SUPPORT POST CONFLICT FISHERIES SECTOR DAMAGE ASSESSMENT FOR PROGRAMMING IN NORTHERN MOZAMBIQUE, CABO DELGADO PROVINCE.
TEAM MEMBERS:

Rachade Lima, Chefe de departamento de Pescas (DPAP)

Arone Salenca (Delegado Provincial do IDEPA)

Sergio Jose (Delegado Provincial do IIP)

Amade Garrett (Chefe da Reparticao de gestao de recursos no ADNAP)

Erudio Malate, National Fisheries Expert, FAO

Tatenda Mutenga, Adjunto Chefe do Escritorio de Pemba, FAO

Manuel Daniel, Coordenador de projecto, FAO

Brasilino Salvador, Project Officer, FAO

Crescencio Metuque, Administrative Assistant FAO

Esmenia Uanicela, Travel Assistant, FAO

Felix Marttin, Fishery Resources Officer, FAO

Omar Riego Penarubia, Post harvest and Value Chain Specialist, FAO

Jon Lansley, Fishing Technology Specialist, FAO

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INTRODUCTION

Mozambique is located in Southeastern Africa bordered by the Indian Ocean to the east, Tanzania to the north, Malawi and Zambia to the northwest, Zimbabwe to the west, and Eswatini (Swaziland) and South Africa to the southwest. The sovereign state is separated from the Comoros, Mayotte and Madagascar by the Mozambique Channel to the east. The capital and largest city of Mozambique is Maputo.

Agriculture, which includes crops, livestock, forestry and fisheries is fundamental to ensure Food Security and Nutrition in the country. In Northern Mozambique particularly, the sector has been negatively impacted by the ongoing crisis and its spillover effects. The number of people displaced has risen sharply from 110,000 in March 2020 to over 820,000 in December 2021 according to government estimates. According to the latest Integrated Food Security Phase Classification (IPC) analysis, out of the nearly 1.9 million people experiencing high levels of acute food insecurity (IPC Phase 3 or above) in Mozambique, including nearly 40,000 people in emergency (IPC Phase 4), about 71 percent (1.3 million people) of these are in four provinces: Cabo Delgado, Nias-sa, Nampula and Zambezia.

Cabo Delgado is the northernmost province of Mozambique. It has an area of 82,625 square kilometres (31,902 sq mi) and a population of over 2,300,000. As well as bordering Mtwara Region in the neighboring country of Tanzania, it borders the provinces of Nampula and Niassa. The region is an ethnic stronghold of the Makonde tribe, with the Makua and Mwani as leading ethnic minorities. Pemba is the capital of the province; other important cities include Montepuez and Mocímboa da Praia.
The influx of Internally Displaced Persons (IDPs) since the onset of the civil unrest in 2017 has placed pressure on host communities, while increasing competition over scarce resources and worsened living conditions among vulnerable groups. The fisher folks have not been spared from this as sector infrastructure was damaged and/or completely wiped out. The Government of Mozambique has requested FAO to provide technical support to undertake a comprehensive assessment on the impact of the ongoing crisis on the fisheries sector in the Cabo Delgado province.

This assistance could form the basis for programme planning and development to rehabilitate the fisheries infrastructure and restore the fish value chain in the province, through determining the extent of destruction of landing sites, storage and processing facilities, fish markets, roads for accessibility and other relevant services and facilities like potable water and electricity, and the impact on value chains. The measures proposed will also increase the resilience of fisherfolk and the population at large in Cabo Delgado through economic development and improved Food Security and Nutrition.

The assessment has included in the considerations IDP movement affecting supply and demand, impact of the fisheries sector on the crisis and emergency level food security, and consideration of resilience capacity to respond to future shocks.

The Technical Assistance provided to the Government of Mozambique, through the Provincial Directorate of Agriculture and Fisheries (DPAP) in Cabo Delgado was an assessment of the impact of the Northern Mozambique Crisis on fisheries sector. It included:

- Determining the extent of destruction of landing sites, storage and processing facilities, fish markets, roads for accessibility and other relevant services and facilities like potable water and electricity
- Impact on value chains, with consideration for IDP movement such as shifts in supply and demand,
- How the fisheries sector interacts with crisis and emergency level food security, and
- Consideration of resilience capacity to respond to future shocks.

The assessment also included an appraisal of the impact of the currently stalled Total LNG project in Palma district to date, and the expected impacts should the project recommence and planned fisheries resettlement implemented. Additionally, to the extent possible information relating to other factors affecting small scale fisheries, such as competition from industrial and foreign fleets, and pressure from IUU fishing, was collected. Furthermore, in cooperation with InOM (former IIP) a rapid assessment to produce an indication of the status of fish stocks was done. Also, a market assessment to determine the sustainability of the possible interventions or investments was part of the assessment.

1 Instituto Oceanográfico de Moçambique
BACKGROUND

CIVIL UNREST STARTING IN 2017

Since 2017, the country has faced an ongoing insurgency. The insurgency in Cabo Delgado refers to the insurgency in the region of East Africa and the ongoing conflict in Cabo Delgado Province, mainly fought between militant jihadists attempting to establish an Islamic state in the region, and Mozambican security forces. Civilians have been the main targets of terrorist attacks by these militants.

The main insurgent faction is Ansar al-Sunna, a native extremist faction with tenuous international connections. From mid-2018, the Islamic State of Iraq and the Levant (ISIL) has allegedly become active in northern Mozambique as well and claimed its first attack against Mozambican security forces in June 2019. In addition, bandits have exploited the rebellion to carry out raids.

Ansar al-Sunna are known locally as al-Shabaab but they are not formally related to the better known Somali al-Shabaab. Members are allegedly mostly Mozambicans from Mocimboa da Praia, Palma, and Macomia districts, but also include foreign nationals from Tanzania and Somalia.

While religion does play a fundamental role in the conflict, analysts believe the most important factors in the insurgency are widespread social, economic, and political problems in Mozambique. Unemployment and especially youth unemployment are considered the main causes for locals to join the rebels. Increasing inequalities have led many young people to be easily attracted by radical movements.

Rwandan force deployment

On 9 July 2021 a 1000-strong joint Rwandan Military-Police force started deploying to northern Mozambique to assist the national security forces in combating Islamic extremists. The force was soon in action and within the month was reported to have overrun a terrorist base and inflicted casualties.

SAMIM

The Southern African Development Community Mission in Mozambique (SAMIM) is an active regional peacekeeping mission operated by the Southern African Development Community in the Cabo Delgado Province. SAMIM was deployed on 15 July 2021 following its approval by the Extraordinary SADC Summit of Heads of State and Government held in Maputo on 23 June 2021. On 2 January 2022, at a summit of SADC Heads of State agreement was given to extend the troop deployment in Mozambique to help the government fight an Islamic State, linked insurgency. Countries deploying contingents in this mission are: Angola, Botswana, Lesotho, Namibia, South Africa and Tanzania.

NATURAL DISASTERS

Cyclone Kenneth

Kenneth struck northern Mozambique about a month after Cyclone Idai had devastated the central part of the country, raising fears that the ongoing humanitarian crisis there could be worsened by the storm. Local authorities in northern Mozambique evacuated more than 30,000 people ahead of the storm, given the expected impacts.

Cyclone Kenneth made landfall just north of Pemba on Thursday evening, 25 April 2019, at about 16:15, with 1-minute sustained winds of 220 km/h. The IFRC reported widespread damage in the city, with power outages recorded throughout the city and numerous trees felled, which caused even more damage. Four ships sank off the coast of the town of Palma. On Ibo Island, it was reported that 90% of the homes were destroyed. In Cabo Delgado Province, 2,500 homes were destroyed with multiple schools and hospitals also sustaining damage.

DISPLACED PEOPLE

Increased security incidents in northern Mozambique since 2017 resulted in population displacement as well as subsequent humanitarian needs. A Displacement Tracking Matrix (DTM) was activated by the International Organization for Migration (IOM) in February 2019.

The DTM of February 2022 estimates the presence of 784,564 internally displaced persons (IDPs) mapped across displacement sites and host communities in 208 localities. One-fifth of total IDPs present at the time of assessment were mapped in Pemba (151,987 individuals), followed by Metuge...
DTM observed an overall net increase of 49,230 displaced individuals compared to previous round of baseline assessment (November 2021). While return movements have proven to be quantifiable, the difference between this DTM and the previous one can be broken down into:

a. A net increase in IDPs across re-assessed locations (+52,150 IDPs) triggered by attacks/fear of attacks in localities of Niassa, Nangade, Meluco, Macomia and Ibo

b. The addition of IDPs in newly assessed locations (+14,600 IDPs), most especially recorded in northern Cabo Delgado districts receiving IDPs who have yet to return to their locality of origin

c. Adjustments made to data reused from previous rounds due to inaccessibility/inability for DTM to confirm changes in IDP populations (+705 IDPs)

d. A decrease due to an overhaul of the existing database through data verification and triangulation (-18,355 IDPs)

Between November 2021 - February 2022, cumulative observations through the Emergency Tracking Tool (ETT) of 31,220 individuals displaced for the first-time indicate that conflicts and fear of attacks triggered individual movements from Meluco (40%), Nangade (28%), Mueda (10%), Mecula (10%), Macomia (2%) and Ibo (2%). Observed movements increased the number of arrivals in Pemba, Nangade, Ancuabe, Chiure, Mueda and Metuge. Additionally, ETT indicative findings recorded cautious return movements from Montepuez, Balama, Namuno, Ancuabe, Chiure, Pemba and Metuge districts. These IDPs are reportedly traveling back to their areas of origin in Palma, Muidumbe, Macomia, Mocimboa da Praia, Mueda, and Nangade districts.

### FISHERIES COMMUNITIES

Within a provincial population of 2,32 millions, by 2017 the fisheries sector employed about 48,000 people directly and 6,108 indirectly, of which about 1,250 were women who practiced fish processing and recollection. They are distributed through 225 (2012) fishing centers that are linked to the fishing communities, with the predominance being found along the coast. Most of the fishing communities are small, poor, semi-subsistence in nature and generally combine fishing and commercialization of fish with subsistence agriculture.
**FISHERIES SECTOR**

Cabo Delgado province has 282 km$^2$ of mangrove swamps, 525 km$^2$ of coral reefs and an archipelago (the Quirimba Archipelago) of 32 outlying small islands. The continental shelf itself has 481 km$^2$ of tidal flats, and a vast area (2059 km$^2$) of sandy shallow water of 0 – 20 meters deep. There is a further 852 km$^2$ of continental slope between 20 and 200 meters. The São Lázaro bank, approximately 45 nautical miles from Pemba, is an important offshore zone with an expected high potential for fisheries development, however, the bank is currently unexploited, apart from recreational sport fishing.

Available statistics show that around 70% of the fish harvested are taken from the inter tidal zone or at least from waters less than 2 meters deep. It is believed that there is a great resource potential in the areas 5 – 20 meters deep sandy shallows, and in the drop-off area 20 – 200 meters. To develop this area bigger well equipped motorized boats will be needed. There are known resources of small pelagics in the area.

The fishing sector in Mozambique (and therefore also in Cabo Delgado province) consists of three types of producers: artisanal (subsistence or commercial, using boats less than 13 m long and motors less than 140 hp), semi-industrial (boat size used is 13-24 m long and motors of less than 350 hp) and industrial (vessels over 24 m long and motors with propulsion power beyond 350 hp).

Industrial fisheries consist of two types: a national fleet and a foreign fleet catching tuna. Foreign flagged vessels may access tuna stocks within the Mozambican EEZ through bilateral fisheries agreements negotiated in accordance with the Southwest Indian Ocean Fisheries Commission (SWIOFC) Minimum Terms and Conditions (MTC) for Foreign Fisheries Access. The MTC is a common access regime established in 2021 for the foreign fishing of tuna and tuna-like species in the SWIOFC region. The MTC includes an obligation to land catch in designated ports in Mozambique (Maputo, Beira and Nacala), of which the by-catch proportion should be made available to the local market. About 50% of the industrial catch consists of shallow water shrimp and deep water crustaceans, including shrimp and lobsters, which are the most valuable export commodities. Production from the sub-sector is deep-frozen on board and entirely for the export market.

Semi-industrial fisheries also contribute to foreign exchange earnings, catching shrimp and other first category fish for export.

The artisanal fishery is widespread along the coastline of the province, often operating from open beaches. It is the oldest industry and is the way of life for a large number of fishers (before 2017 estimated at approximately 48 000 in Cabo Delgado province). Artisanal fisheries are dominated by traditional fishing methods and is still the dominant fisheries, in terms of total production and supply to the domestic market. Artisanal fishing households are a heterogeneous group that depends on the status of the head of the household in fishing, the type of fishing activity, the level of diversification of household income, the location in relation to the resource base, and market access. Fishers, who are mainly men, can be divided into two groups, owners and workers. The largest number of the fishers are skippers and workers/crew members. The proceeds of a trip are distributed as follows: The owner receives 1/3 of the proceeds for ownership and 1/3 for maintenance of vessel and gear, while the skipper and crew get the remaining 1/3 of the proceeds.

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2 Currently no foreign vessels are operating in Mozambican waters
Fishers in Cabo Delgado province typically spend at least 60% of their time fishing, at the moment mostly during the day, due to security regulations. Less than 25% of the fishing families have fishing as their only economic activity. The rest have other economic activities, mainly agriculture (67%) and trade (26%). There is also an important group of people who are involved in activities that support artisanal fisheries, such as boat building, net making, fish preservation and trading. According to the division of labour that exists in most of the coastal communities, women tend to work more in agriculture and men in fisheries. It is important to note that shellfish and octopus collectors in the intertidal zone are almost exclusively female. This division of labour ensures a diversified food base and survival strategy which is an important advantage for households which are engaged in fishing activities. The division of labour is generally divided as follows: Men fish, transport and market products, while women process fish. This division is not completely rigid, exceptions do exist depending on locality. In some areas, while drying of fish is generally done by the men, women process fresh fish, and sometimes fry fish in their homes. Women are also involved in post harvest activities, including trading processed fish.

Some 1 500 species are present in the Mozambican seawaters of which 400 are of direct commercial importance. At the moment, it seems that inshore fishery resources are highly exploited in the Cabo Delgado province and perhaps even over-exploited, however, there appears to be possibilities to increase exploitation further offshore. The high exploitation in-shore might be caused by the lack of vessels (preventing fishers moving further offshore) and influx of IDPs (in central and northern Mozambique) due to the recent conflict. Large demersal and pelagic fish, associated with deeper waters are of particularly high value and can command high prices domestically and abroad. According to the production nomenclature used in Mozambique this type of fish is known as first category fish. The other categories are known as second and third.

The fisheries resource base in Cabo Delgado remains large and lends itself to sustainable exploitation. The available statistics show that there is a great resource potential in the drop-off area 20-200 m.

Due to the narrowness of the continental shelf, tuna migrate close to the shore. Shrimp is available throughout the region. Lobster, another valuable resource, is only exploited to its maximum in locations close to markets. The resource is currently unmanaged. Overall the total sustainable harvest potential for Cabo Delgado (excluding Sao Lázaro bank and other offshore areas) has been estimated at approximately 32 000 MT.

