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Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 21-Jun-2022 | Report No: PIDC34319

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Comoros	P179109		Comoros Interisland Connectivity Project SOP2 (P179109)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
EASTERN AND SOUTHERN AFRICA	Oct 31, 2022	Dec 09, 2022	Transport
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	The Union of Comoros	Ministry of Maritime and Air Transport	

Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve maritime transport connectivity and safety between the islands.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	50.00
Total Financing	50.00
of which IBRD/IDA	20.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	20.00
IDA Credit	10.00
IDA Grant	10.00

Non-World Bank Group Financing

Other Sources	30.00

African Development Bank	30.00

Environmental and Social Risk Classification	Concept Review Decision
High	Track II-The review did authorize the preparation to continue

Other Decision (as needed)

B. Introduction and Context

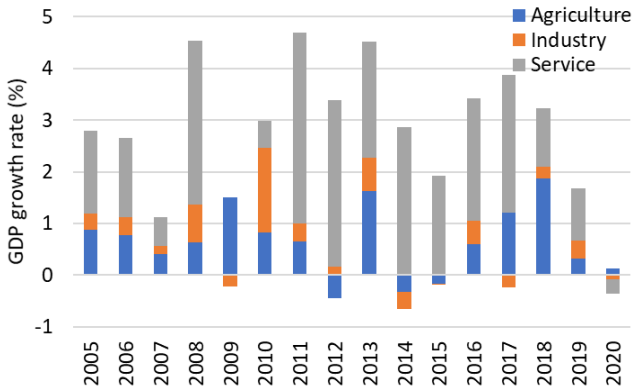
Country Context

1. **Over the last decade, before the Coronavirus Disease 2019 (COVID-19) crisis began, the Union of Comoros (Comoros) has been growing steadily at an average growth rate of about 3 percent, reaching US$1,421 per capita in 2020.**[1] Comoros is an archipelago composed of three main islands: Grand Comore, Anjouan and Moheli, with a total population of about 870,000. While Grand Comore accounts for half of the total population and is highly urbanized around the capital, Moroni, other two islands, i.e., Anjouan and Moheli, are more rural-based economies with high agricultural, fishery and touristic potential (figure 1). The Comorian economy has historically depended on agriculture, which employs about 60 percent of the total population and generates about 30 percent of GDP. Agricultural growth has been fluctuating but remains important not only for growth but also to ensure food security and as a source of foreign exchange (figure 2). Moroni largely depends on Anjouan and Moheli for food supply (e.g., bananas, cassava, rice, maize, tomatoes). Export crops, such as vanilla, ylang ylang, and cloves, are also important, accounting for about 80 percent of the country's total goods exports.[2]

[1] According to World Development Indicators.
[2] Based on FAOSTAT and World Development Indicators data for 2019.

Figure 1. Agricultural Production and Transport Network

Figure 2. Growth Contribution by Sector



2. **Despite its high agricultural potential in the country, Comoros imports over US$100 million of food products from abroad every year.** International food prices are rapidly increasing. Historically, the country imports a significant amount of food, construction materials and consumer goods from countries such as the United Arab Emirates, France, Pakistan, China and Turkey (figure 3). Food imports accounted for nearly 10 percent of GDP in 2020, up from 5 percent in the early 2010s and 8 percent in 2018 (figure 4). During the last five years, major food imports were doubled. For instance, imported rice increased from 30,000 tons in 2016 to 60,000 ton in 2020 (figure 5). Poultry imports also increased from 12,000 tons to 25,000 tons for the same period even though Comoros can produce these products. The network of domestic markets remains inefficient and fragmented because of unreliable and costly maritime and road transport between and within the islands. The price differentials are Some of the major commodities, such as cassava, coconuts and tomatoes, are substantially more expensive in Moroni than in Fomboni and Mutsamudu (figure 6).

3. **The recent external shocks, such as the COVID-19 crisis and the Russia-Ukraine conflict, are reminding the importance of promoting efficient international trade and transport as well as inclusive growth of the domestic economy.** Although Comoros does not have much direct trade with Russia, it imports oil products and many food commodities. Comoros imported about 1,300 tons of wheat flour from Ukraine in 2020. This is about 10 percent of the country's total flower imports.[3] Given the trends of high international commodity prices and global trade stagnation, Comoros may continue faced with a risk of deteriorating the fiscal and current account balances. In May 2022, the government announced a 25 percent increase of gasoline prices, from KMF600 or US$1.30 to KMF750 or US$1.62 per liter. The potential negative impacts are difficult to be offset by the country's narrow export base. Inclusive economic growth based on robust global connectivity is now called for more than ever.

[3] According to FAOSTAT.

