78 Ibid 33

79 https://deeply.thenewhumanitarian.org/refugees/articles/2019/03/15/land-confiscation-is-latest-barrier-to-return-for-myanmars-displaced

80 "Most Farmers Do Not Know about the Vacant, Fallow and Virgin Land Management Law as the Grace Period to Register Closes New data from a survey of 290 farmers who depend on land classified as Vacant, Fallow and Virgin Land." NAMATI, MyJustice, British Council

81 "Myanmar Ayeyarwady Delta Bio-Based Value Chain Analysis for Sustainable Mangrove Restoration." The Global Green Growth Institute, 2019

82 "Myanmar Agriculture Development Strategy and Investment Plan (2018-19 ~ 2022-23)." The Union Government of Myanmar, Ministry of Agriculture, Livestock and Irrigation, 2018

The strategy consists of three pillars: governance, productivity, market linkages and competitiveness. It is unclear if the current SAC government continues to use this strategy and investment plan to facilitate Myanmar agriculture development. In addition, policies related to the promotion and extension of good practices (for example the Good Agriculture Practices, Good Aquaculture Practices, etc.) as well as public funding to implement the policies and to enhance production and business performance, exist or are available, but they are inadequate.[83] Aforementioned government extension services or fingerlings supply, for example, have historically been unreliable and had limited outreach. Many market actors (such as input sellers, traders) are unwilling to expand their businesses due to their risk averse nature and absence of conducive business environment (e.g., facilitation for certificates, incentives for additional investment, access to easy finance, inadequate support on increasing and improving production, etc.) Informal taxation by local groups adds cost for doing business and price/cost to commodities.

Box 33: Bangladesh-Myanmar Border Trade

Myanmar is one of Bangladesh's closest neighbors with historic connectivity going back centuries. The border stretches 270 kilometres (170 miles), from the tripoint with India in the north, to the Bay of Bengal, in Rakhine State, in the south.[84] Border trade between Myanmar and Bangladesh, however, is not as significant as the ones with China, Thailand and India. But it is a border trade where Myanmar has a positive net trading value (i.e., more export values than import's).[85] There are usually two main 'doors' in Rakhine for exports to Bangladesh. One through Sittwe and another one through Maungdaw (Northern Rakhine). These borders were closed from last year until recently (October 12, 2021) due to COVID-19 measures.[86] Products being sold through Rakhine to Bangladesh are onion, ginger, plum, dried fish, and other marine products. Toungup, in Southern Rakhine, is a vital trading point for some products which are transported from the Dry Zone. In Sittwe, an influential logistics service provider hires marine vessels to transport these products to Bangladesh through the Custom Department for duty bearing at Sittwe. Another alternative route is through Maungdaw in Northern Rakhine. The border trade between Myanmar and Bangladesh stopped in May 2020 and resumed briefly in July 2020 before it was halted again due to the rise of COVID-19 cases in Rakhine in August 2020.

Policies in the Fisheries Sector. The Department of Fishery (DoF) is responsible for licensing that controls the entry of new individuals into the fishing industry.[87] Every fisher must be registered and anybody working, living or staying on a fishing vessel must have a fisher's registration card. In Rakhine State, DoF has set limitations and rules for fishing boats and vessels. Aims at sustaining fishery resources, the government also has allocated some areas as fish preservation zones, seasonal non-fishing zones, fishing equipment restriction zones and sea turtle conservation banks. The following key laws regulate the fishery sector, with the objective of sustainable development of the sector: (i) Marine Fisheries Law (1990); (ii) Law Relating to Fishing Rights of Foreign Vessels (1989); (iii) Freshwater Fisheries law (1991); (iv) Aquaculture Law (1989).[88]

Subsidies. Externally-funded subsidy (by government, donors) plays a predominant role in the economic development in Central Rakhine and are seen to strongly influence behaviours of producers, including the negative impact of creating a dependency culture rather than stimulating more entrepreneurial spirit among producers who should see farming as a business.[89] It is important to complement government and NGO/CSO- run service delivery programs with more commercially driven support models.