**Marketing and Markets**

Fish marketing is dominated by informal petty traders who purchase fish either fresh at the landing site or already dried at the artisanal fishers’ dwellings. Considerable fish drying (sun drying) is carried out on the islands, the product is sold at the market by the fishers or their spouses, or traders buy these fish in the areas and transport it to the major markets. Generally, the marketing chain can be made up of any combination of fishers, processors, middlemen, wholesalers and retailers. Wholesalers buy and often process fish until they stock between 100 and 200 kg and then transport it in hired pick-up trucks to the major markets (Cabo Delgado districts of Pemba, Montepuez, Mueda, Chiure, Balama, Namuno and the city of Nampula and for octopus Ilha de Mozambique, in Nampula province).

Retailers buy dry fish in 50kg sacks from the wholesalers and sell it in small amounts to consumers. In some cases, fish is bartered against farmers’ cereals.

Marketing of fresh fish occurs primarily near landing sites and where there is an outlet for high value fresh fish species. When no ice is available fresh fish is transported unchilled on bicycles or in pick-up trucks to the closest market with all the hygiene and freshness problems related to this practice. When ice is available, fish are chilled and transported to major markets. However, handling practices should be improved to ensure quality and safety of the product.

The price of fresh fish at the local retail markets varies from area to area, but on average it costs MTN300 (USD4.70) per kg fish for first category fish, MTN250 (USD3.90) per kg for second category and MTN150 (USD2.30) per kg for third category fish. These prices may increase two-fold in the main urban centres, such as Maputo. Profit margins for fresh fish appear to be higher than for dried fish.

Apart from the primary production problems faced by the artisanal sector, the main constraints for market development are the poor conditions of the feeder roads, the lack of ice production and insulated ice boxes, absence of cold storage facilities along the value chain, and the unreliable transportation facilities (both maritime and terrestrial transportation).
ASSESSMENT

Several landing sites and fish markets were visited (Palma, Macomia, Mecufi, Pemba, Ibo, Quissanga, Quirimba, Metuge), where interviews were held with representatives of fishers, processors, and traders. Also government officials were met. During the discussions the objectives of the mission were explained after which a structured discussion was held; first questions were asked about the fishery resources and related issues, then the value chain including fish processing, storage, transport, and sale were discussed, followed by a conversation on gears and vessels. Participants were asked to make a comparison regarding the three subjects between the situation before and after Cyclone Kenneth and the Conflict with Non State Armed Groups.

FISHERY RESOURCES

Status of fished stocks
The situation with respect to the status of fishing stocks is different in different places. In some instances, fishers reported a decrease of average size of caught fish and a reduced total catch per fisher compared to the situation before the conflict and cyclone Kenneth. This was thought to be due to the increase of the number of fishers in the areas, as with the IDPs also fishers migrated. Also the limited area where fishers could fish, due to the loss of their vessels during the cyclone Kenneth and/or the conflict, increased the pressure on the fishery resources. On the other hand, the imposed curfew should have reduced the fishing pressure. For example, on Ibo island most fishers lost gear and vessels. The security situation imposes a curfew between 15:00 and 05:00 during which no fishing is allowed. If the fisher population would have stayed stable, this would mean that the fishing pressure on the fishing stocks around Ibo would reduce. However, this was not the case; as fishers lost their vessels, they were bound to fish closer to shore, meaning more fishers in those areas. On top of that the population of Ibo increased from 13,000 before the conflict to 30,000 including new fishers. This resulted in a dramatic increase of fishing pressure on the inshore stocks around Ibo island. Unfortunately, there are limited alternative livelihoods available on Ibo island, forcing people to continue to fish. On the island, fishing constitutes 85% of all economic activities. Before the conflict/cyclone the contribution of fisheries to the local economy was 40%.

At some places people migrated away and no fishing was possible due to the conflict. After two years some people returned and noted that average sizes increased and the catch per fisher was higher. The communities of Quissanga and Palma for instance reported this. They reported that during the conflict it was not possible to fish in their areas. This means that until recently (until November 2021) no fishing took place. The fishery resources in these areas have therefore been untouched for two years.

During discussions, there appeared to be consensus over the needs of fishing communities with regards to fishery resources; larger motorized vessels were needed to enable fishers to go further, thereby reducing the fishing pressure close to the beaches. Fishers also indicated that further offshore, there appeared to be fishery resources which are currently underexploited.

At Mecufi, the continental shelf is very narrow, and drops off very quickly into deeper water. This allows larger fish, like tuna, to come relatively close to shore. Fishers of Mecufi do not currently have the means nor the capacity to exploit this resources.

TOTAL LNG

The Mozambique LNG (Liquefied Natural Gas) Project started with the discovery of a vast quantity of natural gas off the coast of Palma district in 2010, leading to a USD20 billion Final Investment Decision in 2019. The Project is operated by TotalEnergies.

Securing land for the construction and operation of the Mozambique LNG Project involves the physical displacement of fishers. Depending on the place and the type of fishing practiced, fishing activities will be impacted in varied ways throughout the different phases of the LNG Project. During the construction phase, impacts are associated with exclusion zones around construction sites and operational vessels, as well as activities such as dredging and pilling. During the operations phase, impacts are primarily associated with the establishment of a marine exclusion zone (MEZ) and marine restricted area (MRA) which will affect access to and use of proximate resources.

The LNG Project states that all impacted fishers, divers and collectors will be eligible for some form of compensation. In addition, the project has conducted some alternative fishing development programs such as the installation of anchored fish aggregation devices (aFADs). These devices
attract larger fish species that are usually found offshore, such as seasonal tuna. By aggregating fish to locations closer to the shore than their usual deeper-water habitat, it reduces the time it takes a fisher to search for a good catch, effectively “bringing the potential catch closer” to shore and ensuring aggregation around a specific location. FADs installed in 2019 remain in position and whilst it is believed they have been successful at aggregating fish, up to date information is not available as to whether these FADs still exist, are being used, and continue to successfully aggregate catches to facilitate capture.

Other TOTAL LNG activities aimed at assisting fishing communities include: building a board walk across mangrove from Magana (south of Palma) to facilitate access to the coast and fishery resources; supporting local fisher association in Palma; providing at no cost refrigerated transport for fish products by boat from Palma to Pemba once a week, departing Palma Friday and arriving Pemba Monday; and building fishing ports in Palma, Maganja and N’semo with processing facilities.

The project is currently stalled owing to unstable environment caused by the conflict. Should activities recommence and the project be completed, impacts on the activities of fishing communities are expected to increase. More information regarding this project can be found on the following website links https://mzlng.totalenergies.co.mz/ and https://mzlng.totalenergies.co.mz/en/sustainability/resettlement/resettlement-plan.

**VESSELS AND GEARS**

It was clear that both the cyclone Kenneth and the conflict have had devastating impact on fishers and their vessels and gears in all centers assessed. It was reported that in Ibo and Macomia most of the vessels and gears were destroyed.

Canoes (3-5 meters) and small vessels (7-9 meters) dominate the sector. A wide variety of fishing methods are utilized, including; beach seines, small boat purse seines, gillnets (bottom set and surface drifting), hand lines, longlines, traps, harpoons, and collecting by hand/net in the intertidal zones.

Materials for maintenance and repair of vessels, motors and fishing gears are in short supply in nearly all fishing centers. In many centers supply of wood was restricted, or totally cut off, owing to closure of wood producing areas, due to the presence of Non-State Armed Groups. Only in Macomia was it reported to have a good supply of suitable wood for vessel repair. Another issue reported in many centers was the lack/absence of boat builders who relocated to safer areas such as Pemba owing to the instability in the region caused by the conflict. In Palma district there was a clear preference for wooden vessels while in other areas fishers with some experience of fibre glass vessels reported positively on this. It was reported that while fiber glass vessels maybe faster and easier to operate, wooden vessels were more stable and could carry more fish. Fishing gears and materials were in short supply everywhere.
VALUE CHAIN/LANDING SITES, STORAGE AND PROCESSING FACILITIES, FISH MARKETS

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</table>

Cyclone Kenneth has had an impact on the fishery markets, storage and processing infrastructures where roofs, drainage, and water supply were damaged. However, some user groups joined forces to repair the inflicted damage and ensure continued functioning of the market. The Quissanga market is an example of this. For some communities, the fishery infrastructure was the only safe refuge during the cyclone.

The Non State Armed Groups had a significant impact on the functioning of fishery infrastructures; many infrastructures, including equipment present, were destroyed while other sites only suffered destruction of equipment.

The destruction of these infrastructures have negatively affected the fish value chain particularly the cold chain. For example, the destruction of the ice machine in Quissanga had limited the use of ice to lower the temperature of the fresh fish. Currently, blocks of ice are purchased from households and local markets.

The presence of a reliable source of electricity for cold storage and equipment as well as clean water to wash fish are necessary to ensure safe and high quality of fish. Limited electricity supply was observed on the island of Quirimba where the electricity being produced by the solar panels is not enough to operate the water pump and is limited to only one chest freezer. The situation led to importation of ice from nearby islands and towns. Due to absence of clean water, fishers and processors are washing their fish in the sea resulting in possible contamination and higher rates of spoilage.

Considering the fish supply flow diagram below for Ibo and Quissanga Districts, the presence of cold chain which include use of ice, cold storages and vehicles; will ensure food safety and quality of the fish products. On average, it takes around 2 hours before the fish caught from the fishing grounds reach the landing sites where ice is available. This is longer if we to consider the time spent on the fishing grounds. In order to maintain the freshness and quality of the fish, the fish temperature must be chilled immediately after being taken out of the water. Fresh fish are stored in chest freezers for a maximum of three days to ensure that it is frozen before being transported to major markets.

Furthermore, a reliable source of ice or refrigerated vehicles is also necessary for transporting fish to the major markets which are usually more than 4 hours (in the case of Pemba) by road. This can be longer during bad weather. Transporting from the islands in the Quirimbas archipelago will also need boats (with ice or cold storages) to ship the fish products either to Quissanga that acts as aggregation center or directly to Pemba.
Significant amounts of fish are also dried. In some villages, the fish is usually sundried up to 3 days on top of wooden racks in an open area making the fish more prone to any possible contamination and loss.
RECOMMENDATIONS

Based on observations done during the visits the team made the following, more general recommendations with respect to actions to take to address damage inflicted to the fishery sector during cyclone Kenneth and the conflict with non-state armed groups. In the annex 4 a more detailed analysis of the situation for each visited site will be given, with related recommendations.

FISHERY RESOURCES

Due to the recent conflict the monitoring system of the fishery sector has collapsed; inspectors have fled areas and data with respect to vessel activity and landings are not collected or processed. This system needs to be re-installed as a matter of urgency, to enable a more thorough analysis of the status of the fishery stocks, and to enable sustainable management of these resources.

The revival of the system should start with a frame survey where all fishing vessels are censused and recorded, allowing for appropriate statistical stratification of the fleet. The frame survey could be used to implement a vessel registry, which could be maintained by a licensing system. Such a system would increase the period of validity of the frame survey. The last frame survey was done in 2012. The vessel registry would also facilitate the replacement efforts after a future disaster. Linked to the vessel registry, a spatial management system of fishing vessels (artisanal fishing vessel tracking system) should be established. This will allow security and defence forces to identify vessels at sea and assess their threat level. Fishery authorities would be able to determine vessels entering closed areas.

Once a frame survey has been done a catch and effort assessment survey (CAS) should be implemented. This system entails data collection per stratum of the frame. Data to be collected would be on landings per species and vessel activity. Based on this collected data (per frame) total catch per species can be estimated. Also CPUE (Catch per Unit of Effort) can be estimated, which is important information as it is an indicator for stock abundancy.

The above information from the frame survey and CAS is also useful for a study on the fishing potential of the province and nationally, which should be conducted to ensure sustainable use of the fishery resources.
Members of the local CCPs (Conselhos Comunitários de Pesca, Community Fisheries Councils) fled the area during the conflict with non-state armed groups, which resulted in the collapse of the functioning of the CCPs. On top of that, most of the assets of the Councils were destroyed. To allow these CCPs to function again support needs to be given with respect to capacity building on good management practices, exchange visits to other CCPs which continued functioning, and provision of means to facilitate the functioning of the CCP (a vessel for instance to the CCP in Ibo, which works together with the Quirimbas national park authority enforcing protected areas).

Some CCPs are involved in restoration of mangrove forests, which are threatened by the damage done during cyclone Kenneth, but also continued damage done by local communities which are harvesting wood (for instance Mecufi, Metuge, Mocimboa da Praia). The CCPs which take care of the mangroves should be supported, including provision of capacity building to local communities with respect to sustainable forestry management.

Currently most fishers lack vessels to move further offshore. This results in a higher concentration of fishers in the small area close to the beach. The resources in those areas will easily be overexploited, while similar species, sometimes of the same stock further away do not suffer from the same amount of fishing pressure. Even further offshore there appear to be stocks which are completely unexploited. To move fishing pressure away from the close to shore areas, to further away and offshore areas, fishers should be provided with vessels and gears which are appropriate for this offshore fishing (like the São Lázaro bank). To ensure safe and sustainable exploitation of the offshore resources, the fishers designated for this activity should receive capacity building in this respect.

The conflict has had a devastating impact on the functioning of institutions related to the fishery sector. Already limited resources have reduced, limiting the efficacy of the institutions even further. It is recommended to support these institutions to cover the increased difficulties they face during and after the conflict.

To facilitate fishery management, enforcement of regulations, and data collection, fishing vessels should only use locally designated landing sites for their landings, berthing, and services.
**VESSELS AND GEARS**

In the interest of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to **replace smaller vessels with larger vessels** and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors for vessels 7 m in length and over. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety and comfort for fishers. Larger vessels will also make it easier to carry ice boxes on board and the adoption of more powerful motors will shorten the travel time between fishing grounds and landing facilities further improving quality at the critical first stage of the value chain from the point of capture to the landing site.

Consideration could be given to trails with fiber glass vessels, where accepted by fishers and deemed appropriate for the fishing gear to be used (e.g. some issues were reported when using nets with fibre glass vessels but not with hook and line fishing).

Capacity building should be provided for **boat building and maintenance for both wooden and fibre glass vessels**. Training for use of fiber glass should be prioritized for those working with wood to promote a mix of skills and reduce the risk that carpenters may lose work opportunities where fiber glass vessels replace wooden ones. Capacity building also needs be provided for maintenance of motors. Mechanics already skilled at working with motorbikes would be well placed to receive training for maintaining fishing vessel motors.

For the replacement of **fishing gears** consideration should be given to prioritizing responsible and sustainable methods. In this respect consideration could be given to replacing banned gears i.e. beach seines with purse seines to be used in deeper water and that don’t come into contact with the bottom during the normal course of operations. Where alternative gears may not be acceptable, consideration could also be given to gear modifications to update the design of beach seines to reduce impact of beach seines on the habitat caused by traditional beach seine design. Any potential development of gear modifications for beach seines would require relevant government consents and appropriate gear trials.