Figure 3. Origins of Comorian Imports, 2020

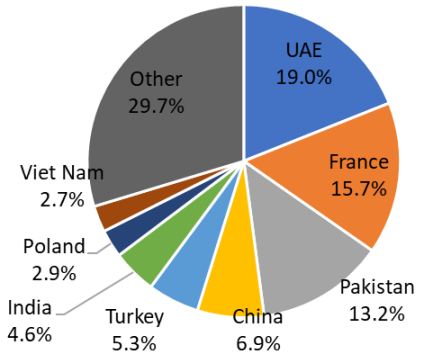


Figure 4. Food Imports by Comoros

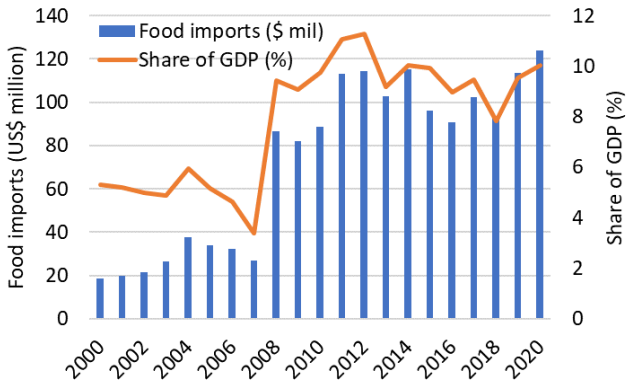


Figure 5. Major Import Food Commodities

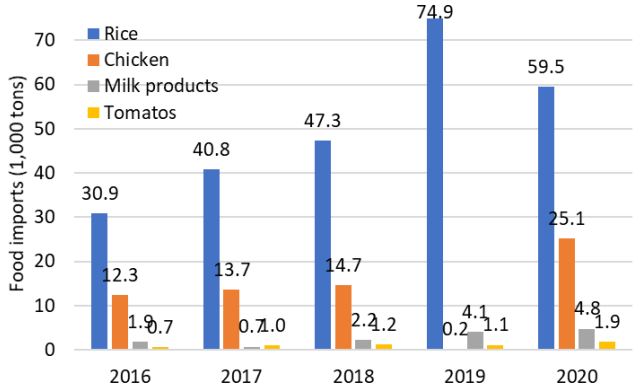
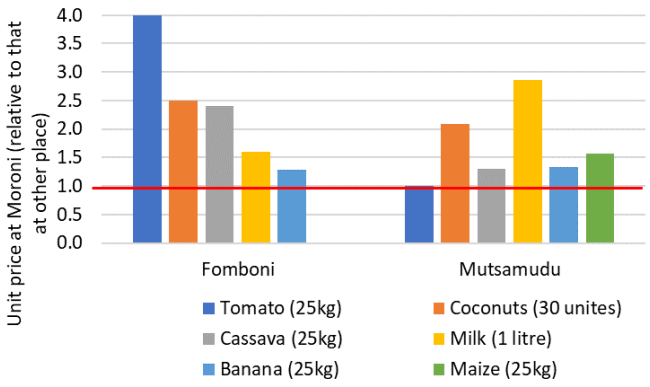


Figure 6. Crop Price Differentials Between the islands



4. **Climate vulnerability adds another challenge to the country.** Comoros is highly vulnerable to climate change impacts and natural hazards such as tropical cyclones, coastal flooding and erosion. In 2019, Cyclone Kenneth affected more than 345,000 people, with 185,900 in need of humanitarian aid. Damage, losses and needs for recovery are estimated at over US$450 million. Transport infrastructure was also damaged, including Port Boingoma, the only primary port on Moheli that can accommodate cargo ships, and about 90 km of primary and rural roads (10 percent of the total road network). Because of its climate vulnerability, the country, particularly Moheli island, frequently suffers from transport and supply disruptions. Because of weather conditions, for instance, Port Boingoma is inaccessible an average of two working days per week. Roads are poorly maintained and thus easily washed away. According to a road survey in 2021, about half of the roads were in poor or very poor condition.

5. **Poverty is persistently high in Comoros, with remote rural areas particularly left behind.** Comoros has been growing steadily. However, about 40 percent of Comorians still lived below the national poverty line in 2014.[4] Significant regional inequality exists. Moheli is the poorest region with a poverty rate of 53 percent. The poverty rate is 30 percent on Moroni and 38 percent on Anjouan (figure 7).[5] Regional inequality seems to have increased in recent years. The Gini

[4] World Bank. 2021. Macro Poverty Outlook.

[5] Haazen et al. 2016. "Sub-National Analysis of Systematic Differences in Health Status and the Access to and Funding of Health Services: An Example from Comoros." Health, Nutrition & Population Global Practice Discussion Paper, World Bank.

index, which measures regional inequality according to household consumption, was estimated to be 0.45 in 2014, which is higher than that of its structural peers (0.329) and has increased for the last decade.[6] The national markets remain disconnected. The rural poor tends to be left behind where transport connectivity is limited (figure 8).

Figure 7. Regional Poverty Headcount

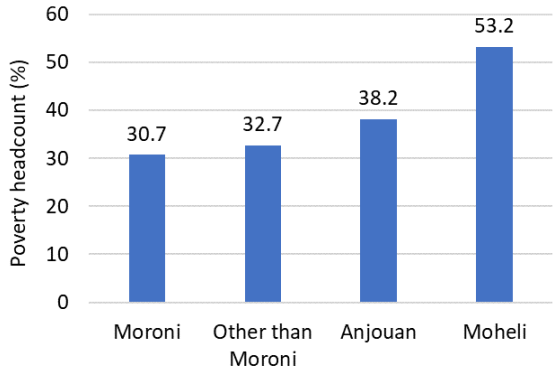
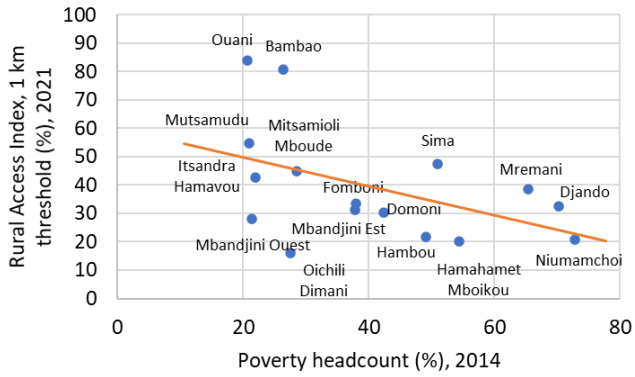


Figure 8. Correlation Between Poverty and Rural Access



6. **Because of the limited, unreliable connectivity, access to market opportunities and jobs is limited in Comoros, particularly for youth and women.** The total unemployment rate was 9.4 percent in 2021, doubled from 4-5 percent in the early 2010s (figure 9). Job opportunities are particularly limited for the youth. Youth unemployment is high at more than 20 percent. Comoros needs to generate more well-paid jobs to absorb the young and rapidly growing labor force of the country. While agriculture is currently predominant (figure 10), the latest development vision by the government, Plan Comores Emergent 2020-30, envisages potential growth in not only agrobusiness but also tourism and fishery as the blue economy.

7. **There is significant gender inequality in Comoros.** Female unemployment was also high at 12.1 percent in 2021, higher than male (7.9 percent). The gender inequality has been widened gradually over the last two decades. The Country Partnership Framework (CPF) highlights the complexity of gender issues in the country. Society is matrilineal, and women have access to property according to custom and law. However, the traditional system tends to exclude women from formal decision-making processes. Men are heads of villages. Women accounts for only 16 percent of parliamentary seats in 2020. Women are still under-represented in civil service positions. Women tend to exert their voice within the households rather than in society.[7] As indicated above, access to jobs is a constraint for women. Female labor force participation was 32 percent of the working-age population in 2021, which is among the lowest in the region where the average is 60 percent.

[6] World Bank. 2020. Country Partnership Framework for the Union of Comoros for the Period FY20-24.
[7] World Bank. 2019. "Comoros Strategic Country Diagnostic: Towards a More United and Prosperous." World Bank Group. Presented to the Board on June 6 and approved on June 17, 2019.