Business Associations. Organizations such as the Rakhine State Chamber of Commerce & Industry (RSCCI) or Rakhine's Myanmar Shrimp Association (MSA), partake in local economic strengthening initiatives by supporting local market activities and partnering with development initiatives. However, it has a 'trading' mindset rather than 'industry' focus, hence does not have long term plans and investment. Potential participants in the local development agenda, RSCCI and other relevant organizations, have rarely been consulted and partnered with livelihood development

83 Ibid 33
84 https://www.aseanbriefing.com/news/strengthening-myanmars-trade-relations-with-bangladesh/
85 https://www.mmtimes.com/news/rakhine-merchants-ask-state-let-trade-resume-bangladesh-border.html
86 https://www.mmtimes.com/news/rakhine-border-trade-centres-set-resume-operation.html
87 Ibid 13
88 Ibid 5
89 Ibid 33

programs. They are interested in promoting local economic development in Rakhine State and can be platforms or provide networking opportunities to link different market system actors, facilitating scalable collective actions among value chain actors, etc.

Structural Inequalities and Climate Change

Economic growth between 2015 and 2021 helped lift a proportion of the population out of poverty in Central Rakhine. However, many people remain poor, unable to effectively participate in or benefit from economic growth despite being economically active as workers, producers and consumers. Structural inequalities and climate-induced shocks and stresses cause marginalized groups to lack the resources, inputs, services, skills, and information they need to be competitive and adaptive to the challenges and opportunities. This section does not aim to cover all such inequalities, rather it aims to highlight several of the most prominent for illustration only.

Structural Inequalities

Inequalities in the rural economy in Central Rakhine are driven by many factors including negative power dynamics and marginalization based on gender and ethno-religious backgrounds.[90]

Gender Inequality. Women's economic and financial inclusion is an important and necessary step towards gender equality, poverty eradication and inclusive economic growth.[91] However, informal customs, norms and behaviours include specific roles assigned to men and women across different value chains and service markets in Rakhine State, often limiting women's equal participation.[92] In many cases, women from different ethno-religious groups are left behind in the effort to empower community members for increased incomes, greater interaction with market actors, new opportunities for expression in multi-stakeholder settings, and strengthened social protection.[93] Therefore to support women's economic empowerment, an integrated program of technical capacity strengthening, technology transfer, and leadership mentoring to strengthen women's market position and decision-making power are needed. Women's participation in collective actions such as cooperatives, Village Savings and Loan Associations (VSLAs), etc. can serve as platforms for reaching women and supporting their interaction across ethno-religious lines.[94]

Box 34: Social exclusion in the fisheries sector
Muslim fisherfolk were severely affected by a seven-month ban on fishing (incl. shrimp) after August 2017, constricting their main source of income during the short fishing season. The government now requires that fishers hold National Verification Cards (NVC) in order to obtain fishing licenses.[95] This has placed fisherfolk in a difficult dilemma, pitting strong anti-NVC communal pressure against the need to provide income and food for their families.

Social Exclusion. In Rakhine State, Muslim communities face systemic barriers including the lack of freedom of movement and limited access to government services.[96] Formal and informal restrictions to freedom of movement, discriminatory policies, security restrictions, and intercommunal tensions with successive waves of violence have limited access to livelihoods for Muslim–primarily Rohingya–communities since 2012.[97] Unable to access jobs and markets outside their immediate areas, Muslim producers, fisherfolk and traders were forced to rely on middlepersons to access inputs, services, and markets which further limited their income. Within the context of the rural economy in Central Rakhine, it is, therefore, important to recognize that social and political dynamics shape access to and participation in economic opportunities, and that economic dynamics in turn can either exacerbate grievances or foster a sense of community.

Unequal Bargaining Power in the Market Systems. Most farmers/producers and to some extent processors have contracts with village collectors or traders, often on unfavourable terms. For example, even if chili processors can

---

90 "Gender Profile for Humanitarian Action: Rakhine, Kachin and Northern Shan, Myanmar." Gender in Humanitarian Action Workstreams, Volume 2, Issued March 2020
91 Ibid 60
92 Ibid 33
93 Ibid 90
94 Ibid 59
95 https://www.amnesty.org/en/latest/news/2017/11/myanmar-apartheid-in-rakhine-state/
96 https://www.amnesty.org/en/location/asia-and-the-pacific/south-east-asia-and-the-pacific/myanmar/report-myanmar/
97 "Humanitarian Need Overview, Myanmar." Humanitarian Programme Cycle, OCHA, 2021

process chillies to allow for a longer storage period, their bargaining power is usually very low. Relations are often characterised by indebtedness. Many producers receive cash advances from traders to cover households' daily needs during the lean period or to maintain or replace their farming or fishing equipment. With every increment of the loaned amount, the interest rate increases, limiting the capacity of shrimp processors (often women) to get out of debt. In this type of contractual relationship, access to market prices or product storing capacity to wait for higher prices do not make any difference. Those at the bottom of the value chains are most often 'price-takers'.[98]