With regards to gillnets, care should be given to ensuring mesh size and construction (hanging ratios) are appropriate to only catch mature fish, leaving juveniles species to escape. Gears designed to catch underutilized species such as offshore tuna should be prioritized. Mecufi has been identified as a potential location for exploiting abundant tuna stocks known to be present within 1-3 kms from shore. Mecufi may also be considered a good option for infrastructure investments as the town has been unaffected by the conflict and as such considered a stable area at relatively low risk of attack by non-state armed groups. Consideration should be given to trials using anchored Fish Aggregation Devices (aFADs) to facilitate access to tuna and tuna like resources. Good practices and lessons learned in other projects introducing aFADs in the Palma province and in other countries/regions should be taken into consideration. Fisher exchange programs should be considered so that fishers can learn from fishers already successfully using aFADs and targeting the same or similar species available in Mozambican waters.

**Capacity building** should be provided to ensure fishing gears are assembled and operated in such a way to minimize the catch of unwanted bycatch and particularly endangered, threatened and protected species (ETPs). Training should also include appropriate methods for the safe release of captured ETPs species.

To the extent possible, the use of plastic should be eliminated or reduced in the construction of fishing gears and aFADs. Fishing gears and aFADs should be constructed designed in a way to minimize the risk of ghost fishing should the gears become Abandoned, Lost or Otherwise Discarded Fishing Gear (ALDFG). To facilitate minimal impact on the environment, landing site reception facilities should be provided for the responsible disposal and potential recycling of end of life fishing gear.

For the replacement of both vessels and gears care should be taken to ensure that capacity is not unduly increased above pre-cyclone/conflict levels, except where access to previously underutilized resources can be assured. Catching capacity must not exceed available resources and sustainable exploitation rates. It is therefore vitally important to coordinate with all existing and planned projects which contain a component for providing vessels and gears.

To facilitate maintenance and avoid disruption to fishing operations, spare parts and materials for vessels, motors and fishing gears should be accessible at affordable prices.
(by for instance inclusion of the spare parts storage at major landing sites/markets (one-stop-shop), or tax breaks, credit). Regarding the provision of new motors, only those brands whose suppliers can ensure ongoing longterm supply of spare parts should be considered.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation\(^4\) and FAO guidelines\(^5\). In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements should this be required in the future (e.g. damages caused by cyclones).

\[^4\] Regulamento da Pesca Marítima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020


**VALUE CHAIN/LANDING SITES, STORAGE AND PROCESSING FACILITIES, FISH MARKETS**

The destruction of the different infrastructures along fish value chains, particularly the processing and market facilities and roads, have affected the efficiency of the value chain and the quality of the fish. The rehabilitation of processing facilities and markets and inclusion of reliable sources of electricity and clean water will reduce contamination of fish and prevent spoilage, thus, preventing fish loss and waste. The rehabilitation of roads, particularly feeder roads or roads from landing sites and markets to main roads, will facilitate faster transportation of fish to major markets. This will reduce the possibility of spoilage due to mishandling and lack of ice or refrigerated vans. Faster transportation of fish to market using improved and good quality roads also entails lower costs for use of ice and fuel as well as for maintenance of vehicles. Well-developed roads will not only benefit the fisheries sector but other sectors including agriculture and trade.
Fish post-harvest include several stages of the fish value chains such as processing, storage and market. A One-stop post-harvest facility that includes standard operation infrastructures such as wharfs, washrooms, processing equipment, storage rooms, market stalls with reliable sources of electricity and clean water will be useful to ensure appropriate facilities are used and operations are carried out under hygienic conditions. Additionally, other services such as carpentry, repairs, and input shops can be added. As women are mostly involved in post-harvest activities, the inclusion of a kindergarten will be very helpful to ensure that their children are safe while they are doing their chores, where appropriate.

The cold chain is the set of resources used to achieve and maintain temperatures that preserve the quality of products throughout their shelf-lives, from production to consumption. Maintaining the cold chain requires the use of ice, insulated containers or transport vehicles and adequate quantities of coolants or mechanical refrigeration. Having a reliable source of electricity is necessary to operate cold storage facilities and ice machines. Strengthening cold chains will result mainly in reduced food losses and improved market access.

Value addition is when something extra or special is added or done to increase the value of a product or service. This includes a new or improved processing activity or new way of handling, packaging or labelling. Adding value can help sell fish for a higher price and more profit and help to deal with higher costs of fuel, energy and transport. The capacity building on value addition includes improving fish products through processing, packaging and labeling and utilization of fish waste into products such as fish silage. Development of entrepreneurial and marketing skills will also be included in building the capacity of youth and women in the fisheries sector.

Impeding and preventing fish from becoming unhealthy and unsafe is a crucial objective for consumer protection. Safeguarding food safety is a form of protection both for the health of final consumers and for countries’ economy. Improving quality including food safety can help in selling the product faster and generate cash to continue the business. Quality and safe products usually have improved shelf-life. This capacity building will not only build the capacity of the value chain actors on best practices in hygiene and fish handling but will also create awareness on consumption of healthy and safe fish products.

Food loss and waste (FLW) is a manifestation of poorly functioning food systems. FLW occurs in most, if not all, supply chains and can occur at different stages of value chains. A fish loss assessment process includes the use of several methodologies to develop a current and detailed understanding of different types of losses affecting food security and stakeholders' livelihoods, especially physical losses, quality losses and market force losses in the fish value chains. Although underlying many fish loss issues is quality and spoilage, solutions are wide ranging, complex and interlinked.

Effective management and maintenance of infrastructures are crucial. Basic decision-making skills and supervisory capacity are vital for good management. To ensure having effective management of the different infrastructures particularly the markets, study on the existing management plans of these infrastructure should be conducted and different management options should be identified. The purpose of this activity is to ensure that the existing and upcoming infrastructures will be managed effectively and ensure usage by the target beneficiaries.

The private sector is playing a vital role in ensuring various activities along the fish value chains are carried out. Services like provision of ice, repair and transportation are provided by the private sector. Providing incentives such as credits, tax breaks, capacity building on business management for private sector will ensure the commitment and continuous support for the fish value chain actors.

Microfinance and credit are important for small-scale fisheries (SSF) actors for daily operations. SSF businesses also need access to credit to purchase or replace fixed assets. Inclusive access to capital and credits through Grupos de Poupança e Credito Rotativo (PCR, revolving funds) for associations/CCPs will result to responsible fishing, fish processing and fish marketing operations.

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CROSS CUTTING

Owing to the current situation, coordination between government agencies dealing with the fisheries sector and security forces is necessary. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups have been known to move between islands. The security forces have therefore established a curfew (15:00 – 05:00) during which time no activities can be conducted at sea. Also, some areas are designated as closed areas, where no activities can take place. With coordination between the different entities, misunderstandings will be prevented. This coordination could consist of periodical meetings between representatives of the entities involved, where planned activities and security measures are discussed. One of the issues to be discussed can also be the identification of beneficiaries for the provision of gears and/or vessels. This will prevent the provision of supplies to non-state armed groups, which might be unknown to civil authorities.

To prevent duplication of efforts and facilitate optimal utilisation of resources, details of all planned and current projects/programmes concerning the fisheries sector must be collated by the Government, who should identify and communicate the focal point/agency responsible for the coordination of activities.

To ensure sustainable use of the resources, and optimize sector performance, once the situation has stabilized with respect to migration of people and the security situation, fishery management plans need to be developed following the EAF approach

7 EAF’s main purpose is to plan, develop and manage fisheries in a manner that addresses the multiple needs and desires of societies, without jeopardizing the options for future generations to benefit from the full range of goods and services provided by marine ecosystems.

7 (the Ecosystem to Fisheries Approach). The EAF approach is a comprehensive process involving all stakeholders (not only from the sector, like fishers, processors, traders, government agencies, but also from outside the sector like security forces, agriculture, transport) covering ecological, socio-economic and governance issues. The aim of the EAF is to come up with a management plan ensuring sustainable use of the resources, taking into consideration and addressing inhibiting factors to the development of the sector.
MAIN OBJECTIVES

On or around 01 April 2022 you will travel to Mozambique, and in close collaboration with the Ministry of Sea, Inland Waters and Fisheries, the Country Office as well as the Sub-Regional Office for Southern Africa provide technical support to the Government of Mozambique to assess the impact of the Northern Mozambique Crisis on fisheries sector. This would include determining the extent of destruction of fish markets, storage facilities and roads for accessibility and the impact on the fish value chain. The support would include a rapid assessment to produce an indication of the status of fishery stocks, as well as a market assessment to determine the sustainability of the possible interventions or investments.

BACKGROUND

Agriculture, which includes crops, livestock, forestry and fisheries, is the breadbasket of Mozambique and fundamental to ensure Food Security and Nutrition in the country. In Northern Mozambique particularly, the ongoing crisis and its spill over effects have negatively affected the sector. The number of people displaced has risen sharply from 110,000 in March 2020 to over 820,000 in December 2021 according to government estimates. According to the latest Integrated Food Security Phase Classification (IPC) analysis, out of the nearly 1.9 million people experiencing high levels of acute food insecurity (IPC Phase 3 or above) in Mozambique, including nearly 40,000 people in emergency (IPC Phase 4), about 71 percent (1.3 million people) of these are in four provinces: Cabo Delgado, Niassa, Nampula and Zambezia. The influx of Internally Displaced Persons (IDPs) since the onset of the conflict has placed pressure on the host communities, while increasing competition over scarce resources and worsened living conditions among vulnerable groups. The fisher folks have not been spared, with the infrastructure within the sector having been damaged and/or completely wiped out. The government has requested FAO to provide technical support to undertake a comprehensive assessment on the impact of the ongoing crisis on the fisheries sector. This would form the basis for programme planning and development to rehabilitate the fisheries infrastructure, and restore the fish value chain.

Within this context, following the request of the Provincial Department of Agriculture and Fisheries (DPAP) in Cabo Delgado, FAO will provide technical support to the Government of Mozambique to assess the impact of the Northern Mozambique Crisis on fisheries sector. This would include the following:

- Determining the extent of destruction of landing sites, storage and processing facilities, fish markets and roads for accessibility and the impact on value chains, with particular consideration for IDP movement such as shifts in supply and demand,

- Determining how the fisheries sector interacts with crisis and emergency level food security, and consideration of resilience capacity to respond to future shocks.

The assessment will also include (if possible) an appraisal of the impact of the currently stalled Total LNG project in Palma district to date, and the expected impacts should the project recommence and planned fisheries resettlement implemented. Additionally, to the extent possible information relating to other factors affecting small-scale fisheries, such as competition from industrial and foreign fleets, and pressure from IUU fishing, will be collected. The support would include a rapid assessment to produce an indication of the status of fish stocks, as well as a market assessment to determine the sustainability of the possible interventions or investments. All recent and planned fishing development activities conducted by organizations active in the region (notably MASCH Foundation activities in Palma district) will be confirmed to avoid duplication.
Specific tasks of the team:

- **Mr Marttin** (Fisheries Resource and Project Development Specialist) – Team leader. Coordinate the efforts of the HQ team in assessing impacts of civil unrest, ensuring the production of the outputs described. In cooperation with local and national authorities, make a preliminary assessment on the status of fishery stocks. Collaborate with the other team members ensuring the sustainable use of the fishery resources;

- **Mr Penarubia** (Postharvest and Value Chain Specialist) – Assess the main value chains for fishery products in the Cabo Delgado Province, and the current bottlenecks. Develop recommendations on investments and actions to be taken to eliminate these bottlenecks;

- **Mr Lansley** (Fishing Technology Specialist) - Assess the different gears and vessels in use, assess the impacts by the civil unrest and the different hurricanes on these, and develop recommendations on the replacement of damaged/stolen vessels and gears, keeping in mind building back better;

- **Mr. Malate** (National Fisheries Expert) - provide context specific background, as well as interlocutor with the government line ministry.

The mission will undertake a briefing and debriefing meeting at the beginning and the end of the mission with the country team to ensure clarity on the ToRs and ownership of the findings and way forward.

Upon completion of your mission, you will prepare a Back-to-Office report outlining the main findings, conclusions; the above mentioned three deliverables, and points for follow-up. You will brief FAO Representative and relevant officers and managers as well as the relevant government line ministries at provincial and national level.
# ANNEX 2

Identified activities in the fisheries (and related) sector in Cabo Delgado province

<table>
<thead>
<tr>
<th>IMPLEMENTING PARTNER</th>
<th>NAME OF THE PROJECT / INITIATIVE</th>
<th>LOCATION</th>
<th>MAIN ACTIVITIES</th>
<th>BUDGET</th>
<th>STATUS</th>
<th>REMARKS</th>
</tr>
</thead>
</table>
| **ProAzul** | Northern Mozambique Rural Resilience Project (MozNorte) | Cabo Delgado: Nampula and Niassa | • Strengthening the co-management system;  
• Support fishers through the Mais Peixe program – co-financing program;  
• MCS related activities to combat IUU;  
• Implementation of regulations to ensure sustainable use of natural resources;  
• Support women, youth and IDPs affected by the crisis, enhancing their livelihoods. | 22 M | Development | Funded by the World Bank |
| **Biofund** | Northern Mozambique Rural Resilience Project (MozNorte) | Cabo Delgado focus + Nampula and Niassa | • Community conservation initiatives, incl. Strengthening of CBOs and livelihood;  
• Institutional support for Quirimbas National Park;  
• Support surveillance operations in the Quirimbas National Park. | 16.6 M | Development | Linked |
| **FNDS (ProAzul for fisheries component)** | Northern Crisis Recovery Project | Cabo Delgado | Work in progress – fisheries component yet to be determined. | 200 M | Pipeline | Funded by the World Bank |
| **Total Energies (True North Limited)** | | Palma | • Building fishing centers  
• Port Building – Palma-Sede, Maganja and N’Semo | ? | Development / the crisis have interrupted progress | Direct interventions |
| **UNILURIO** | | Pemba  
Maringanha  
Wimbe  
Gimpia | • Coral reefs restoration  
• Sustainable fishing techniques | 455 k | Development | Funded by TOTAL |
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<tr>
<th>IMPLEMENTING PARTNER</th>
<th>NAME OF THE PROJECT / INITIATIVE</th>
<th>LOCATION</th>
<th>MAIN ACTIVITIES</th>
<th>BUDGET</th>
<th>STATUS</th>
<th>REMARKS</th>
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<tbody>
<tr>
<td>MASC</td>
<td>Palma</td>
<td>• Providing boats and fishing gears</td>
<td>?</td>
<td>Development</td>
<td>Funded by TOTAL</td>
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</tr>
</tbody>
</table>
| MIMAIP               | In pipeline – no name yet.        | Palma Mocimboa da Praia | • Distribution of fishing vessels and gears;  
• Aquaculture (tilapia, oysters, mussels, seaweeds), incl. fingerlings and feed producing units;  
• Building of two wharfs (1 Palma and 1 M. da Praia)  
• Rehabilitation of Palma fishing market;  
• Wooden boats with insulated icebox and engine;  
• Semi-industrial vessels | ?      | Pipeline | Funded by TOTAL, through |
| IUCN, AMA and CORDIO | Locally Empowered Area Protection (LEAP) | Mecufi | • Mangrove restoration;  
• Strengthening coastal communities associations (e.g. CCP)  
• Support revolving credit groups - PCRs | ?      | Development | Funded by German Government |
| Oxfam                | Metuge                           | • Fishing gears distribution for IDPs | ?      | Implemented | |
| ADIN                 | Cabo Delgado (all districts)     | • Develop fisheries projects and programs for northern Mozambique, through partnership with private sector | ?      | Government agency |
ANNEX 3
Schedule, people met