Figure 9. Unemployment Rates

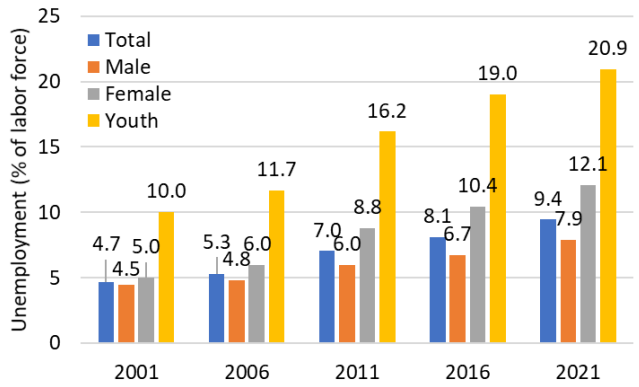
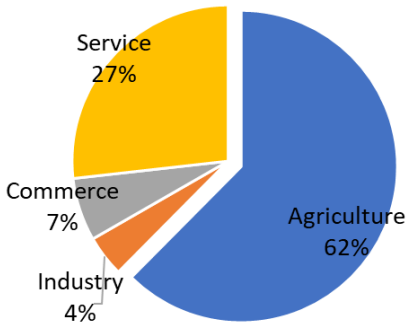


Figure 10. Employment by Sector, 2014



Sectoral and Institutional Context

8. **For small island states such as Comoros, transport connectivity is of vital importance to be connected to the rest of the world.** Comoros relies heavily on imports, in an increasing trend by 5.2 percent per year, reaching 487,000 tons in 2020. Export volumes are meanwhile limited at less than 10 tons (figure 11). Although Comoros occupies a strategic geographic position between East Africa and Asia, its global connectivity has long been stagnant. The Liner Shipping Connectivity Index, which is a global indicator showing how well countries are connected to global shipping networks,[8] has not been improved for nearly two decades and started declining after the COVID-19 crisis (figure 12). Although there are disadvantages of diseconomies of scale to small countries, the maritime transport connectivity of Comoros is certainly lagging behind in the region.

Figure 11. Foreign Trade Volumes

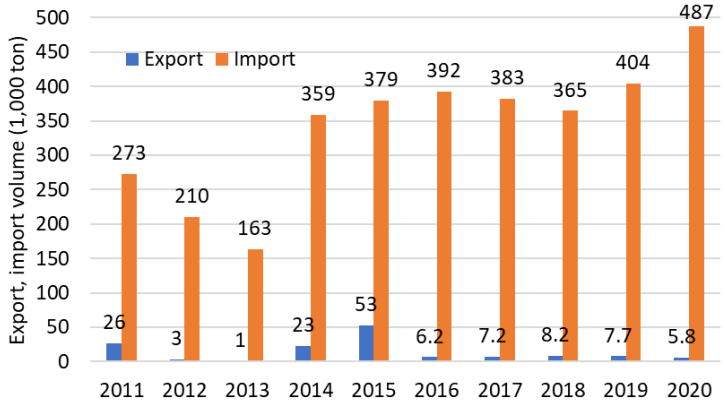
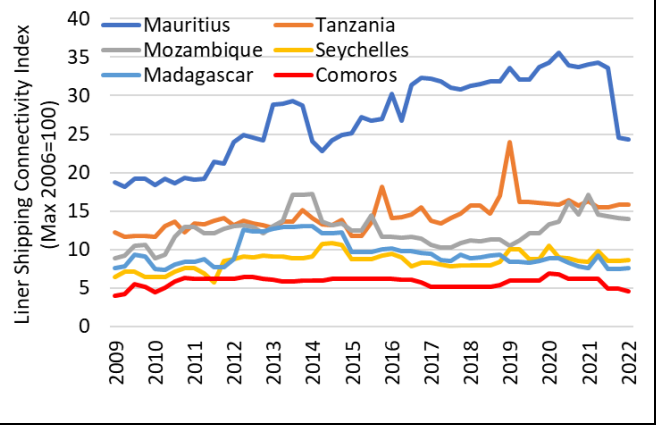


Figure 12. Liner Shipping Connectivity Index



[8] The Liner Shipping Connectivity Index indicates a country's integration level into global liner shipping networks, based on liner shipping traffic between countries. It was set at 100 for the maximum value of country connectivity in 2006, which was in China.

9. There are three primary ports in Comoros: Port Moroni on Grand Comore, Port Boingoma on Moheli and Port Mutsamudu on Anjouan. All of them have capacity constraints.

10. **The port of Boingoma is most constrained from the capacity and resilience points of view, leaving Moheli Island most isolated in Comoros.** Port Boingoma has a 70-meter wharf with a 2.4-meter depth that is accessible to only very small vessels (up to 4,000 tons), handling only about 20,000 to 40,000 tons of cargo per year (figure 13). The port cannot always accommodate passenger ferries or large freight vessels. All exports from and imports to Moheli must be transited at Moroni or Mutsamudu with cargos offloaded and reloaded onto smaller vessels. These transit operations create additional unnecessary burdens on not only Boingoma but also other primary ports, reducing the overall efficiency and competitiveness of the Comorian port sector. Inefficient port operations also result in high port costs in Comoros. At Port Boingoma, freight charges and port fees are particularly high. While freight handling charges are KMF 4,000 or US$10 per ton, port fees (including docking and wharfage) are KMF84,000 per vessel, which adds another US$1.50 to US$2.00 per ton. The total cost is among the highest in the region.[9]

11. **The current linear design of Port Boingoma without sufficient protection is highly vulnerable to climate events.** In 2019, Cyclone Kenneth damaged substructures of the port, which is not sufficiently protected against ocean waves particularly from the northwest. Because of weather conditions, maritime freight operators frequently skip or refuse to call at Port Boingoma. The port is operational for only 2 working days per week and 2 weeks per month. Thus, the island often faces a shortage of petroleum products and daily consumption goods, including packaged food and beverages.

12. **The Comoros Interisland Connectivity Project SOP1 (P173114) was approved in May 2022, to strengthen the climate resilience of Port Boingoma, which was considered as the most urgent challenge.** The SOP1 will support designing and constructing a breakwater along the port to protect against waves from the north. It is expected to contribute to providing sufficient protection to the port, assuring more reliable and extended port operations regardless of weather conditions. Even with SOP1, however, the capacity constraint that the port faces will remain unsolved. To exploit full economic benefits from the investment, the port needs to be expanded with the existing quay extended and another quay added.

13. **Other two primary ports also have capacity constraints.** Port Moroni is the primary port, handling about 60 percent of the country's total cargo, but it has an available depth of only 4.5 meters and a wharf length of 80 meters, which is not sufficient for most commercial vessels and containers. To accommodate vessels with a normal capacity of approximately 630 twenty-foot-equivalent units (TEUs), a 120-meter wharf with a depth of 6.5 meters is required. Thus, many vessels must anchor in the harbor and unload to a barge, which generates significant extra handling costs and vessel congestion. Although the theoretical capacity of Port Moroni is 20,000 TEUs, or 200,000 tons, the current throughput already exceeds 300,000 tons. Some superstructures, including navigation aids and communication equipment, need repair. According to the 2014 national port master plan, Port Moroni needs US$158 million in investment to be expanded.