Conflict and Humanitarian Crises. Market systems operate as an ecosystem where market actors of different functional categories are interdependent and work in an interconnected relationship. Escalating conflicts created market uncertainty and led to the unwillingness of market actors to make investments. Little progress has been made towards achieving the most meaningful recommendations towards establishing peace in Rakhine State.[99] There is still no just and durable solution for many internally displaced people living in camps, and any escalations of conflict between the Arakan Army and the Tatmadaw could lead to further violence, physical harm, and displacement.[100] The political, economic, and social consequences of the events following February 1, 2021 have been significant and the future is difficult to predict.

Box 35: Drivers of conflict in the fisheries sector
Beyond the broader armed conflict, the fishery sector itself has its own set of localized conflicts and tensions, mostly stemming from: (a) competition in marine fisheries between offshore vessels and small-scale inshore fishers which include shrimp fisherfolk; (b) conflict between shrimp farmers and fishers over the management of water levels on floodplains; and (c) conflict between large fish farms and rice growers and fishers over confiscated land.[101]

Climate-Induced Shocks and Stresses

Communities in Central Rakhine have been experiencing precarity in their livelihoods because of stressors such as conflict and market constraints. Climate change-related events are major livelihood threats, where rural populations are disproportionately hit by its adverse effects. Extreme weather, including cyclones, floods, mudslides, and storm surges can cause extensive damage in infrastructure and economic investments. These lead to regular blockages of roads and damage to a weak infrastructure that further exacerbate the already poor physical access conditions. Cyclones, such as Nargis (2008), Giri (2010) and Komen (2015), exposed the State's agricultural areas to salt water intrusion that brought widespread devastation.[102] Sea level rise has resulted in gradual loss in vegetation coverage, particularly along the coastal areas. Unpredictable start times of the agricultural seasonality has created tremendous challenges for farmers as they look to make informed decisions on their farming activities. Given the general state of underdevelopment, much of the farmland in Central Rakhine is poorly adapted to the new challenges, including flooding and tidal waterways with high levels of salinity.

Moreover, the depletion of aquatic resources caused by the degradation of mangroves[103] further undermines livelihoods by leading to an inconsistent supply of fish, shrimp, crabs and other fisheries products, such as post-larvaes and crablets, which are the primary input for shrimp and crab farming. With the increasing frequency and intensity of climate change-induced stressors, effects of such extremes would add extra stress on human health, food security and water resources, where the rural poor are extremely susceptible and adversely impacted. It is therefore imperative to put an emphasis on reducing exposure and vulnerability while enhancing resilience to shocks and stresses in any efforts to develop the rural economy of Central Rakhine.

---

98 Ibid 33

99 "Transforming Rakhine's Vegetable Markets Case Study on Inclusive Market-based Programming in Rakhine State." Mercy Corps, 2020

100 "An Avoidable War: Politics and Armed Conflict in Myanmar's Rakhine State." Report No. 307/Asia, International Crisis Group, 2020

101 Ibid 18

102 Ibid 7

103 https://www.gnlm.com.mm/environmental-degradation-fish-depletion-need-to-be-addressed/

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

Central Rakhine is rich in natural resources and located at a strategic crossroads of South and Southeast Asia, yet it is underdeveloped and much of its population is trapped in poverty. This is due to a number of factors, including recurring outbreaks of inter-communal violence and armed conflict, the displacement of households, structural inequalities, a weak enabling environment, poor infrastructure, climate-induced shocks and stresses, and poor access to services and market functions.

Despite the challenges, there are strong opportunities and potential improvements across different sectors and sub-sectors in the rural economy of Central Rakhine. Many of these opportunities involve addressing weak market linkages and the lack of access to different support services, inputs, and technology. This section highlights the current needs within different sectors that require attention from development partners.