TEAM 1
Jon Lansley, FAO HQ
Erudito Malate, SWIOFC/FAO
Brasilino Salvador, FAO Pemba
Fabio de Sousa, FAO Pemba
Amade Garret, IIP/IDPPE/ADNAP
Arone Salenca, IIP/Prov delegate IDEPA

TEAM 2
Felix Marttin, FAO HQ
Omar Penarubia, FAO HQ
Tatenga Mutenga, FAO Pemba
Manuel Daniel, FAO Pemba
Rachade Lima, IDDP/infrastructures/boat construction/head dept DEPAP
Sergio José, Prov delegate IIP
## TEAM 1

**09/05**
- Pemba/Palma/Pemba
- SDAE Director
- Palma Administrator (oic)
- CCP
- Traders/fishers/processors

**10/05**
- Pemba
  - Director DPAP
  - CCP Ruela
  - Fisher association Wiwanana
  - Director IDEPA
  - Director ADNAP
  - Commander provincial police
  - Director SDAE
  - ProAzul
  - TotalLNG

**11/05**
- Pemba/Macomia/Pemba
  - Director SDAE
  - Director SDPI
  - Administrator Macomia district
  - Northern commander military forces

**12/05**
- Pemba/Mecufi/Pemba
  - Director SDAE
  - Director SDPI
  - Administrator Mecufi district
  - Aquaculture association
  - Fisher association at Mecufi landing site
  - CCP Mecufi

**13/05**
- Pemba
  - Online: IDEPA

**14/05**
- Pemba

**15/05**
- Pemba

**16/05**
- Pemba
  - Workshop validating findings
  - Governor of Cabo Delgado
  - Meeting with CTA (private sector federation)

**17/05**
- Pemba/Maputo

**18/05**
- Maputo
  - Workshop partners

**19/05**
- Maputo
  - Debriefing FAOR

## TEAM 2

**09/05**
- Pemba/ibo
- Ibo director SDAE
- Ibo Director SDPI
- Ibo district permanent secretary
- ASMOG
- AMAPI

**10/05**
- Ibo/Quissanga/ibo
  - Commander in Chief for Quissanga district
  - Quissanga Praia
  - Fishers/traders
  - Tanganhange
  - Fishers/traders women processors

**11/05**
- Ibo/Quirimba/ibo
  - Chef de Poste
  - President market commission
  - Fishers/traders/processors

**12/05**
- Ibo
  - Administrator for Ibo district
  - CCP Ibo
  - State Secretary for Cabo Delgado province (also present, president for youth council of Cabo Delgado)

**13/05**
- Ibo/Pemba
  - Metuge
  - Director Economic Activities SDAE
  - CCP mangroves
  - Visit Aquaculture site
  - Online: IDEPA

**14/05**
- Pemba

**15/05**
- Pemba

**16/05**
- Pemba

**17/05**
- Pemba/Maputo

**18/05**
- Maputo

**19/05**
- Maputo
  - Debriefing FAOR
ANNEX 4

Sites Description and related Recommendations

ADMINISTRATIVE POST OF QUIRIMBA ISLAND

Introduction

The Administrative Post of Quirimba is one of the islands composing the Quirimbas Islands which is an archipelago of coral islands in the Indian Ocean that stretch along the coast of Cabo Delgado province in northern Mozambique.

Quirimba Island is one of the Administrative Posts of the Ibo District that includes the islands of Fiô, Ibo, Matemo, Ninave, Quilálea, Quirambo, Quirimba, Rolas and Sencar. The Administrative Post of Quirimba Island is surrounded by the Indian Ocean in the East, north by Ibo Island, Mefunvu Island in the south and the District of Quissanga in the west.

The population of the Administrative Post of Quirimba is 4,080 (2017 Census). Cabo Delgado province faces an ongoing conflict perpetrated by non-state armed groups (NSAGs) since 2017. The conflict resulted to destruction and inflicted significant damages in infrastructures and displacement of people. The total number of Internally Displaced Persons (IDPs) is estimated at 1,916 households or 9,580 individuals\(^1\). The Administrative Post was highly damaged by Cyclone Kenneth on April 2019, affecting around 500 people and destroying around 350 houses.

A rapid assessment was conducted to evaluate the impact of the conflict on the fisheries sector in Quirimba Island on 11th May 2022. The team stationed in Ibo Island arrived at Quirimba Island by boat in the morning, retuning to Ibo Island in the afternoon of the same day.

\(^1\) As of Feb 2022 [https://displacement.iom.int/mozambique](https://displacement.iom.int/mozambique)

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>GOVERNMENT ENTITY</th>
<th>CONTACT PERSON</th>
<th>POSITION</th>
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</thead>
<tbody>
<tr>
<td>Administrative Post of Quirimba</td>
<td>Administrative Post of Quirimba</td>
<td>Marijana Abdulremane</td>
<td>Head of Administrative Post</td>
</tr>
<tr>
<td>(Ibo District)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Falume Abadre</td>
<td></td>
<td></td>
<td>President market commission</td>
</tr>
</tbody>
</table>

The time and duration of the transportation by boats is limited by the tides. Meetings were conducted with local stakeholders and representatives from the fishers, processors, wholesalers and retailers. Additionally, meetings were conducted with the following government and non-government representatives.
**Assessment**

- There is a market that was constructed in 2017, funded by IFAD. The facilities was used only once during its inauguration.

- The market has solar power, a water pump, tank, and five chest freezers. However, due to a burnt inverter, only half of the solar panels is in used since 2020. The generated energy by the solar panels is only used for lights and one freezer.

- The needed part to replace the burnt inverter is not available in Mozambique causing delays in the repair.

- Due to lack of a source of clean water on the island, fishers and processors clean their fish on the shore using seawater.

- Due to limited freezers and lack of ice machines on the island, fishers, processors and traders are buying ice from Ibo Island, Quissanga and Pemba.

- Due to the conflict with non state armed groups (NSAGs), Internally Displaced Persons (IDPs) moved to the island, most of whom are also doing fishing as source of livelihood.

- Fishing is usually done from 0800 to 1300 depending on the tides. Fishing can either be done using canoes or on foot. Fishing at night is also done.

- Fish are either frozen/chilled before transporting to major markets such Pemba. Transportation time by boat to Pemba can range from 24 hours (good weather) to 2 days (bad weather). Upon reaching Pemba, families of the fishers or processors will sell them in the market or consumers.

- Fish is also sundried by women. Fish is sundried for 3 to 4 days depending on the size. The dried fish, packed in sacks, are transported by road to the major markets such as Pemba, Montepuez, Namuno, Balama in Cabo Delgado Province and Nampula city in Nampula Province.

- The fishers, processors and traders have agreed that the major challenges include lack of electricity, materials for cold chain including freezers, ice machine and lack of boats and fishing gears and poor condition of existing wooden boats.

**Fishery Resources**

The conflict resulted in people migrating to the island. The IDPs who moved into the island are also fishing thereby increasing the fishing effort. The fishers have observed a reduction of the average catch per fisher and average size of the fish in the catch.

**Gears and Vessels**

The fishing village has suffered a significant number of damaged and stolen vessels and gears brought about by Cyclone Kenneth and the conflict. Some fishers rent boats to continue fishing and they weave their own nets. Regarding the preference for wooden or fiber glass boats, prefer fiber glass boats, however, they acknowledge the absence of skills to repair them. They are also having difficulty in getting wood from Pemba and building a 7-meter boat can take up to 1.5 month.

**Value Chain**

The cyclone and conflict have resulted in the destruction of equipment and market facilities. The absence of a source of clean water has resulted in people washing fish at shores and with seawater, which exposes the fish to contamination. Furthermore, the limited energy provided by the solar panel is not enough to freeze fresh fish. Ice cannot be produced anymore in the facility due to the burnt inverter, which has a negative impact on the quality of fish. The absence of ice and/or cold storage during fishing and the long transportation time from the fishing villages to the major markets has also a negative impact on the quality of the fish.
Recommendations

The following recommendations were based on available information gathered during the course of this rapid assessment. These recommendations form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- An appropriate inverter should be provided allowing the use of the full capacity of the solar panels. This will allow all freezers to function improving the availability of ice and cold storage facilities. Also the water pump will be operational, which will provide clean water.

- The design of the processing tables needs to be reviewed. The tables will need to be replaced by concrete tables, without tiles. The current design hampers proper cleaning and should therefore also be changed. The design of the processing tables in the Quissanga market seem to be a good alternative to the current ones in the Quirimba market.

- As soon as possible provide a limited number of vessels and fishing gears to ensure captures are possible further away from the current fishing grounds (which are accessed by foot or with small canoes, whilst avoiding risk of possible overcapacity. Consider vessels and gears to be provided by other projects.

- Confirmation should be sought regarding the number, size and type of vessels and fishing gears that are to be provided by other projects. With this information and up to date data regarding number of fishers, and considering level of available resources that may be sustainably harvested, it can be determined if further vessels and gears are required and a further project proposals may be developed accordingly.

- As soon as possible provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to fisher associations to ensure quality and safety of fish caught and fish products traded.

- Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels and establish regular coordination meetings between security forces and fisher representatives.

- Training for operating larger fishing vessels and new fishing methods introduced to access resources offshore.

Fishery Resources

Due to the recent conflict the monitoring system of the fishery sector has been paused. Fishing extension workers that left owing to the conflict are now returning and data with respect to vessel activity and landings have not been collected. This system needs to be re-installed as a matter of urgency. This will enable a more informed analysis of the status of the fishery stocks, required for the sustainable management of resources.

Gears and Vessels

In the interest of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors for vessels 8 m in length and over. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety, comfort for fishers and quality for product. Quality of product will be improved through the increased capacity to carry ice boxes and quicker transfer to market.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessel and gears are being provided by other projects to avoid creating over capacity in comparison to available resources. Specifications of vessels and gears must adhere to those provided with the fishing regulation².

In the immediate and short term it is recommended to provide a limited number of vessels and fishing gears (numbers that can be safely provided to be calculated considering number to be provided under other projects) as soon as possible to ensure some captures are possible and to avoid risk of overcapacity when other projects provide vessels and gears.

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² Regulamento da Pesca Marítima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020
Value Chain
Providing larger vessels will make it easier to carry ice boxes on board and the adoption of more powerful motors will shorten the travel time between fishing grounds and landing facilities which will improve quality at the critical first stage of the value chain from the point of capture to the landing site.

In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to Associations as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

Cross cutting
Coordination between government agencies dealing with the fisheries sector and security forces is needed. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups are known to move between islands. The security forces have therefore established a curfew restricting fishing activities to daylight and some areas closed to fishing activities have been established. Coordination between the different fishers and security forces is important to ensure no misunderstandings.

A fishing vessel tracking system should be established in order to allow authorities to identify which are registered fishing vessels operating at sea, and will facilitate risk assessment when evaluating if a vessel may be operated by, or carrying, non-state armed group persons. Such a system may also provide the required assurances for security forces to allow fishing activities to resume at night. Fishery authorities would also be able to use the same system to detect when fishing vessels enter closed or restricted areas.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).
Introduction

The Ibo island is one of the islands being part of the Quirimbas Islands which is an archipelago of coral islands in the Indian Ocean that stretch along the coast of the Cabo Delgado province in northern Mozambique. The archipelago consists of about 32 islands, including Matemo, Medjumbe, Metundo, Quirimba, Quisiwi, Vamizi and Rolas, all going up to the Tanzanian border.

Ibo Island is one of the main islands of the Ibo District that includes the islands of Fiõ, Ibo, Matemo, Ninave, Quilálea, Quirambo, Quirimba, Rolas and Sencar. Ibo District is surrounded by the Indian Ocean in the north and east, District of Quissanga in the south and District of Macomia in the west.

Population of the district is 12,205 (2017 Census). Cabo Delgado province faces an ongoing conflict perpetrated by non-state armed groups (NSAGs) since 2017. The conflict resulted in destruction and significant damages on infrastructures and displacement of people. The total number of Internally Displaced Persons (IDPs), coming from the mainland and other islands, of the Ibo District is estimated at 7,270 households or 36,350 individuals. The district was highly damaged by Cyclone Kenneth on April 2019, affecting 15,000 people, 4,600 houses. Eighty percent of the fishing boats and fishing equipment in Ibo were lost or partially damaged while destroying all fishing boats and fishing equipment in Matemo.

A rapid assessment was conducted to evaluate the impact of the conflict on the fisheries sector in Ibo Island on 9th May 2022. The team assessing the Districts of Ibo and Quissanga arrived by aircraft in the morning and established Ibo Island as base station. Meetings were conducted with local stakeholders and representatives from fishers, processors, wholesalers and retailers. Additionally, meetings were conducted with the following government and non-government representatives.

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>NO. OF FISHERS</th>
<th>NO. VESSELS</th>
<th>N. FISHING GEARS</th>
<th>MOTORS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ibo</td>
<td>2166</td>
<td>385</td>
<td>513</td>
<td>422</td>
</tr>
</tbody>
</table>

*Source: Census of Artisanal Fisheries 2012*

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3 As of Feb 2022 [https://displacement.iom.int/mozambique](https://displacement.iom.int/mozambique)

4 Mozambique Cyclone Kenneth: Assessment Report - Ibo District, Cabo Delgado 10 May 2019
Assessment
• Ibo Island has reliable source of electricity from the mainland. Borehole is widely used as source of water.

• However, there is no market nor cold storages and facilities. Ice is produced by individual households.

• Due to the conflict with non-state armed groups (NSAG), Internally Displaced Persons (IDPs) moved to the island, most of whom are also doing fishing as a source of livelihood.

• Fishers, processors and traders agreed that the major challenges include lack of electricity, materials for cold chain including freezers, ice machine and lack of boats and fishing gears and poor condition of existing wooden boats.

SDAE
• 85 percent of the economic activities depend on fisheries.

• 15 percent comes from tourism and agriculture.

• The IDPs are also fishing and fishing is only allowed at daytime.

• 40 percent of the fish caught is intended for local markets while 60 percent is transported to major markets outside the district.

• Fish products include fresh/frozen/chilled fish, sundried fish and fried fish.

• The Ibo District has three main first sale markets namely Matemo, Quirimba and Ibo sede.

• Fish products are transported to Pemba, Montepuez, Namuno, Chiure, Balama, Mueda in Cabo Delgado Province and Nampula city in Nampula Province. Fresh/frozen fish are transported in ice boxes with ice.

PERMANENT SECRETARY
• Prior to the conflict, the population of Ibo District is 13,025 with 2022 projection of 15,000. Currently, the total population including IDPs is around 30,000. There are no IDP camps in Ibo as families host most of them. No conflicts between locals and IDPs on fishing activities are observed.