14. **Mutsamudu Port is a deep seaport, with a capacity of 70,000 TEUs, the largest in Comoros.** The 170-meter wharf and approximately 9-meter depth allow large container ships with a normal capacity of approximately 1,000 TEUs to call. Although there is a potential need to extend quays and accommodate even larger ships (up to 1,700 TEUs), the recent

[9] Port costs are US$6.00 to US$6.50 per ton in the region, e.g., Toamasina and Mahajanga, Madagascar, and Maputo, Mozambique. See World Bank. (2019). Port Development and Competition in East and Southern Africa: Prospects and Challenges. Gwilliam. 2011. Africa's Transport Infrastructure: Mainstreaming Maintenance and Management. Word Bank.

traffic was 23,000 TEUs in 2019, which was less than the existing capacity. The national port master plan estimated the potential investment needs for Port Mutsamudu at US$191 million.[10]

15. **In the port sector, the Comorian government has been collaborating actively with the private sector for port operations, however, its regulatory capacity remains to be strengthened further.** Ports Moroni and Mutsamudu are already under 10-year concessions (with potential renewal) by Moroni Terminal (76.5 percent owned by Bolloré Africa Logistics) and Anjouan Stevedoring Company, respectively. Port Boingoma used to be managed by the regional government and is now under the responsibility of a National Port Authority (Société Comorienne des Ports, SCP). The SCP was established in 2013 and operationalized in late 2020, through consolidating the regional port authorities, i.e., the Comoros Port Authority (Autorité Portuaire des Comores, APC) which supervised Port Moroni, and the Public Establishment of the Port of Mutsamudu (Etablissement Public du Port Autonome de Mutsamudu, EPPAM) which supervised Port Mutsamudu. The SCP is now a single national port authority but its practical capacity to regulate and supervise the concessionaires remains weak. The SOP1 will support the government capacity building to update and harmonize the legal framework for PPP and manage commercial operations in the port sector.

16. **Because of limited port capacity, and inefficient and unpredictable port operations, interisland connectivity in Comoros has been decreasing.** Despite the country's steady economic growth, the overall interisland freight traffic declined from 36,000 tons in 2016 to 20,000 tons in 2019 (figure 14). Freight shipping from Mutsamudu to Boingoma, which accounts for two-thirds of total cabotage freight, halved between 2016 and 2019. Although no official statistics are available, some of the traffic may have been replaced by cabotage from Port Moroni. Still, the downtrend seems to be unchanged. The connectivity is particularly limited to freight operations from and to Moheli. On average, two freight vessels serve Moheli per week, one each from Moroni and Mutsamudu, whereas seven operators provide nearly daily services between Moroni and Mutsamudu.

Figure 13. Port Operations at Boingoma

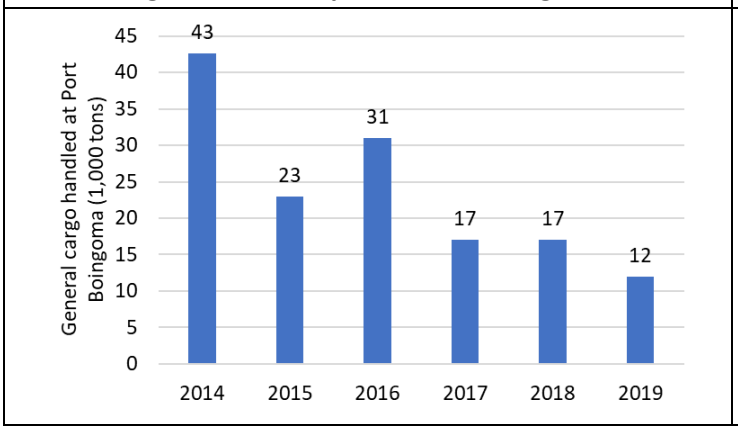
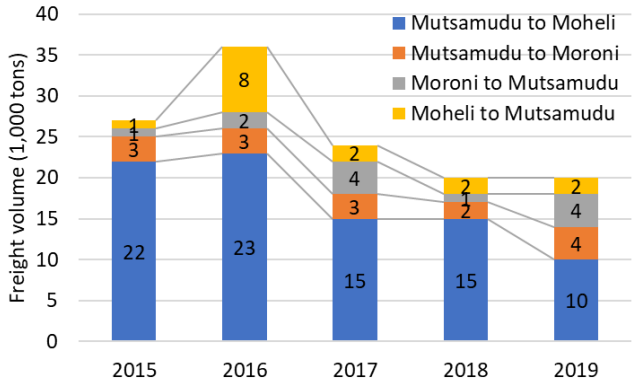


Figure 14. Interisland Freight Volumes



17. **Passenger connectivity between the islands is also severely constrained.** The interisland ferry market has been shrinking in recent years. The number of ferry passengers dropped from 83,000 in 2015 to 28,000 in 2019 (figure 15). The vast majority of ferry passengers travel between Moroni and Mutsamudu, as Port Boingoma is currently difficult to access by ferry because of its too shallow draft. There is only one company operating between Moroni and Mutsamudu once a

[10] EU & Ministry of Maritime Transport. (2014). Elaboration du Schéma Directeur Portuaire National Rapport.

week. There used to be five private operators running ferry services among the islands. There is a vicious circle whereby inadequate port infrastructure reduces the reliability of maritime transport services, which further decreases demand for interisland transportation, causing service operators to exit the market. A big push by the Government seems to be needed to correct this market failure. The French Development Agency (AFD) is currently considering a support for the Comorian government to purchase ferries in a phased manner. It will be highly complementary to the enhanced port capacity at Port Boingoma under this proposed project.

18. **Because of infrequency or unavailability of ferry services, the "informal" interisland transport market has been growing in Comoros.** According to a preliminary feasibility study, it is estimated that about 95,000 passengers cross the Indian Ocean by kwassa kwassa every year.[11] Kwassa kwassa is not designed for passenger services but a type of fast fishing boat, 6 to 10 meters long and about 1 to 2 meters wide, flat-bottomed and equipped with one or two engines. Although there is a serious safety risk, local people prefer to use kwassa kwassa for local daily use purposes because it is more convenient than formal ferries. By kwassa-kwassa, it takes 50 to 90 minutes to travel between Grande Comore and Moheli, compared with 3 to 4 hours by ferry. Similarly, it takes 2.5 hours to travel from Grande Comore to Anjouan by kwassa-kwassa, compared with 12 hours by ferry. Each ride costs about KMF10,000 to KMF17,500 or US$25-43, depending on destination.