Key Sectors

Livestock. Backyard keeping of pigs and village chicken plays an important role for household income, with a strong opportunity to promote women's economic empowerment. However, good animal husbandry practices are weak due to limited access to inputs (e.g., quality weaners, animal medicines) and extension services. Interestingly, private companies have started to provide extension services, especially to off-layer and broiler chicken farms, filling the gaps of the LBVD-led services which have had limited reach. These private companies have also started outgrower schemes to address limited access to inputs (e.g., feed, drugs, additives, chicks). Support to these companies can speed the uptake and scaling-up of such private sector-led approaches. Biosecurity and food safety are also concerns that need to be tackled. Highly pathogenic and infectious diseases may hinder the sector if relevant issues are not addressed.

Fishery. The fishery market system offers significant livelihood for women, who play the leading role in post-harvest handling, processing, and retail. This provides an excellent opportunity for women's economic empowerment in fisheries. The use of unsustainable practices in the sector is well-documented and has resulted in the current intensive exploitation of coastal resources. While policies to promote sustainable practices are available, enforcement is weak and the future of the sector remains in jeopardy. In addition, enormous efforts are needed to improve conditions for workers in the fishing industry (and other related sub-sectors) by tackling problems around exploitation/enslavement and safety concerns. Finally, the sector can benefit from multi-stakeholder co-management arrangements to establish an agreed vision and developmental strategy to better collaborate across ethno-religious lines. Such co-management is essential for incentivising responsible stewardship of Central Rakhine's coastal resources and improve the resilience of the fishery sector.

Agriculture. Central Rakhine's agriculture sector suffers from chronic low productivity and profitability. Farmers lack knowledge of good agronomic practices, access to high-quality inputs, and access to finance. They are limited by a poorly connected markets that are distant from Myanmar's largest cities. Input companies often provide extension services to help producers choose proper inputs, either through key farmers or input vendors, and this provides an excellent opportunity to promote good farming practices and climate-smart farming practices. Existing practices of value chain financing by off-takers can be leveraged to introduce more rigorous win-win outgrower schemes which engage women while providing producers with market information, stable income, access to off-takers' services, credit and technical knowledge, and good quality raw material at lower cost.

Forestry. Developing diversified livelihood opportunities for those relying on illegal timber logging or firewood collection in the permanent forests or other protected areas is integral to tackling illegal timber logging and trade and improve market-driven timber trade policies and law enforcement. Similarly, efforts to reduce production and consumption of betel nut must also be paired with finding alternative sources of income for betel nut and betel leaf growers. While conservation efforts are needed, especially in mangrove areas where local communities are also located, any conservation attempts have to consider economic development needs holistically in order to be viable and sustainable. Participatory approaches can be promoted so that communities, as the cornerstone of participatory management, are participating actively in hardwood or mangrove forest restorations while gaining financial rewards and improved social capital in a sustainable manner.

Cross-Cutting Themes

Support Services. While essential to support producers and other value chain actors' commercial activities, business support services are limited in Central Rakhine. Formal financial services for example, even when available, consist of strict payment terms and high interest rates, sometimes requiring mortgaging fixed assets. Addressing the financing needs of actors will require serving underprivileged communities and marginalized people, often in far-off locations and fragile security settings. Doing business in Central Rakhine is also complicated by high transaction costs. Transportation and telecommunications services, as well as energy access are among the weakest and most expensive in Myanmar. In addition, disruptions in labour relations due to ethnic violence have in many instances generated a lack of labour force. While improving basic infrastructures is expensive and may not be feasible, more coordinated market linkages between value chain actors can be facilitated to acquire shared capacities and meet demand requirements. Such coordination can be achieved through lead agents in the value chains, either top-down by large commercial firms, bottom-up by producer organizations, or through multi-stakeholder platforms.

Business Enabling Environments. Inadequate government services have resulted in many rural market actors operating informally. Therefore, improving the business registration process is important to allow these market actors to benefit from better access to both public and private services (e.g., affordable loans, external investments). Access to farmland—the main resource to rural livelihoods—is limited. Addressing issues in current land laws that limit the access to land by marginalized groups and landless, and the use of farmland beyond crop production (for instance for aquaculture development) is crucial, although this requires difficult advocacy work at the Union level. While many current policies aim to improve farm productivity promote more sustainable production, extra funding and resources are required to enforce or implement them. Many market actors are unwilling to expand their businesses due to their risk-averse nature and absence of more organized efforts to advocate for a better business enabling environment. Meanwhile local business associations have more of a 'trading' mindset rather than an 'industry' focus, and do not have long term plans or investments. Engaging these entities in the local development agenda, including in donor-supported livelihood development programs, can facilitate a locally-owned agenda and provide effective platforms and networking opportunities that facilitate scalable collective action among market actors.