• 2,400 houses were destroyed by Cyclone Kenneth.

• Due to the conflict, more water, foods and commercial supplies is needed. WFP and OIKOS have provided aid to both IDPs and host families.

• Trainings on fish conservation, agriculture and nutrition were provided to IDPs.
SDPI

- Quirimba market is the only formal market facility in Ibo District. However, it is not fully operational due to a burnt inverter. There is no electricity from the national grid available at Quirimba Island. There are no ice machines and ice is purchased from Quissanga.

- There are plans to build markets in Quirimba, Matemo and Ibo.

- Cyclone Kenneth and the conflict did not destroy public infrastructure but negatively affected the fish value chain by destroyed and stolen boats and decrease in economic returns by reduced quantity of fish caught.

- The priority for building infrastructure is the island of Matemo as currently it does not have any market facility nor electricity. The island has a population of around 2,000 people, of which 80 percent are fishers.

- The district does not have landing sites/bay for transportation of people.

- The trade in fresh fish is being encouraged, while dried fish production using bamboo racks is discouraged, as it takes time (days) to dry.

ADMINISTRATOR

- The Quirimbas islands, especially Ibo Island, is a UNESCO World Heritage Site.

- The archipelago has a rich biodiversity with 6 species of coral reef, 6 species of mangroves and 360 species of fish.

- The Vila do Ibo was founded in 1761.

- Cyclone Kenneth destroyed 40 percent houses.

- Due to the congoing conflict, 35,000 IDPs moved to Ibo District.

- The district was attacked 8 times with the latest attacked in Matemo where a hospital was destroyed.

- Fishers need boats and gears while women catching octopus need gloves and boots for safety.

- San Lazarus bank, which is 45 miles from Pemba, is currently not being exploited by the fisheries sector, while there is a great potential. To enable fishers to go to the bank, they will need bigger vessels, different gear and capacity building.
STATE SECRETARY FOR CABO DELGADO PROVINCE

- Appreciate the work that FAO, in collaboration with the government, is doing.

- Encourage the team to develop programs for youth so that they will not be persuaded to join the NSAG.

ASMOG

- Current members of 25 people.

- Supports 90 women in octopus capture.

- Before Cyclone Kenneth and the conflict, a low number of people operated a sustainable fishery. The cyclone and conflict resulted in the influx of people coming in without any fishing assets. These people started fishing using any available materials resulting in the (partial) destruction of coral.

- More people are fishing in the same place. This results in reduced quantity and less quality (young fish).

- The group suggested diversification of activities like coffee/agriculture and other training on business and conservation of fish.

AMAPI

- Fishing is usually done for 7 hours depending on the tide level. No available ice/cold storage on board.

- On average, daily catch is 10 kilogram/woman and 25 kilogram/man.

- Upon landing in Ilbo, fish is cleaned, frozen and stored in a freezer for 3 to 4 days before transporting to Pemba, which is 5 to 6 hours using boat.

- Frozen octopus are usually transported to Tandanhangue (2 hours by sea) and to Ilha de Moçambique (15 hours by road).

- The fishers, processors and traders agreed that the major challenges include lack of equipment for fishing including boats, shoes/boots, harpoons, ice box and cold storage. Also, available financial assistance and credits will be needed. Trainings on management, processing, conservation and value addition will help them to ensure quality of the fish products.

CCP

- The conflict resulted in less members, from 20 to 10, as people left due to lack of work in the island.

- Cyclone Kenneth destroyed coral reefs resulting in less fish in the area. It also destroyed boats and canoes. Boats cannot be repaired due to lack of wood.

- The conflict resulted in the movement of IDPs. This meant that more people are fishing in the same area. Fishers report that average size of caught fish and average catch per fisher has gone down, in comparison to the situation before the conflict/cyclone Kenneth.

- Fishing is usually done from 05:00 to 15:00. Night fishing is also allowed, however, a clearance must be obtained from the military before 17:00.

- Fish are only chilled with ice (from households) upon reaching landing sites.

- Fish are also sundried for 2 to 3 days depending on the size of the fish.

- Fish products are transported to major markets mainly Pemba, Montepuez and Nampula. Prior to transportation to Pemba, fish needs to be transported to Quissanga (by sea) for an hour and then (by road) 4 to 5 hours depending on the weather.

- Regarding the preference for wooden or fiber glass boats, fishers prefer fiber glass boats because it is more comfortable and not heavy, however, they acknowledge the absence of skills to repair them.

- The group mentioned the need for building materials for a place/office and fiber boat for patrolling. Other materials such as uniforms and binoculars will also help to strengthen their work in monitoring the sanctuary.

Fishery Resources

The conflict resulted to people migrated onto the island. The IDPs who moved to the island are also fishing and therefore there are now more fishers fishing in the same area. The fishers have observed a reduction of the average size of the fish in the catch and a decrease of the average catch per fisher.
**Gears and Vessels**

The fishing village has suffered a significant number of damaged and stolen vessels and gears brought about by Cyclone Kenneth and the conflict. Regarding the preference for wooden or fiber glass boats, prefer fiber glass boats, however, they acknowledge the absence of skills to repair them. They are also having difficulty in getting wood that are found in the areas closed for conflict.

**Value Chain**

The cyclone and conflict have resulted in the destruction of equipment and market facilities. The absence of ice or cold storage during fishing and the long transportation time from the fishing villages to the major markets has also negative impacts on the quality of the fish.

**Recommendations**

The following recommendations were based on available information gathered during the course of this rapid assessment. These recommendation form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- As soon as possible provide a limited number of vessels and fishing gears to ensure captures are possible whilst avoiding risk of possible overcapacity. Consider vessels and gears to be provided by other projects.

- Confirmation should be sought regarding the number, size and type of vessels and fishing gears that are to be provided by other projects. With this information and up to date data regarding number of fishers, and considering level of available resources that may be sustainably harvested, it can be determined if further vessels and gears are required and a further project proposals may be developed accordingly.

- As soon as possible provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to fisher associations to ensure quality and safety of fish caught and fish products traded.

- Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels and establish regular coordination meetings between security forces and fisher representatives.

- Training for operating larger fishing vessels and new fishing methods introduced to access resources offshore.

**Fishery Resources**

Due to the recent conflict the monitoring system of the fishery sector has been paused. Fishing extension workers that left owing to the conflict are now returning and data with respect to vessel activity and landings have not been collected. This system needs to be re-installed as a matter of urgency. This will enable a more informed analysis of the status of the fishery stocks, required for the sustainable management of resources.
**Gears and Vessels**

In the interest of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors for vessels 8 m in length and over. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety, comfort for fishers and quality for product. Quality of product will be improved through the increased capacity to carry ice boxes and quicker transfer to market.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessel and gears are being provided by other projects to avoid creating over capacity in comparison to available resources. Specifications of vessels and gears must adhere to those provided with the fishing regulation. In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to Associations as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

**Value Chain**

Providing larger vessels will make it easier to carry ice boxes on board and the adoption of more powerful motors will shorten the travel time between fishing grounds and landing facilities which will improve quality at the critical first stage of the value chain from the point of capture to the landing site.

In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to Associations as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

**Cross cutting**

Coordination between government agencies dealing with the fisheries sector and security forces is needed. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups are known to move between islands. The security forces have therefore established a curfew restricting fishing activities to daylight and some areas closed to fishing activities have been established. Coordination between the different fishers and security forces is important to ensure no misunderstandings.

A fishing vessel tracking system should be established in order to allow authorities to identify which are registered fishing vessels operating at sea, and will facilitate risk assessment when evaluating if a vessel may be operated by, or carrying, non-state armed group persons. Such a system may also provide the required assurances for security forces to allow fishing activities to resume at night. Fishery authorities would also be able to use the same system to detect when fishing vessels enter closed or restricted areas.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).
Observations and recommendations

Introduction
Macomia is situated in Cabo Delgado, approximately 200 km North of Pemba. Macomia District covers an area of 4,252 km² with a pre-conflict population of approximately 91,033 inhabitants. In 2012, according to a census of artisanal fisheries conducted at that time Macomia district was populated by the following number of fishers, vessels, gears and motors.

Macomia has been heavily affected by the conflict. At the time of the assessment it wasn’t possible to access by car as the road from Pemba was not secure. Access to the town was only possible via plane from Pemba. Owing to the conflict a large number people fled the town for safety reasons. Today people are starting to return, including government workers which includes fishing extension workers.

A rapid assessment was conducted to evaluate the impact of the conflict on the fisheries sector in Macomia on the 11th May 2022. The team assessing Pemba arrived by aircraft in the morning, returning to Pemba by aircraft in the afternoon of the same day. The team was transported from the airport to Macomia town and fish market by a security firm using a convoy of 3 armored vehicles. It was not possible to visit the fishing centers as the access roads were closed. A meetings was achieved with local stakeholders and representatives from the catching, processing, wholesalers, retailers and support service providers such as carpenters and mechanics. Additionally meetings were achieved with the following government representatives.

Assessment
Main observations:

- Many IDPs in area, some people coming back including government workers, concentrated at Macomia-sede (administrative center).
- There are 2 fishing centers but no-one currently living in either.
- Military try to control but access roads are blocked.
- Priorities are fishing gears/materials, boats.
- Fish previously supplied Markets in Nampula and Niassa.
- 1st sale market built 2016, destroyed by Kenneth.
- 2nd sale market 2010, equipped but no refrigeration, also destroyed by Kenneth.
- In 2019, 45 motorized boats were given following Kenneth, all destroyed/stolen by insurgents, 1 motor left.
- In 2020 there was believed to be 3250 fishers, at time of assessment the number of fishers was estimated at 2000.
- Houses of extension workers have been destroyed.
- 8 CCPs in area all willing to share info. Support to CCP is a priority.

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>NO. OF FISHERS</th>
<th>NO. VESSELS</th>
<th>N. FISHING GEARS</th>
<th>MOTORS</th>
</tr>
</thead>
<tbody>
<tr>
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<td>7585</td>
<td>1,335</td>
<td>1186</td>
<td>1,058</td>
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Source: Census of Artisanal Fisheries 2012

<table>
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<tr>
<th>DISTRICT</th>
<th>GOVERNMENT ENTITY</th>
<th>CONTACT PERSON</th>
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<tr>
<td>Macomia</td>
<td>SDAE</td>
<td>Abel Atanasio Josefo</td>
<td>Director</td>
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<td></td>
<td>SDPI</td>
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<tr>
<td></td>
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</tr>
<tr>
<td></td>
<td>FADM</td>
<td>Pacule</td>
<td>Military Commander</td>
</tr>
</tbody>
</table>
• Fish Market needs rehabilitation. IDEPA had planned a market but it is not known at what stage the planning is at.

• One ice machine exists but don’t know if works owing to lack of electricity. If working able to produce 1000 (5 kg) ice blocks per day – 5000kg.

• There is some expectation ice boxes will be provided but don’t know when these may be delivered, if at all.

• A variety of associations exist in Macomia.

• Community association has 11 members, some died in conflict others not yet returned.

• Women fish in the margins and collect oysters.

• Stakeholders that when funds are available Pemba or Ibo get priority over Macomia.

Fishery Resources
It was reported that were no fishing because of security situation. However those interviewed considered that fishery resources to be in a healthy condition owing to lack of fishing activities since the beginning of the conflict and ongoing restrictions and that quantity of fish had definitely increased. Support to government extension workers and CCPs for monitoring of catches should be considered.

Gears and Vessels
Cyclone Kenneth destroyed nearly all vessels and then replaced vessel and motors were stolen by insurgents.

Wooden Machua boats were considered the best as anyone can use them. Macomia has a good supply of wood available to make repairs to vessels. Most boat builders now in Pemba, will only return when the area is secure.

One fisher with experience of fiber glass (GRP) vessels felt GRP vessels are better/easy to handle and faster but wooden vessels can carry more catch.

Motors of 40 hp are required. Motorbike mechanics can conduct repairs on outboard engines. Fuel is a problem as the local gas station is currently not working. Fuel is being sourced from Pemba which is a little more than 200 km away.

It was reported that 2 years ago 10-15 fishers were capture by insurgents and have not been seen since.

Value Chain
There is currently a dependency on fish as not allowed to fish and there are no boats. Roads connecting to fishing centers have been destroyed and ice boxes all gone, it would not be possible to transport fish from landing sites if fish was available. Landing sites exist in Pangane.
It was estimated that there are approximately 50 dried fish sellers in Macomia whilst we were also advised that approximately 60 women are selling fish, one product is partly cooked fish. Fish is being sold locally and to IDPs. Fresh carapau is bought in Pemba to sell locally. Owing to lack of conservation it is only possible to buy small amounts. Some traders have been trying to reach quionga (in Palma) to buy fish.

It is 300km from Macomia to the market in Montepeuz. It is still possible to reach this market by travelling by local transport (chapas) all the way. During the course of transit post-harvest losses occur in that the weight of fish decreases during transport. It is believed that this is a problem of using too much salt. Transport is currently expensive, an example was given where a women bought 15,000 mts worth of fish. By the time she sold and deducted transport costs was left with 10,000 mts, resulting in a loss of 5,000 mts. At the time of the survey a daily secure Rwandan convoy travels between Mocimboa de Praia to Palma.

Location of Macomia market was not considered as optimal, it was felt it would be better placed nearer the main road for ease of access to transport links. However the local authorities have emphasized that the current location is aligned with the Territorial Development Plan, which concentrates the fishing market infrastructures with other busyness stores, including a local market.

The main species traded fresh and dried were identified as follows:

- Dried fish – papagia, coleho, peixe pedra, garoupa, barracuda, agulha, polvo, camarao
- Fresh fish – sardinia, carapau, variety of small pelagic.

Processors said that they would like training to improve processing.

When situation goes back to normal traders will sell fish to Macomia and Nampula markets.

**Recommendations**

The following recommendations were based on available information gathered during the course of this rapid assessment. These recommendation form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- As soon as possible, and subject to the security situation, the access roads connecting Macomia to the fishing centers and landing sites need to repaired to the extent possible to allow for transport of fish. In the longer term new roads should be planned.
• As soon as possible provide some vessels and fishing gears to ensure captures are possible whilst avoiding risk of possible overcapacity considering vessels and gears to be provided by other projects.

• Confirmation should be sought regarding the number, size and type of vessels and fishing gears that are to be provided by other projects. With this information and up to date data regarding number of fishers, and considering level of available resources that may be sustainably harvested, it can be determined if further vessels and gears are required and a further project proposals may be developed accordingly.

• As soon as possible provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to ensure quality and safety of fish caught and fish products traded.

• Markets in Macomia need to be rehabilitated and ice machine restarted.

• Processing facilities to be provided and training provided to improve processing methods.

• Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels and establish regular coordination meetings between security forces and fisher representatives.

• Training for operating larger fishing vessels and new fishing methods introduced to access resources offshore.

• Resumption of monitoring fishing activities collecting data with respect to vessel activity and landings. Support to be provided to government agencies and CCPs.