19. **Many Comorians are exposed to a significant safety risk in maritime transport.** Although it may not be comprehensive, the safety records received from the National Agency of Maritime Affairs (ANAM) show that there were at least 4-7 maritime incidents annually (figure 16). In 2019, seven maritime accidents were reported, in which 57 people were involved. There are no signs of safety improvement so far. The latest tragedy was reported in May 2021, that a kwassa boat departing from Chindini for Anjouan sank due to high waves, involving 8 casualties. The Government's capability is limited to supervise daily operations and enforce relevant safety regulations. No proper safety equipment is installed in kwassa kwassa. Its shallow V hull or flat bottom is particularly vulnerable to ocean waves. To improve maritime safety for passengers, it is imperative to promote the use of safer boats with deep v hulls properly designed for passenger operations, and to install proper infrastructure at landing beaches.

Figure 15. Interisland Ferry Passenger Traffic

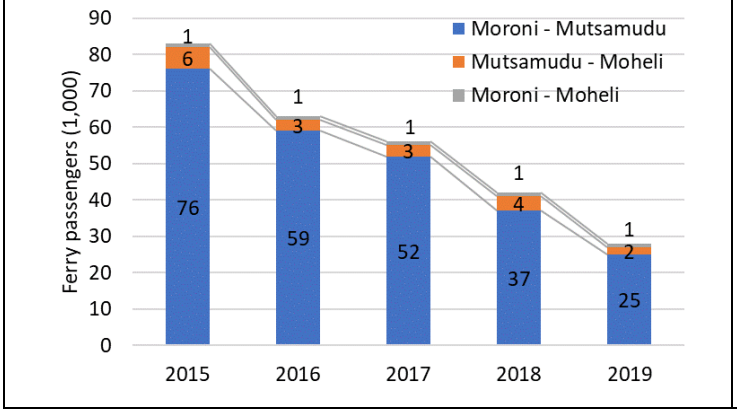
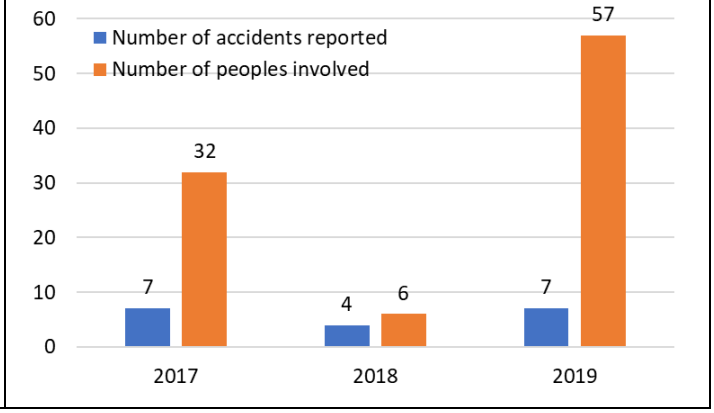


Figure 16. Maritime Accidents in Comoros



[11] CPCS. 2021. Prefeasibility Study: Comoros Inter-Island Connectivity Improvement Project: Final Report.

20. **While kwassa kwassa is convenient, maritime transport safety is of concern for many passengers, especially female users.** According to a recent maritime transport user survey in 2020, kwassa users travel between the islands on average 13 times per year, while ferry users travel much less frequently, on average every two months (figure 17). Passengers prefer to use kwassa kwassa for its simplicity and low prices (figure 18). Ferry users choose not to use kwassa kwassa because of safety concern. Female ferry passengers are more concerned about maritime safety than male passengers (figure 19). The differences in revealed modal preferences may be attributed to the fact that interisland trip demand is different by gender. Female users often move between the islands for health purposes (figure 20). They may be particularly cautious about transport safety. In addition, the maritime transport sector is a male-dominant industry in Comoros. The women's voice may not be reflected effectively to safety regulations and practices.

21. **The institutional framework governing maritime transportation, including safety, exists, but the Government capacity remains to be strengthened.** The National Maritime Affairs Agency (ANAM) under the Ministry of Maritime and Air Transport is the main maritime authority to implement and promote the national maritime and port policies. At the international level, the Comoros subscribes to several major International Maritime Organisation (IMO) treaties and conventions on maritime transport. The standards described in these conventions are transcribed in the Comorian Merchant Marine Code (CMMC). However, the implementation of the CMMC has been a challenge because several implementing texts are still missing, such as environmental and safety regulations. For safety reasons, the Government prohibits passenger operations by kwassa kwassa, however, the policy is not strongly enforced because there is no alternative transport means to meet the time-elastic needs for local communities. The Government's implementation capacity remains to be strengthened in collaboration with other relevant ministries and entities, such as the Ministry of Environment, the Directorate of Police and National Security (DPSN) and the Coast Guard.[12]

Figure 17. Frequency of Interisland Travel

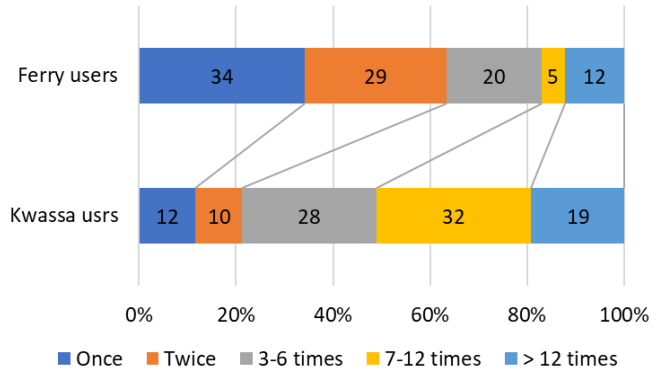
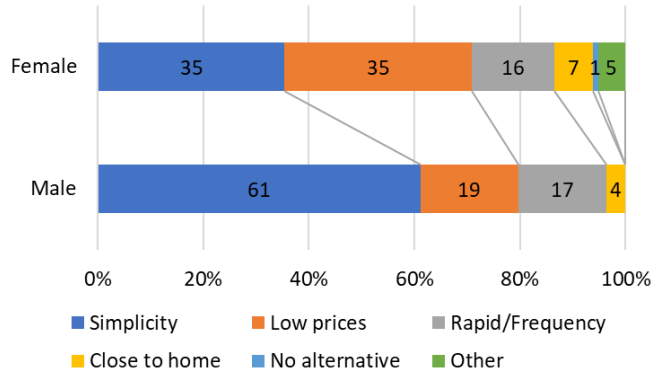


Figure 18. Reasons for Choosing Kwassa Kwassa



[12] While DPSN verifies the presence of all safety equipment at sea (life jackets, return fuel, GPS among others), the Coast Guard monitors weather conditions and conducts maritime search and rescue operations.