Structural Inequalities and Climate Change. In Central Rakhine, structural inequalities have resulted in marginalized groups lacking the resources and access they need to be competitive and adaptive to challenges and opportunities. It is therefore important to recognize that social and political dynamics shape access to and participation in economic opportunities, and that economic dynamics in turn can either exacerbate grievances or foster a sense of community. Women from different ethno-religious groups are often left behind in local economic development, creating the need for integrated women's economic empowerment programs which include technical capacity strengthening, technology transfer, and leadership mentoring and strengthen women's market position and decision-making power. These inequalities have been compounded by other stressors such as climate change, which often disproportionately affect rural populations. Torrential rain, seasonal floods, landslides and occasional cyclones can lead to higher commodity prices. Furthermore, given the poor state of derdevelopment, much farmland in Central Rakhine is poorly adapted to flooding and tidal waterways with high salinity. The depletion and degradation of natural resources only further undermines livelihoods. In order to develop Central Rakhine's rural economy it is therefore imperative to emphasize reduced exposure and vulnerability while enhancing resilience to shocks and stresses.

Recommendations

A rural economy is a complex system of people, networks and institutions on which households rely not only for their livelihood and well-being but also for coping and recovery during and after crises. Given the complex and protracted crises affecting the Central Rakhine's economic growth, extra effort is required to ensure inclusiveness. Moreover, an integrated effort is needed to ensure local economic development in Central Rakhine is inclusive. This can be achieved through Poverty Graduation models,[104] which will provide resources and skills to enable marginalized groups to participate in market systems, and Market Systems Development[105] that help ensure the participation of marginalized groups.

[104] https://blogs.adb.org/blog/what-graduation-approach
[105] https://www.marketlinks.org/resources/framework-inclusive-market-system-development

Addressing the root causes of underdevelopment by leveraging economic dynamics and promoting inclusivity is needed to ensure inclusive growth. In Central Rakhine, the poor are among the most vulnerable and marginalized groups. While they are not the most influential market participants, the poor depend on markets as consumers, labourers, and producers of goods and services. Economic dynamics can therefor either exacerbate grievances or foster a sense of community. While it is important to address underlying constraints that prevent growth in the aforementioned sectors/sub-sectors, structural inequalities must also be addressed. For that reason, market systems analysis and corresponding interventions should be built on assessments of existing negative power dynamics related to gender and ethno-religious background and more.

Facilitating partnerships among key actors in the rural economy while ensuring access to and participation of marginalized groups in economic opportunities is important for transformative change in Central Rakhine. Influencing the economy to be more competitive, grow more, and grow in a more inclusive manner requires working with the private sector actors that make up the economy. Efforts to increase innovation, investment and inclusivity must be based on a real understanding of incentives and what is commercially feasible and sustainable. Most importantly, interventions should be designed to encourage the participation of marginalized groups in economic opportunities. Economic development program must assess the potential for inclusive growth and partner with actors in a manner that is commercially sustainable but also generates inclusive, pro-poor outcomes. Support to value chain actors will utilize a partnership model that does not just incorporate cost-sharing and additionality but also operates at the nexus of business and development objectives.

Pursuing early wins with a view to long term sustainability by fostering local actors as development facilitators will lead to more sustainable development outcomes. While economic development in a protracted crisis aims to reduce the dependency on humanitarian assistance in order to reach long-term sustainable situations, development support also has to produce early wins for the local economic actors to firstly bounce back from the negative impacts of crises. This means providing short-term direct support while building on existing market systems and minimizing approaches that undermine or harm the local market and its actors. Being uniquely integrated into communities, local organizations are best placed to understand local needs and respond in the most relevant way, linking actors and representing a reliable focal point.

Conflict-sensitivity in rural economic development remains essential to unlocking broad economic growth. While addressing the root causes of a conflict is challenging, it is important to operate within and adapt to the difficult circumstances created by conflict. A conflict sensitive approach is of highest importance, and support must be designed to avoid doing harm or exacerbating the conflict while also maximising peacebuilding efforts. Analysis of the political economy and the conflict, as parts of market systems analysis, are particularly important to understanding fragile contexts. This involves an understanding of power and conflict dynamics, vested interests and elite capture, and the various levels of formal and informal governance.