**Fishery Resources**

Due to the recent conflict the monitoring system of the fishery sector has been paused. Fishing extension workers are only now returning. It appears that all fishing activities have been paused. Once activities resume Monitoring systems need to be in place in order to collect data with respect to vessel activity and landings. Collection of this data will contribute to knowledge of the status of the fishery stocks, and facilitate sustainable management of these resources. Support should be provided to government agencies and CCPs collecting data.

**Gears and Vessels**

In the interested of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors appropriate to the size of vessel. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety and comfort for fishers and also increase capacity to carry ice boxes for catch quality.

Although it is believed that inshore resources are in a good condition, vessels and gears provided should be aimed at accessing underutilized resources further offshore and away from sensitive habitats.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessel and gears are being provided by other projects to avoid creating over capacity in comparison to available resources. Specifications of vessels and gears must adhere to those provided in the fishing regulation6.

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6 Regulamento da Pesca Marítima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020
Once the restrictions by the defense forces are released, in the immediate and short term it is recommended to provide a limited number of vessels and fishing gears (numbers that can be safely provided to be calculated considering number to be provided under other projects) as soon as possible to ensure some captures are possible and to avoid risk of over-capacity when other projects provide vessels and gears.

**Value Chain**

Ensuring access roads connecting fishing centers and landing sites are passable is a top priority. Currently these access roads are blocked.

Providing larger vessels will make it easier to carry ice boxes on board and the adoption of more powerful motors will shorten the travel time between fishing grounds and landing facilities which will improve quality at the critical first stage of the value chain from the point of capture to the landing site.

Landing facilities, markets, processing and cold storage facilities are either absent. These need to be rehabilitated where possible or new facilities provided as required.

In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

**Cross cutting**

Coordination between government agencies dealing with the fisheries sector and security forces is needed. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups are known to move between islands. The security forces have therefore established a curfew restricting fishing activities to daylight and some areas closed to fishing activities have been established. Once fishing resumes all parties need to be clear when and where restrictions are being enforced.

A fishing vessel tracking system should be established in order to allow military authorities to identify which are registered fishing vessels operating at sea, and will facilitate risk assessment when evaluating if a vessel may be operated by, or carrying, non-state armed group persons. Such a system may also provide the required assurances military forces need to allow fishing activities to resume at night. Fishery authorities would also be able to use the same system to detect when fishing vessels enter closed or restricted areas.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).
MECUFI
Observations and recommendations

Introduction
Mecufi is situated in Cabo Delgado, approximately 50 km South of Pemba. Mecufi District covers an area of 1,254 km² with a pre-conflict population of approximately 48,503 inhabitants.

Mecufi has not been affected by the conflict. At the time of the assessment it was possible to access by car from Pemba. With the exception of a few kms midway, the road from Pemba to Mecufi is not sealed but passable.

A rapid assessment was conducted to evaluate the fisheries sector in Mecufi on the 11th May 2022. In addition to meeting local stakeholders and representatives from the catching, processing, wholesalers, retailers and support service providers such as carpenters and mechanics, meetings were achieved with the following government representatives.

Assessment
Main observations:

• Number of fishers estimated at 1299 fishers including IDPs. The number of fishers had increased and is still increasing.

• Number of fishing gears estimated at 840.

• Number of vessels estimated at 376, with just 3 lost owing to the conflict.

• Five of the fishing vessels have motors, the rest are canoes.

• The road to Pemba, although passable, is unsealed apart from a 2-3 km in the middle.

• There are 6 fishing associations.

• There is 1 aquaculture association.

• There are 3 mangrove protection associations.

• Main market is Pemba.

• Although being an important center for fish, no market exists.

• Interest in accessing tuna resources offshore.

Priorities were identified as:

• Construction of a fishing harbor.

• Landing facilities.

• Ice machines and cold stores.

• Development of a semi-industrial motorized fleet to exploit tuna resources accessible 1-3 kms offshore, which may include deployment of Anchored Fish Aggregating Devices (aFAD).

• Training for mechanics to maintain engines.

• A vessel for monitoring fishing activities.

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>GOVERNMENT AND NON-GOV. ENTITY</th>
<th>CONTACT PERSON</th>
<th>POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mecufi</td>
<td>SDAE</td>
<td>Joao Gaspar</td>
<td>Director</td>
</tr>
<tr>
<td></td>
<td>SDPI</td>
<td>Assumane Juma</td>
<td>Director</td>
</tr>
<tr>
<td></td>
<td>Administration</td>
<td>Dinis Mutande</td>
<td>Administrator</td>
</tr>
</tbody>
</table>
Fishery Resources
It was reported and that fish stocks accessible from Mecufi are healthy. One IDP fisher from Macomia said he would not move back to Macomia as the fishing was better from Mecufi. Support to government extension workers and CCPs for monitoring of catches should be considered.

It was reported that 3 community led closed areas are being implemented in Mecufi district to protect sensitive areas.

Mangrove association representatives explained their wish to plant and rehabilitate mangrove swamp. They also wished to grow mangrove ‘saplings’ to sell for planting elsewhere, for this they requested plastic pots for transporting. A wish to teach fishers to fish without harming mangroves was expressed.

With reference to aquaculture, a lack of funds to buy food was hampering production. Food was being made from shrimp shells and chicken manure when available. Tools/spades for aquaculture don’t last owing to salt water and corrosion. The aquaculture facilities existed of tanks dug into the earth in a cleared area of mangrove within which captured juvenile fish were reared. Water within the tanks were replenish at high tide.

Gears and Vessels
Although the number of vessels and gears have not been reduced by the conflict, there is a shortage of vessels, owing to number of IDP fishers that have moved to the area, and a need to upgrade canoes to bigger vessels. One fishermen’s association consisting of 50 fishers has just 1 boat which they share. Each day 5 fishers take a turn to use the boat. There are some women members of this association helping with shore activities.

No fishing materials are available in Mecufi. There is a lack of motorized vessels and a requirement/request for 40hp motors (not 15 hp) especially for 8-10 m vessels. Supply of fuel is not a problem as there is a functioning fuel station in town. There are no mechanics in Mecufi. There are some boat builders working as individuals.

One fisher explained through a credit and savings association he had managed to buy a small vessel but would like to buy a bigger one to go further out to sea. Another fisher who had owned a fiber glass vessel 15 years ago, liked it and claimed it was easier to maintain.

Value Chain
Traders report problems with getting fish to markets and lack of means of conservation. A lack of ice boxes was reported. The small amount of ice they have is made at home. Buyers from Pemba need to bring their own ice.

There is currently no landing or port facilities, no market and no means of commercial ice production in Mecufi.
Recommendations

The following recommendations were based on available information gathered during the course of this rapid assessment. These recommendations form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- As soon as possible provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to ensure quality and safety of fish caught and fish products traded.

- As soon as possible experimental fishing for tuna should be conducted by relevant experts (consultants/fishers) to determine the potential for developing a tuna fishery for Mecufi, including use of aFADs.

- Larger motorized vessels suitable for accessing offshore fisheries should be provided, and support services such spare parts and suitably qualified mechanics for maintenance purposes should be readily accessible.

- Alongside an experimental fishing programme, training should be provided for operating larger fishing vessels and new fishing methods such as aFADs to access resources offshore tuna resources. Consideration should be given for fisher exchange programmes for fishers to share and learn good practices from each other.

- Construction of a fishing harbor or landing site with all facilities should be considered. The stability of the area (unaffected by the conflict) and apparent abundance of resources suggests Mecufi as a good site for development of infrastructures.

- In the longer term the road to Pemba should be improved.

- Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels.

- Support to be provided to government agencies and CCPs monitoring fishing activities collecting vessel activity and landings data.

Fishery Resources

It was reported and there was general agreement that fish stocks accessible from Mecufi are healthy and that there is potential for development of onshore activities available offshore such as tuna, which are reportedly being caught with individual weights of up to 20kg (local names given as atum branco and atum preto).

Collection catch data will contribute to knowledge of the status of the fishery stocks, and facilitate sustainable management of these resources. Support should be provided to government agencies and CCPs collecting data.

Gears and Vessels

In the interest of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors appropriate to the size of vessel. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety and comfort for fishers and also increase capacity to carry ice boxes for catch quality.
Vessels and gears provided should be aimed at accessing underutilized resources further offshore and away from sensitive habitats. In the case of Mecufi, the relatively nearby tuna fish stocks appear to be healthy and under-exploited, it may be appropriate to increase the number of vessels currently used.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessels and gears are being provided by other projects to avoid creating overcapacity in comparison to available resources. At the time of the assessment, Mecufi is included as one of the sites for the MozNorte project - World Bank funded. It includes the program “Mais Peixe” - match grant which may include support on vessels and gears. Specifications of vessels and gears must adhere to those provided with the fishing regulation¹.

**Value Chain**

Mecufi does not currently benefit from a fishing harbour, landing facilities, markets, processing or cold storage facilities. Mecufi appears to represent good opportunity for development owing to both the stability of the area (unaffected by the conflict) and apparent abundance of resources within relatively easy reach 1-3 kms from shore.

In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

**Cross cutting**

Coordination between government agencies dealing with the fisheries sector and security forces is recommended. To facilitate monitoring a fishing vessel tracking system should be established.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).

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¹ Regulamento da Pesca Marítima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020
Introduction
Metuge is one of the districts in Cabo Delgado province. The district is around 40 kilometers west of the city of Pemba and is surrounded by the District of Quissanga in the north, District of Mecufi in the south, Districts of Ancuabe in the west and Pemba in the east.

Population of the district is 86,866 (2017 Census). Cabo Delgado province faces an ongoing conflict perpetrated by non-state armed groups (NSAGs) since 2017. The conflict resulted in displacement of people moving to different nearby districts. The total number of Internally Displaced Persons (IDPs) hosted in Metuge is estimated at 29,117 households or 124,036 individuals. The district was highly damaged by Cyclone Kenneth on April 2019, affecting 7,260 people and affected 1,452 houses.

A rapid assessment was conducted to evaluate the impact of the conflict on the fisheries sector in Metuge District on 13th May 2022. Meetings were conducted with local stakeholders and representatives from the catching, processing, wholesalers and retailers. Additionally, meetings were conducted with the following government and non-government representatives.

Assessment
• Prior to the conflict, the population of Metuge District is 86,866 with 2022 projection of 117,000. The number of IDPs is around 147,000 and are mostly from Quissanga.
• Main activities of IDPs include agriculture and poultry.
• IDPs who are fishers moved to the coastal area. This led to increase of support or aid from different NGOs such as provision of fishing gears, thereby increasing the total fishing effort on the fishery resources.
• Cyclone Kenneth and the conflict have resulted in a significant destruction of vessels.
• The CCP has 31 members who are mostly fishers and traders.
• The total fishing duration (including traveling to the fishing grounds) is 4 hours. Some fishers directly transport the caught fish to Pemba using boats with engines. Transportation time by sea is around 15 minutes while transportation by road to Pemba is around 40 to 45 minutes while during bad weather, it can be around 2 to 3 hours or even half-day.
• The ministry funded an Aquapark with cost of 4 million MZN which intends to boost aquaculture production for tilapia. The facility has 40 ponds (40 x 10 meters) which will be rented out to private beneficiaries. However, the facility is not operational, as the construction has not been finalized.
• The fishers, processors and traders have agreed that the major challenges include lack of materials for cold chain including freezers, ice boxes and lack of boats and fishing gears.
• SDAE Director identified Arimba with potential for development, looking at the possibility of introducing solar panels for freezers and ice production.

Fishery Resources
The conflict resulted to people migrated into the district. The fishers have observed the reduction of the quantity and size of the fish catch. However, also an increase of the number of caught species was observed, including species that were never before observed.

The introduction of aquaculture needs further studies on the inputs including finance, fingerlings and feeds. Also business plans will need to be developed, to demonstrate the profitability of aquaculture operations. Only after thee business plans demonstrate to be profitable, further efforts should be made to propagate aquaculture in the area.

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>GOVERNMENT ENTITY</th>
<th>CONTACT PERSON</th>
<th>POSITION</th>
</tr>
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<tbody>
<tr>
<td>Metuge</td>
<td>SDAE</td>
<td>Manuel Germano</td>
<td>Director</td>
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<tr>
<td></td>
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8 As of Feb 2022 [https://displacement.iom.int/mozambique](https://displacement.iom.int/mozambique)
9 Mozambique Cyclone Kenneth: Assessment Report - Metuge District, Cabo Delgado 12 May 2019
**Gears and Vessels**

The district has suffered a significant number of damaged vessels and gears brought about by Cyclone Kenneth and the conflict. Fishing gears were destroyed during the cyclone. Long fishing duration and transportation to Pemba is due to the lack of boats with engine.

**Value Chain**

The absence of ice or cold storage during fishing and the long transportation time from the fishing villages to the major markets have negative impacts on the quality of the fish.

**Recommendations**

The following recommendations were based on available information gathered during the course of this rapid assessment. These recommendation form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- As soon as possible provide a limited number of vessels and fishing gears to ensure captures are possible whilst avoiding risk of possible overcapacity. Consider vessels and gears to be provided by other projects.

- Confirmation should be sought regarding the number, size and type of vessels and fishing gears that are to be provided by other projects. With this information and up to date data regarding number of fishers, and considering level of available resources that may be sustainably harvested, it can be determined if further vessels and gears are required and a further project proposals may be developed accordingly.

- As soon as possible provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to fisher associations to ensure quality and safety of fish caught and fish products traded.

- Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels and establish regular coordination meetings between security forces and fisher representatives.

- Training for operating larger fishing vessels and new fishing methods introduced to access resources offshore.
Fishery Resources
Due to the recent conflict the monitoring system of the fishery sector has been paused. Fishing extension workers that left owing to the conflict are now returning and data with respect to vessel activity and landings have not been collected. This system needs to be re-installed as a matter of urgency. This will enable a more informed analysis of the status of the fishery stocks, required for the sustainable management of resources.

Gears and Vessels
In the interested of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors for vessels 8 m in length and over. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety, comfort for fishers and quality for product. Quality of product will be improved through the increased capacity to carry ice boxes and quicker transfer to market.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessel and gears are being provided by other projects to avoid creating over capacity in comparison to available resources. Specifications of vessels and gears must adhere to those provided with the fishing regulation.

In the immediate and short term it is recommended to provide a limited number of vessels and fishing gears (numbers that can be safely provided to be calculated considering number to be provided under other projects) as soon as possible to ensure some captures are possible and to avoid risk of overcapacity when other projects provide vessels and gears.

Value Chain
Providing larger vessels will make it easier to carry ice boxes on board and the adoption of more powerful motors will shorten the travel time between fishing grounds and landing facilities which will improve quality at the critical first stage of the value chain from the point of capture to the landing site.

In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to Associations as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

Cross cutting
Coordination between government agencies dealing with the fisheries sector and security forces is needed. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups are known to move between islands. The security forces have therefore established a curfew restricting fishing activities to daylight and some areas closed to fishing activities have been established. Coordination between the different fishers and security forces is important to ensure no misunderstandings.

A fishing vessel tracking system should be established in order to allow authorities to identify which are registered fishing vessels operating at sea, and will facilitate risk assessment when evaluating if a vessel may be operated by, or carrying, non-state armed group persons. Such a system may also provide the required assurances for security forces to allow fishing activities to resume at night. Fishery authorities would also be able to use the same system to detect when fishing vessels enter closed or restricted areas.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).