Figure 19. Reasons for Choosing Ferry Transport

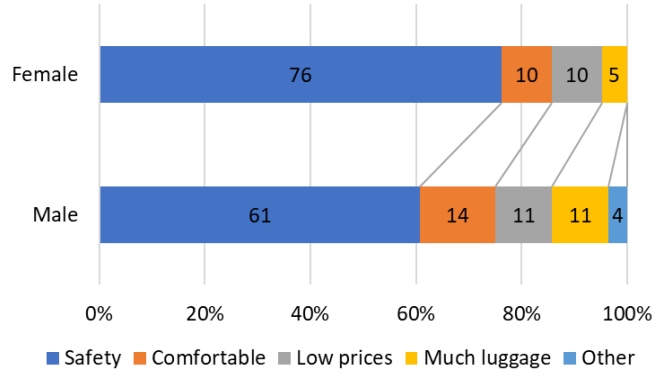
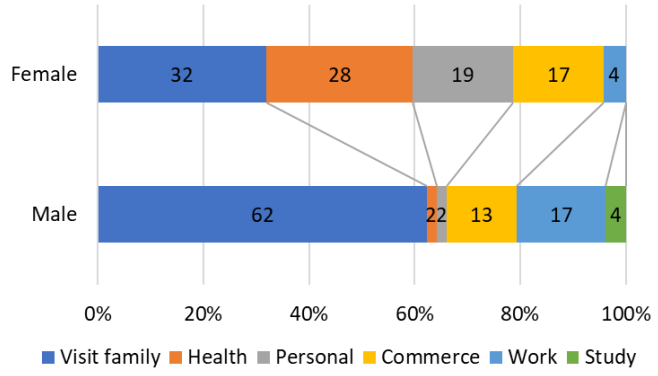


Figure 20. Interisland Trip Purposes



Relationship to CPF

22. **In the latest government's development strategy, Plan Comores Emergent (PCE) 2020-2030, sustainable, inclusive growth based on safe maritime transportation and fishery and coastal tourism development is among the top priorities.** The Comorian government envisages becoming an emerging economy by 2030 through structural transformation. The PCE emphasizes promotion of the blue economy, calling for the catalytic effects of infrastructure to advance structural transformation of the economy given the capacity constraints in the transport sector. The plan articulates the clear need to enhance the capacity of the primary and secondary ports, as well as other transport infrastructure assets, such as roads and airports.

23. **The 2019 SCD for Comoros identified three main pathways to lift the country out of its low-growth equilibrium and achieve sustained poverty reduction: overcoming the investment gap, fostering human capital, and protecting and leveraging natural resources**.[13] To attract more foreign and domestic investment, the business environment must be improved on both institutional and physical sides. The SCD casts light on the importance of investing in interisland connectivity as a priority, not only to increase the efficiency of domestic transactions, but also to help reduce the country's fragility, stimulate inclusive growth, and decrease inequality between the islands.

24. **The CPF for Comoros covering the Fiscal Years 2020-2024 (FY20-24)[14] focuses on strengthening human capital and fostering inclusive growth**. The proposed operation is aligned with Objective 4 of the CPF: Improving Connectivity, under Focus Area II: Economic Recovery and Inclusive Growth, which supports improving governance and the business environment, fostering private sector growth, and increasing connectivity to reliable, sustainable infrastructure services. By improving transport connectivity, the project is expected to contribute to improving people's livelihoods, promoting agricultural and local business development, and therefore, stimulating inclusive growth in the country.

[13] World Bank. 2019. Comoros Strategic Country Diagnostic: Towards a More United and Prosperous Union of Comoros.
[14] World Bank. 2020. FY20-FY24 Country Partnership Framework for the Union of Comoros. Report No. 145699-KM. Approved by the World Bank Board of Executive Directors on June 17, 2020.

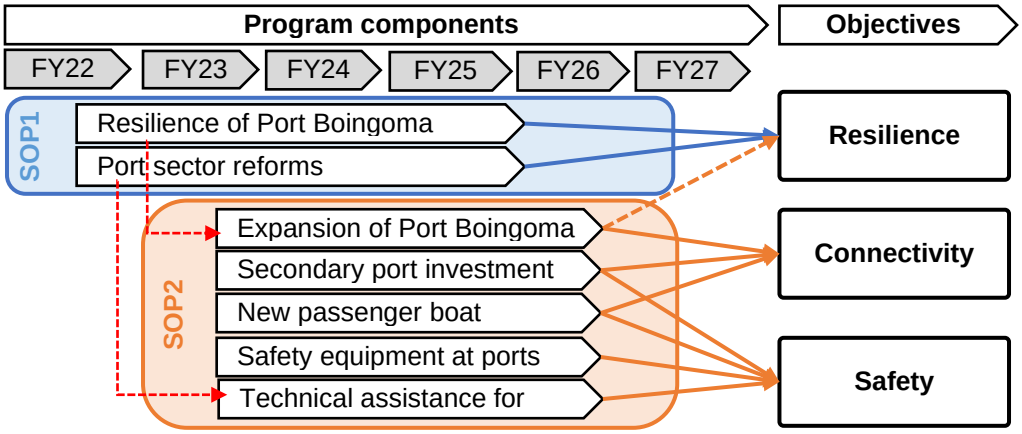
25. **Tother with the first phase of the project (SOP1), this project will also contribute to building more resilience in the transport system, which is relevant to Objective 2: Supporting Disaster Recovery and Resilience, under Focus Area I: Crisis Response and Resilience.** The SOP1 particularly aims at investing in a breakwater and protection for Port Boingoma. This project will add further climate resilience to the port by constructing an additional quay to create a protected area in the bay of Port Boingoma.

26. **Finally, the proposed project is consistent with Objective 1: Building Human Capital, also under Focus Area I of the CPF because it aims at reducing maritime accidents.** The increasing trend of maritime accidents cannot be overlooked, which are causing a significant adverse effect on human capital through loss of life and livelihood for households left. The project may be able to contribute indirectly to improving the Human Capital Index, by which Comoros is ranked 122 out of 157 countries.

Programmatic Approach

27. **Given limited available resources, the proposed operations take a programmatic approach.** The overarching program objective is to improve maritime transport connectivity, climate resilience, and safety between the islands (figure 21). The total investment need of the program is estimated at US$80 million. The first phase SOP1 (P173114) was approved in May 2022. The proposed project will be the second phase of a series of projects. The SOP1 is primarily focused on the climate resilience objective by building a breakwater at Port Boingoma. Building upon the SOP1, the SOP2 aims at improving maritime transport connectivity between the islands by enhancing the port capacity of Port Boingoma and installing proper infrastructure at selected secondary ports. The SOP2 is also expected to contribute to maritime transport safety through supporting the purchase of safety and communications equipment for the ports as well as a pilot program to introduce more efficient and safer passenger boats.

Figure 21. Programmatic Approach and Phasing



28. The overarching objectives at the program level will be achieved jointly during the two phases and measured with a focus on the following aspects:

Objective – Improve maritime transport climate resilience between the islands

- Extended port operations at Port Boingoma regardless of weather conditions (SOP1)

Objective – Improve maritime transport connectivity between the islands

- Greater interisland freight and ferry passenger traffic and female ferry ridership (SOP2)
- Greater passenger traffic by small boat and female small boat ridership (SOP2)

Objective – Improve interisland maritime transport safety

- Fewer maritime accidents (SOP2)
- Greater women's voice on safety committees and job opportunities in the maritime sector (SOP2)

C. Proposed Development Objective(s)

The Project Development Objective (PDO) is to improve maritime transport connectivity and safety between the islands.

Key Results (From PCN)

29. The PDO indicators for the project are:

Objective – Improve maritime transport connectivity between the islands

- volume of freight handled at Port Boingoma on an annual basis
- number of domestic ferry passengers on an annual basis
- number of small boat passengers on an annual basis
- female (ferry and kwassa kwassa) ridership, % change from baseline

Objective – Improve maritime transport safety among the islands

- number of maritime accidents on a yearly basis
- % of women in leadership positions in safety committees to be created

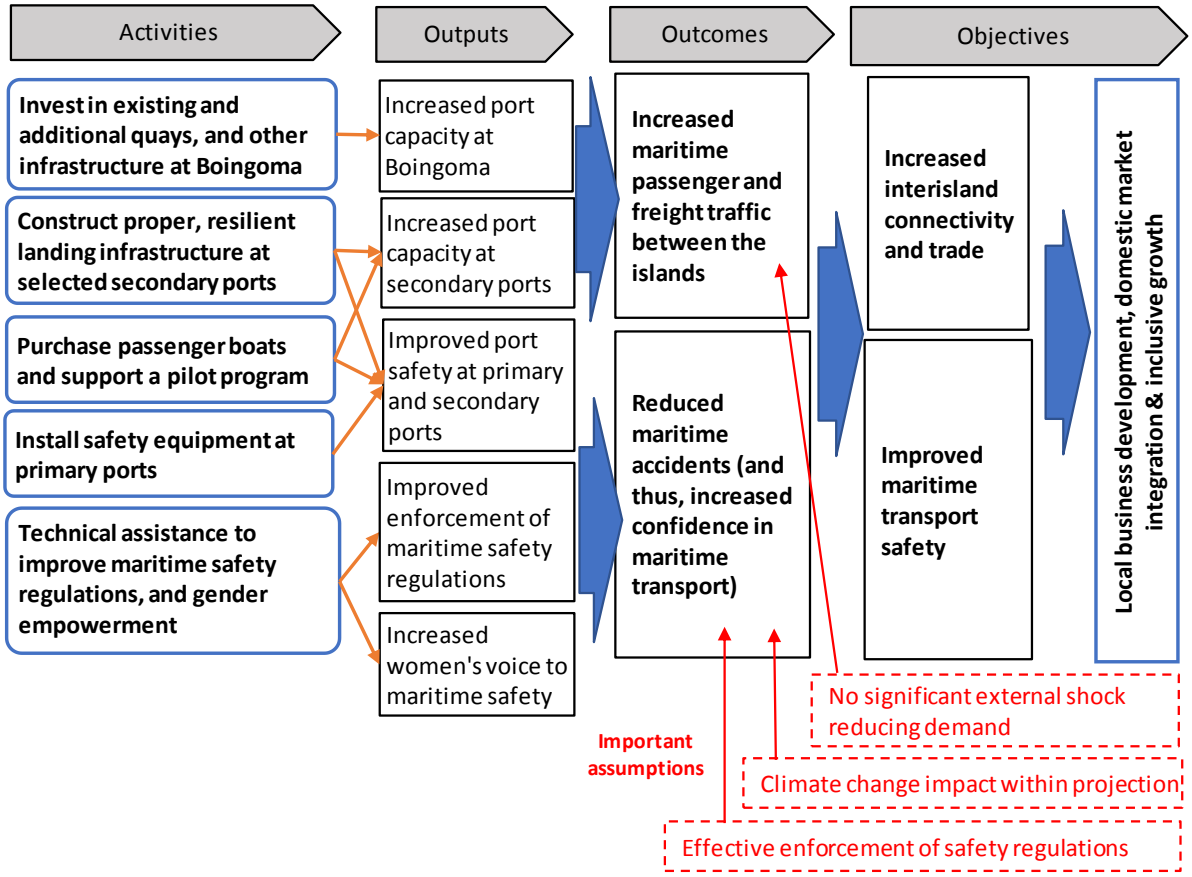
30. Intermediate indicators include:

- Port Boingoma is rehabilitated and expanded to ensure long-term climate resilience
- Number of secondary ports developed to ensure climate resilience and continuous accessibility
- Number of new passenger vessels properly registered
- Number of boat operators and stakeholders in the port sector with training to recognize, intervene and confront GBV/SH events and provide information to victims (in addition to SOP1)
- Number of GBV and HIV/AIDS awareness-raising campaigns carried out in the project areas
- Maritime safety regulations updated

31. The following results chain is assumed (figure 22): The project supports investing in port infrastructure at Port Boingoma and selected secondary ports, which will enhance the port capacity and is expected to result in increasing maritime connectivity, thus, traffic between the islands. The project also supports improving safety and communication equipment at ports and purchasing new, safer passenger boats, both of which are expected to reduce maritime accidents.

Through increasing connectivity and maritime safety, the project is intended to contribute to the country's inclusive growth and local business development over the long run.

Figure 22. Results Chain



D. Concept Description

Component 1. Improvement of maritime transport connectivity through increasing the port capacity (US$37 million)

32. This component aims at improving maritime transport connectivity through enhancing the capacity of the selected primary and secondary ports.

33. **Component 1.1. Increase of the port capacity of Port Boingoma (US$30 million).** The port of Boingoma is located on Moheli island's northeast coast, with the minimum capacity with a draft of 2.4 meters and a 70-meter long 12-meter wide quay. It can only accommodate small vessels with an average length of 25 to 30 meters and handle about 30,000 to 40,000 tons of cargo per year. In April 2019, the substructure of the port was damaged by Cyclone Kenneth. Concrete blocks used for protection of the jetty against waves were lost, gradually eroding the backfill in the foundation and leaving the deck in suspension. The SOP1 approved in May 2022 aims to build climate resilience of the port to

prevent further damage or a total collapse of the structure. However, its handling capacity remains to be severely constrained.