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10 Regulamento da Pesca Marítima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020
Introduction

Palma is situated in the North of Cabo Delgado, approximately 40km south of the border with Tanzania. Palma District covers an area of 3,567 km² with a pre-conflict population of approximately 52,269 inhabitants. In 2012, according to a census of artisanal fisheries conducted at that time Palma district was populated by the following number of fishers, vessels, gears and motors.

Palma has been heavily affected by the conflict. In 2019 Non-State armed Groups attacked the town causing much destruction to infrastructures and destroying and stealing fishing vessels and fishing gears. Many nationals and some foreigners were injured and killed during the attack. The area is currently stable owing to the presence of the Rwanada, SADC and Mozambican military forces who are collaborating to repel insurgents and maintain peace in the area. Although the town and immediate area is considered relatively safe to visit, in is advised only to access by road as part of a military convoy. The town center is situated on a small hill overlooking Palma bay, a short distance to the fish market and fishing vessel landing area.

The population of Palma and surrounding had been expanding owing to the TOTAL LNG Project. Owing to the conflict a large number people who were able to, fled the town for safety reasons. Today people are starting to return to Palma, including government workers which includes fishing extension workers.

A rapid assessment was conducted to evaluate the impact of the conflict on the fisheries sector in Palma on the 9th May 2022. The team assessing Palma arrived by aircraft in the morning, returning to Pemba by aircraft late in the afternoon of the same day. The team was transported from the airport to Palma town and fishing center by security firm using a convoy of 3 armored vehicles. In addition to meeting local stakeholders and representatives from the catching, processing, wholesalers, retailers and support service providers such as carpenters and mechanics, a meeting were achieved with the following government representatives.

A meeting with a representative from TOTAL was held in Pemba on 10th May who provided input on the priorities and plans for activities for Palma and surrounding district.

Assessment

Main observations:

- Before conflict there were approximately 2080 fishers in Palma, now 510 are registered but maybe there are more, and more are returning.
- Lack of security at sea and conflict with authorities.
- Access to fishing grounds limited owing to implementation of restricted fishing areas.
- Owing to the distance of permitted fishing areas it takes longer time than before to deliver fish to local market.
- Currently there are 570 boats are registered but still counting. Many vessels and motors stolen by insurgents or destroyed. Need motorized boats.
- Fishing extension workers only now returning and don’t have sufficient resources to visit all centers.
- Wood for boat repairs is in short supply. 50km distance to supplies and not secure route.

### Palma District

<table>
<thead>
<tr>
<th>District</th>
<th>No. of Fishers</th>
<th>No. Vessels</th>
<th>N. Fishing Gears</th>
<th>Motors</th>
</tr>
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<tr>
<td>Palma</td>
<td>7440</td>
<td>1,432</td>
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Source: Census of Artisanal Fisheries 2012

### District Government Entity

<table>
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<tr>
<th>District</th>
<th>Government Entity</th>
<th>Contact Person</th>
<th>Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macomia</td>
<td>SDAE Administration</td>
<td>Insua Assumane</td>
<td>Interim Director</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pedro Gil Njompe</td>
<td>Interim Administrator</td>
</tr>
</tbody>
</table>
• Shortage/lack of fishing gears and materials.

• Market is in poor condition and fishers prefer to sell the catch outside of the market even though they still pay a fee.

• Need adequate landing facilities, means of conservation and processing units.

• TOTAL have a project to construct new fishing port with all facilities but stopped once conflict started. In addition to Palma there are plans to also building fishing port/landing and processing facilities in Maganja and N’semo.

• Total building board walk across mangrove south Palma “Magana” to access coast.

• TOTAL is supporting a Palma fisher Association by buying all fish through them.

• Fishers have been psychologically affected by restrictions.

• Training is required for both fishing and processing methods.

• Fishers have been psychologically affected as they used to be able to fish day and night and now restricted to only day light hours which restricts a lot.

Local government representatives advised that a plan to rebuild Palma have been produced but need funds to implement. They also stressed fishers need a lot of support and listed the priorities as follows:

1. Processing
2. Conservation
3. Capacity building in capture and processing

Fishery Resources
Fishery resources are considered to be in a very healthy condition owing to lack of fishing activities since the beginning of the conflict and ongoing restrictions relating to both areas and zones. TOTAL LNG Project has implemented restricted zones for safety reasons relating to project development and fishing is only allowed during daylight hours for safety reasons.

TOTAL catches have decreased owing to reduced effort but fishers report that there are more fish now than before the conflict.

Gears and Vessels
Currently there are 570 vessels registered made from wood and do not have ice boxes. Motorised boats exist but there are not many.

As part of a project support by TOTAL, anchored fish aggregation devices (aFAD) has been installed outside the islands, exact location unknown. The conflict caused this project to stop and at tehtime of the survey it wasn’t possible to confirm if the aFADS still exist and whether they have been successful.

Methods of fishing used in Palma: purse seine, gillnets (bottom set and drifting), handline, traps and harpoon.

Target species include: atum, carapau, coelho, garoupa, ladrao, papagaio, peixe pedra, salmonete, and sapateiro.
Value Chain

Vessels need ice boxes to maintain quality of catch at the critical first stage of the value chain from the point of capture to the landing site. There is not enough space for vessels at the landing site. The distance from landing site to processing facilities is 40km. Lack of transport makes this difficult. Previously transport and cool boxes were available but at the time of assessment. Processing facilities suffer from lack of energy, before the conflict there were ten freezers but currently there is only one. A processing association exists and comprises of 10 members.

The existing market was built in 2010/12. The market is still there but fishers prefer to sell catch outside the market even though they still have to pay a fee. An ice plant house exists but there is no equipment. A toilet exists but is in disrepair. Nampula is considered a good market as provides access owing to hotels and expatriates. To access this market refrigerated transport is needed. Women sell fish without ice or insulated fish boxes, selling fresh fish locally in very small amounts. TOTAL had a project to rebuild the market and port facilities but is stalled owing to the conflict.

Unsold fish is dried and salted and fish waste (guts) are buried.

Recommendations

The following recommendations were based on available information gathered during the course of this rapid assessment. These recommendation form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- As soon as possible provide a limited number of vessels and fishing gears to ensure captures are possible whilst avoiding risk of possible overcapacity. Consider vessels and gears to be provided by other projects.

- Confirmation should be sought regarding the number, size and type of vessels and fishing gears that are to be provided by other projects. With this information and up to date data regarding number of fishers and considering level of available resources that may be sustainably harvested , it can be determined if further vessels and gears are required and a further project proposals may be developed accordingly.

- As soon as possible provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to fisher associations to ensure quality and safety of fish caught and fish products traded.

- Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels and establish regular coordination meetings between security forces and fisher representatives.

- Training for operating larger fishing vessels and new fishing methods introduced to access resources offshore.
**Fishery Resources**

Due to the recent conflict the monitoring system of the fishery sector has been paused. Fishing extension workers that left owing to the conflict are now returning and data with respect to vessel activity and landings have not been collected. This system needs to be re-installed as a matter of urgency. This will enable a more informed analysis of the status of the fishery stocks, required for the sustainable management of resources.

**Gears and Vessels**

In the interest of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors for vessels 8 m in length and over. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety, comfort for fishers and quality for product. Quality of product will be improved through the increased capacity to carry ice boxes and quicker transfer to market.

Although it is believed that inshore resources are in a good condition, any vessels and gears provided to Palma fishermen should be aimed at accessing underutilized resources further offshore and away from sensitive habitat areas.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessel and gears are being provided by other projects to avoid creating over capacity in comparison to available resources. Specifications of vessels and gears must adhere to those provided with the fishing regulation 11.

In the immediate and short term it is recommended to provide a limited number of vessels and fishing gears (numbers that can be safely provided to be calculated considering number to be provided under other projects) as soon as possible to ensure some captures are possible and to avoid risk of overcapacity when other projects provide vessels and gears.

**Value Chain**

Providing larger vessels will make it easier to carry ice boxes on board and the adoption of more powerful motors will shorten the travel time between fishing grounds and landing facilities which will improve quality at the critical first stage of the value chain from the point of capture to the landing site.

Landing facilities, market, processing and cold storage facilities are either absent or need rebuilding. TOTAL has a project for the rebuilding the fishing port of Palma and two other sites (Maganja and N’semo ) with processing facilities. Therefore activities aimed at additional rehabilitation of port facilities are not recommended at this time.

In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to Associations as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

**Cross cutting**

Coordination between government agencies dealing with the fisheries sector and security forces is needed. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups are known to move between islands. The security forces have therefore established a curfew restricting fishing activities to daylight and some areas closed to fishing activities have been established. All parties need to be clearer when and where restrictions are being enforced. With coordination between the different fishers and security forces misunderstandings will be prevented.

A fishing vessel tracking system should be established in order to allow military authorities to identify which are registered fishing vessels operating at sea, and will facilitate risk assessment when evaluating if a vessel may be operated by, or carrying, non-state armed group persons. Such a system may also provide the required assurances military forces need to allow fishing activities to resume at night. Fishery authorities would also be able to use the same system to detect when fishing vessels enter closed or restricted areas.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).

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11 Regulamento da Pesca Maritima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020
PEMBA Observations and recommendations

Introduction
Pemba is the capital of Cabo Delgado province. According to the 2017 census, the city has an area of 102 km² and a population of 200,529 inhabitants. The city is located just off Pemba Bay, the 3rd largest bay in the world and the first in Africa in terms of depth and also one of the best protected on the Mozambican coast. It is located 2,450 km (by road) northeast of the national capital, Maputo.

Pemba did not suffer attacks during the conflict, but a large number of IDPs sought refuge here with host family households.

A rapid assessment was conducted to evaluate the impact of the conflict on the fisheries sector in Pemba on 11th May 2022. Meetings were achieved with local stakeholders and representatives from the catching, processing, wholesalers, retailers and support service providers such as carpenters and mechanics. Meetings were held at two markets, Ruwela and Paquitequete. Additionally meetings were achieved with the following government and non-government representatives.

Assessment
Main observations:

- 12 fishing centers in Pemba.
- 531 vessels – 435 are canoes, 87 wooden and 9 fibreglass.
- 76 vessels lost in cyclone Kenneth, 12 of these vessels lost in cyclone Kenneth belong to association “Wiwanana”.
- 157 fishermen registered, 2156 fishermen in total (% women not known).
- 37 fishing Community Councils.
- 6 fishing associations.
- 2 main markets, Ruwela and Paquitequete.
- Lots fish in islands but cannot reach them.
- Need 8m motorized boats to go further out.
- Traders suffering from lack of fish to buy and no funds to buy them, need credit, Coleman’s and solar powered ice machines for associations.

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>GOVERNMENT AND NON-GOV. ENTITY</th>
<th>CONTACT PERSON</th>
<th>POSITION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pemba</td>
<td>DPAP</td>
<td>Daudo Ussuhale</td>
<td>Provincial Director</td>
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<tr>
<td></td>
<td>Ruwela CCP</td>
<td>Luis Momade</td>
<td>Counsellor</td>
</tr>
<tr>
<td></td>
<td>Associacao de Pescadores Wiwanana</td>
<td>Jaime Mario Semedo</td>
<td>Secretary</td>
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<tr>
<td></td>
<td>IDEPA</td>
<td>Arone Salenca</td>
<td>Provincial Delegate</td>
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<tr>
<td></td>
<td>ADNAP</td>
<td>Amade Garreth</td>
<td>Officer</td>
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<td>Vicente Dino Chicote</td>
<td>Provincial Commander</td>
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<tr>
<td></td>
<td>SDAE</td>
<td>Patricia Ali</td>
<td>Director</td>
</tr>
<tr>
<td></td>
<td>IDEPA (online)</td>
<td>Paula Afonso</td>
<td>Directora</td>
</tr>
<tr>
<td></td>
<td>ProAzul</td>
<td>Mateus Tembe</td>
<td>Chief Operations Officer</td>
</tr>
<tr>
<td></td>
<td>TOTAL</td>
<td>Pedro Cave</td>
<td>Manager</td>
</tr>
</tbody>
</table>

58 SUPPORT POST CONFLICT FISHERIES SECTOR DAMAGE ASSESSMENT FOR PROGRAMMING IN NORTHERN MOZAMBIQUE, CABO DELGADO PROVINCE
Mechanic highlighted lack of suitable tools as an issue, his obsolete. No shed or workshop, working in sun, preference for outboard motors.

Carpenter also highlighted lack of suitable tools, his obsolete. Wanted electric tools.

Fiber glass (GRP) vessels considered favorably.

Extension workers/data collectors need capacity building.

SPAE director listed the priorities as follows:

1. Lack of motorized boats and fishing material.
2. Conservation of fish products.
3. Need markets with all facilities.
4. Processing units.
5. Special attention for women, capacity building for processing.

Meeting DNAP Provincial Director listed the priorities as for the mainland as follows;

1. Palma district needs most support
2. Macomia
3. Macufi

**Fishery Resources**

It wasn’t possible to determine whether fish stocks were more abundant or less than before the conflict. In order to improve monitoring of catches support to gov. extension workers and CCPs may be considered.

**Gears and Vessels**

One fisher reported positively about his experiences with fiber glass (GRP) vessels. It was advised GRP vessels were faster, more efficient, required less painting, no caulking, and overall less maintenance. It was found that GRP vessels are easier to work with than wooden boats but requires less people to work nets so employment suffers. One fisher report that a GRP vessel provided to him after cyclone destroyed his wooden boat was later stolen by insurgents.

Currently there are 570 vessels registered made from wood and do not have ice boxes. Motorized boats exist but there are not many.

Methods of fishing utilized include: purse seine, gillnets (bottom set and drifting), handline, traps and harpoon.

**Value Chain**

Ruwela market was built in 2018/19, is in good condition but not used owing some dispute over management. It is report that the local municipality should pay 70% costs and that 30% of costs should be met by fishers. The current situation is that fishers sell outside market and avoid fees and because they don’t like the design of the market. An ice machine and store exits but is not used. It was not possible to determine if still in working condition.

Traders suffering from lack of fish to buy and no funds to buy them. Credit systems should be considered and a need was identified for ice boxes to transport fish and solar powered ice machines for associations. A preference for solar power was expressed owing to issue with energy supply.

Post-harvest losses didn’t appear to be an issue and any waste was buried.
**Recommendations**

The following recommendations were based on available information gathered during the course of this rapid assessment. These recommendations form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- As soon as possible provided ice boxes to all stakeholders along the value chain and solar powered ice making facilities to Associations to ensure quality and safety of fish caught and fish products traded.

- As soon as possible provide a limited number of vessels and fishing gears to ensure captures are possible whilst avoiding risk of possible overcapacity considering vessels and gears to be provided by other projects.

- Confirmation should be sought regarding the number, size and type of vessels and fishing gears that are to be provided by other projects to creating over capacity and to identify further needs.

- Support be provided to entity’s involved in monitoring fishing activities (government extension workers and CCPs).

- Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels and establish regular coordination meetings between security forces and fisher representatives.

- Training for operating larger fishing vessels and new fishing methods introduced to access resources offshore.

**Fishery Resources**

In order to improve monitoring of activities and catches support should be provided to entity’s involved in monitoring fishing activities e.g. government extension workers and CCPs. A representative of Ruwela CCP suggested exchange programmes between CCPs to share good practices.

**Gears and Vessels**

In the interested of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors for vessels 8 m in length and over. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety and comfort for fishers.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessel and gears are being provided by other projects to avoid creating over capacity in comparison to available resources. Specifications of vessels and gears must adhere to those provided with the fishing regulation 12.

In the immediate and short term it is recommended to provide a limited number of vessels and fishing gears (numbers that can be safely provided to be calculated considering number to be provided under other projects) as soon as possible to ensure some captures are possible and to avoid risk of overcapacity when other projects provide vessels and gears.

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12 Regulamento da Pesca Marítima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020
Value Chain
Providing larger vessels will make it easier to carry ice boxes on board and the adoption of more powerful motors will shorten the travel time between fishing grounds and landing facilities which will improve quality at the critical first stage of the value chain from the point of capture to the landing site.

In the immediate and short term it is recommended to provide ice boxes to all stakeholders along the value chain and solar powered ice making facilities to Associations as soon as possible to all to ensure quality and safety of fish caught and fish products traded.

Cross cutting
Coordination between government agencies dealing with the fisheries sector and security forces is needed. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups are known to move between islands. The security forces have therefore established a curfew restricting fishing activities to daylight and some areas closed to fishing activities have been established. Coordination between the different fishers and security forces is important to ensure no misunderstandings.

A fishing vessel tracking system should be established in order to allow authorities to identify which are registered fishing vessels operating at sea, and will facilitate risk assessment when evaluating if a vessel may be operated by, or carrying, non-state armed group persons. Such a system may also provide the required assurances for security forces to allow fishing activities to resume at night. Fishery authorities would also be able to use the same system to detect when fishing vessels enter closed or restricted areas.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).
Observations and recommendations

Introduction
Quissanga is one of the districts in Cabo Delgado province. The district is around 100 kilometers north from the city of Pemba and is surrounded by the Indian Ocean District of Macomia in the north, District of Metuge in the south, Districts of Ancuabe and Meluco in the west and the District of Ibo in the east.

Population of the district is 50,259 (2017 Census) coming from Quissanga (6,553), Bilibiza (19,309) and Mahate (24,397). Cabo Delgado province faces an ongoing conflict perpetrated by non-state armed groups (NSAGs) since 2017. In 2020, the conflict reached Quissanga resulting in destruction and inflicted significant damages on infrastructures and displacement of people. The total number of Internally Displaced Persons (IDPs) from Quissanga is estimated at 2,622 households or 6,857 individuals\(^{13}\). The district was highly damaged by Cyclone Kenneth on April 2019, affecting 21,154 people and affected 975 houses, destroying 74 fishing boats, 18 nets and infrastructures including the market in Quissanga Praia\(^{14}\).

A rapid assessment was conducted to evaluate the impact of the conflict on the fisheries sector in Quissanga District on 10th May 2022. The team stationed in Ibo Island arrived at Quissanga by boat in the morning, returning to Ibo Island in the afternoon of the same day. The time and duration of the transportation by boats is limited by the tides. Meetings were conducted with local stakeholders and representatives from the fishers, processors, wholesalers and retailers. Meetings were held at Quissanga Praia and Tandanhangue. Additionally, meetings were conducted with the following government and non-government representatives.

\(^{13}\) As of Feb 2022 [https://displacement.iom.int/mozambique](https://displacement.iom.int/mozambique)

\(^{14}\) Mozambique Cyclone Kenneth: Assessment Report - Quissanga District, Cabo Delgado 12 May 2019

Assessment

QUISSANGA PRAIA

- Before the conflict, the market had 3 freezers used for ice and 2 freezers used to store and freeze fish. There was also an ice machine that could produce ice tubes of 5 kilograms each, in 8 hours.
- The roof of the Quissanga Praia market was destroyed during Cyclone Kenneth. The fishers, processors and traders joined forces to repair it.
- The power transformer post in Quissanga Praia was destroyed during the insurgency;
- Due to the conflict, no fishing activities were allowed for two years. The fishing activities slowly returned after November 2021
- Cyclone Kenneth and the conflict have resulted in a significant destruction of vessels, from 39 boats and 116 canoes to 4 boats and 19 canoes.
- It also resulted in destruction and loss of fishing gears such as gillnets and traps.
- In terms of preferred materials for boats, the fishers preferred wooden boats as it will be easier to repair. However, the source of wood is currently inaccessible due to the conflict.
- The total fishing duration (including traveling to the fishing grounds) is 7 hours, which is done from 0500 to 1700. There is no cold preservation/use of ice on boats.
- Fish are usually sold at landing sites where fish are chilled using ice produced from households and from Pemba and Tandanhangue.
- Fish are also sundried for 3 to 4 days depending on the size of the fish.

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>NO. OF FISHERS</th>
<th>NO. VESSELS</th>
<th>N. FISHING GEARS</th>
<th>MOTORS</th>
</tr>
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<tbody>
<tr>
<td>Quissanga</td>
<td>2933</td>
<td>849</td>
<td>328</td>
<td>279</td>
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Source: Census of Artisanal Fisheries 2012

<table>
<thead>
<tr>
<th>DISTRICT</th>
<th>GOVERNMENT ENTITY</th>
<th>CONTACT PERSON</th>
<th>POSITION</th>
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<tbody>
<tr>
<td>Quissanga</td>
<td>District Police command</td>
<td>Insua Assumane</td>
<td>District Chief of Operations</td>
</tr>
<tr>
<td></td>
<td>State Inteligency Services</td>
<td>Pedro Gil Njompe</td>
<td>District Commander</td>
</tr>
</tbody>
</table>
• Major markets for the fish products are Pemba, Montepuez, Chiure and the District of Nampula. Fish are transported with blocks of ice as mode for preservation. Transportation to these major markets can range from 4 hours by road (to Pemba) to 15 hours by road (to District of Nampula). The damaged roads make the transport of fish longer and can be worse on bad weathers.

• The fishers, processors and traders have agreed that major challenges include lack of materials for cold chain including freezers, ice boxes and lack of boats and fishing gears.

TANDANHANGUE
• The conflict has resulted to migration of many people to Quissanga. In Tandanhangue, more than 50 percent of the fishers are IDPs.

• Due to the conflict, no fishing activities was allowed for two years. The fishing activities slowly returned after November 2021

• Cyclone Kenneth and the conflict have resulted to a significant destruction of vessels, from around 70-100 boats and 100 canoes to 3-4 boats and 20 canoes.

• It also resulted to destruction and loss of fishing gears.

• In terms of preferred materials for boat, the fishers preferred wooden boats as it will be easier to repair. However, the source of wood is currently inaccessible due to the conflict.

• Fishing activities highly depend on the tide. The total fishing duration (including traveling to the fishing grounds) is 7 hours, which is done from 0400 to 1100 or until 1400 depending on the tide. There is no cold preservation/use of ice on boats.

• Fish are usually sold at landing sites where fish are chilled using ice produced from households and from Pemba.

• Fish are also sundried and fried. Fish are sundried for 2 to 4 days depending on the size of the fish.

• Major markets for the fish products are Pemba, Chiure, Balama, Namuno and Montepuez. Fish are transported with blocks of ice as mode for preservation. Transportation to these major markets can range from 5 hours by road (to Pemba) to 11 hours by road (to Montepuez). The damaged roads make the transport of fish longer and can be worse on bad weathers.

• There are no direct transportation to the markets leading to longer transportation time and higher costs.

• In some instances, when there are no direct buyers, fish products particularly for sundried and fried fish are sold for cheaper price.

• The fishers, processors and traders have agreed that the major challenges include lack of materials for cold chain including freezers, ice boxes and lack of boats and fishing gears. In addition, women who are frying fish are requesting for oil.
Fishery Resources
The conflict resulted in people migrating away and fishing stopped due to the conflict. The fishing activities were not allowed until November 2021. The fishery resources have therefore been untouched for two years. After two years, some people returned and noted that average sizes increased and the catch per fisher was higher.

Gears and Vessels
Both communities - Quissanga Praia and Tandanhangue, have suffered a significant number of damaged and stolen vessels and gears brought about by Cyclone Kenneth and the conflict. Fishing gears mainly gillnets and traps were mostly destroyed during the cyclone. Regarding the preference for wooden or fiber glass boats, fishers prefer wooden boats for easier repair. However, the lack of wood supply, which can be obtained from places closed due to the conflict, resulted to limited boat production.

Value Chain
The cyclone and conflict have resulted in the destruction of equipment and market facilities. The destruction of cold storages and ice machines have led to the disruption of the cold chain, which has a negative impact in maintaining the quality of the fish. The absence of ice or cold storage during fishing and the long transportation time from the fishing villages to the major markets have also negative impacts on the quality of the fish.

Recommendations
The following recommendations are based on available information gathered during the course of this rapid assessment. These recommendations form a list of indicative interventions only and should not be considered as exhaustive. Further analysis will be required to confirm full needs and any proposed activities will need to be mapped against ongoing or planned activities in other projects to ensure duplication is avoided. Activities supporting fish capture and distribution to markets within Cabo Delgado should be prioritized and implemented as soon as possible in the interest of ensuring food security to those communities most at need.

- As soon as possible, the destroyed equipment of the market facilities (freezers, ice making machines) should be replaced and ice boxes be provided to stakeholders along the value chain, to ensure quality and safety of fish caught and fish products traded. The connection to the national electricity grid should be ensured/validated.
• As soon as possible provide a limited number of vessels and fishing gears to ensure captures are possible whilst avoiding risk of possible overcapacity. Consider vessels and gears to be provided by other projects.

• Confirmation should be sought regarding the number, size and type of vessels and fishing gears that are to be provided by other projects. With this information and up to date data regarding number of fishers, and considering level of available resources that may be sustainably harvested, it can be determined if further vessels and gears are required and a further project proposals may be developed accordingly.

• Develop and implement a vessel tracking system to facilitate monitoring and safe operations of fishing vessels and establish regular coordination meetings between security forces and fisher representatives.

• Training for operating larger fishing vessels and new fishing methods introduced to access resources offshore.

**Fishery Resources**

Due to the recent conflict the monitoring system of the fishery sector has been paused. Fishing extension workers that left owing to the conflict are now returning and data with respect to vessel activity and landings have not been collected. This system needs to be re-installed as a matter of urgency. This will enable a more informed analysis of the status of the fishery stocks, required for the sustainable management of resources.

**Gears and Vessels**

In the interested of ‘building back better’ and to facilitate access to underutilized fishery resources offshore, it is recommended to replace smaller vessels with larger vessels and equip them with appropriately powerful motors, e.g. 40 hp motors in place of 15 hp motors for vessels 8 m in length and over. This is an opportunity to improve the range of the fishing fleet in order to access underutilized stocks, whilst at the same time improve safety, comfort for fishers and quality for product. Quality of product will be improved through the increased capacity to carry ice boxes and quicker transfer to market.

Before a proposal is developed for the replacement vessel and gears, it is necessary to confirm how many vessel and gears are being provided by other projects to avoid creating over capacity in comparison to available resources. Specifications of vessels and gears must adhere to those provided with the fishing regulation 15.

In the immediate and short term it is recommended to provide a limited number of vessels and fishing gears (numbers that can be safely provided to be calculated considering number to be provided under other projects) as soon as possible to ensure some captures are possible and to avoid risk of overcapacity when other projects provide vessels and gears.

15 Regulamento da Pesca Marítima (REPMAR), BOLETIM DA REPÚBLICA, PUBLICAÇÃO OFICIAL DA REPÚBLICA DE MOÇAMBIQUE, Quinta-feira, 8 de Outubro de 2020
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Cross cutting
Coordination between government agencies dealing with the fisheries sector and security forces is needed. The area between the archipelago and the coast is considered a high risk area, as non-state armed groups are known to move between islands. The security forces have therefore established a curfew restricting fishing activities to daylight and some areas closed to fishing activities have been established. Coordination between the different fishers and security forces is important to ensure no misunderstandings.

A fishing vessel tracking system should be established in order to allow authorities to identify which are registered fishing vessels operating at sea, and will facilitate risk assessment when evaluating if a vessel may be operated by, or carrying, non-state armed group persons. Such a system may also provide the required assurances for security forces to allow fishing activities to resume at night. Fishery authorities would also be able to use the same system to detect when fishing vessels enter closed or restricted areas.

To facilitate monitoring, control and surveillance (MCS) fisher registrations should be brought up to date, and both vessel and gear registration systems should be implemented in accordance with the Mozambique fishing regulation and FAO guidelines. In addition to facilitating MCS, implementing registration systems for vessels and gears will facilitate emergency replacements for gears should this be required in the future (e.g. damages caused by cyclones).
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>aFADs</td>
<td>Anchored Fish Aggregation Devices</td>
</tr>
<tr>
<td>ALDFG</td>
<td>Abandoned, Lost or Otherwise Discarded Fishing Gear</td>
</tr>
<tr>
<td>CAS</td>
<td>Catch and effort Assessment Survey</td>
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<tr>
<td>CPUE</td>
<td>Catch per Unit of Effort</td>
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<td>DPAP</td>
<td>Provincial Directorate of Agriculture and Fisheries</td>
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<td>DTM</td>
<td>Displacement Tracking Matrix</td>
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<td>EEZ</td>
<td>Exclusive Economic Zone</td>
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<td>ETPs</td>
<td>Endangered, Threatened and Protected species</td>
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<td>ETT</td>
<td>Emergency Tracking Tool</td>
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<td>FAO</td>
<td>Food and Agriculture Organization of the United Nations</td>
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<td>FAOR</td>
<td>Food and Agriculture Organization Representative</td>
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<td>Food Loss and Waste</td>
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<td>HQ</td>
<td>Head Quarters</td>
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<td>Internally Displaced Persons</td>
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<td>IFRC</td>
<td>International Federation of Red Cross and Red Crescent Societies</td>
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<td>IIP</td>
<td>Instituto Nacional de Investigação Pesqueira (National Fishery Research Institute)</td>
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<td>InOM</td>
<td>Instituto Oceanográfico de Moçambique (Mozambique Oceanographic Institute)</td>
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<td>IOM</td>
<td>International Organization for Migration</td>
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<td>IPC</td>
<td>Integrated Food Security Phase Classification</td>
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<td>ISIL</td>
<td>Islamic State of Iraq and the Levant</td>
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<td>Illegal, Unreported and Unregulated</td>
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<td>LNG</td>
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<td>Poupança e Credito Rotativo (Revolving Funds)</td>
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<td>SAMIM</td>
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<td>SSSF</td>
<td>Small-Scale Fisheries</td>
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<td>SWIOFC</td>
<td>Southwest Indian Ocean Fisheries Commission</td>
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SUPPORT POST CONFLICT FISHERIES SECTOR DAMAGE ASSESSMENT FOR PROGRAMMING IN NORTHERN MOZAMBIQUE, CABO DELGADO PROVINCE.