34. **Building upon the work supported by SOP1, this project will support increasing the port capacity at Port Boingoma through financing consultancy services and works to extend and add quays and rehabilitate other port infrastructure at Port Boingoma.** To accommodate larger vessels as well as fishery and small passenger vessels, the following key functionalities will be financed by the project:

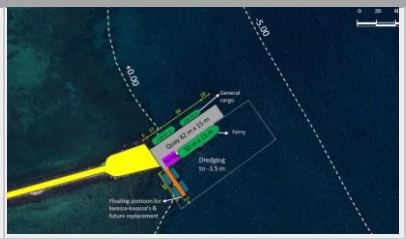
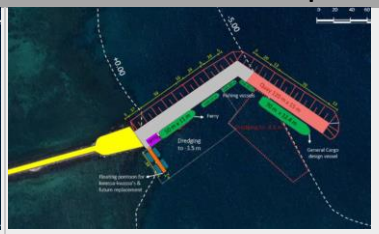
- A new 136m long quay in the extension of the current quay, which will accommodate new roro ferries, up to 50m long and fishery vessels along its South side;
- A new 120 m quay constructed at an angle to the RoPax and fishing berths, and extending in a SE direction, to provide further protection against climate conditions for a sheltered harbor;
- An area for fishery, in addition to the cargo area; and
- Warehouses, administrative buildings and access roads.

35. **The port is designed to accommodate the medium- to long-term port demand and maximize climate resilience.** Tother with the increased resilience to large waves by SOP1, the port capacity will be increased up to 360,800 tons per year. The prefeasibility study compared three options: (1) Modest investment but limited functionality without protection (estimated at US$7 million), (2) Medium investment and progressive capacity addition with sufficient protection (estimated at US$16 million), and (3) Full investment to maximize climate resilience and potential economic growth (estimated at US$60 million) (table 1). To achieve long-term growth and resilience, the option (3) was selected despite the increased investment costs. This is of particular importance for small countries, like Comoros, because the infrastructure sector normally exhibits a threshold effect. The project aims to contribute to opening up the whole Moheli economy. The proposed port layout will accommodate fishing boats and other small cargo vessels, which could support local businesses and complementary industries, such as fishery, in Moheli. The sheltered harbor will increase the utilization rate of the port by these industries and enhance the safety of operations at the port.

36. **The selected port design will also contribute to strengthening climate resilience of the port.** The current linear design of the port is vulnerable to ocean waves and weather conditions, which are expected to deteriorate further with climate change. Under the option (3), additional US$44 million will be spent for resilience purposes. While SOP1 spends US$30 million on increasing protection, breakwater and rock breaking, SOP2 will spend US$14 million to extend a L-shaped quay, which will assure climate resilience of a large, sheltered harbor area. The protected harbor will allow increasing operational time, continuous safe port operations and scheduled ferry and cargo operations.

37. **Enhancing the port capacity at Boingoma will benefit cargo handling operations at other primary ports in Comoros.** By allowing large cargo ships or ferries to directly approach Port Boingoma, the current operational inefficiency involved in offloading goods destined for Moheli and reloading them to small vessels at the port of Moroni or Mutsamudu could be reduced. This could particularly contribute to alleviating port congestion at Moroni, which is currently most crowded in Comoros. Through optimizing the port traffic among the primary ports, the overall maritime traffic is expected to grow in a balanced manner as a whole.

Table 1. Comparison of Investment Options for Port Boingoma

	Option 1: Modest investment	Option 2: Medium and progressive	Option 3: Full investment and development
Layout			
Estimated cost (US$ mil)	6.8	15.9	$60.1*
Of which:			
Breakwater, protection	---	4.4	35.7*
Quays	2.4	5.2	10.2*
Advantages	• Low initial investment	• Partly resilient against large waves • Progressive expansion depending on traffic growth	• Full-fledged developments, including fishery development • Maximum safety and protection against climate events • No future adaptation cost
Disadvantages	• No space to accommodate fishery development or passenger transport • Vulnerable to weather conditions • High adjustment costs in the future	• Only partial space to accommodate fishery development	• High initial investment cost

38. **Component 1.2. Improvement of port infrastructure at selected secondary ports (US$7 million).** This subcomponent aims at financing consultancy services and works for improving secondary ports by constructing proper, resilient landing infrastructure at selected beaches or secondary ports. While the primary port improvement, including Port Boingoma, is essential to formalize maritime transport operations, the informal market served by small boats is also inevitable for local communities. The project will support the government's efforts toward formalizing this market ensuring maritime safety and environmental consideration in their operations. Improving landing sites will facilitate boarding and disembarking for women, who often carry children and bags and wear clothes that make them difficult to balance on unequipped beaches. Maritime safety is of particular concern for women. The people-centered design approach with gender considerations will be incorporated to inform the design of secondary ports.

39. **Given limited available resources, the project is focused on supporting priority landing sites, such as Ouroveni in Grande Comore and Vassi in Anjouan.** There are at least 12 beaches used for kwassa kwassa operations.[15] The selection was made based on a multicriteria analysis with five criteria: (i) Environmental impact, (ii) Local needs (or frequency of current kwassa kwassa operations), (iii) Availability of beach areas, (iv) Maritime safety, (v) Accessibility to passengers, (vi) proximity between the islands, and (vii) estimated project costs. In Grande Comore, Chindini and

[15] Chindini, Ouroveni (high-tide) and Ouroveni (low-tide) in Grande Comore, Hoani, Mbatse, Itsamia, Ouallah and Fomboni in Moheli, and Bimbini, Moya, Vassi and Dodin in Anjouan.

Ouroveni are ranked among the highest priority beaches. The two sites are close to each other and considered to be complementary. While the current traffic is more concentrated on Chindini, the estimated investment cost for Chindini is much higher than that for Ouroveni. The safety risk at Chindini is significantly high because the beach is exposed to high ocean waves, which would require substantial investment in protection, such as breakwater. Thus, investing in Ouroveni Beach is considered to be more cost-effective. For Anjouan, Vassi and Bimbini were identified as priority. While the beach of Bimbini is closer to the populated areas on the island, it has no physical space to expand port functionality. For the Moheli, Hoani is a de facto landing site to go to or come from Grande Comore. However, rather than investing in Hoani, it was decided to prioritize Port Boingoma, which can also accommodate fishery and small passenger boats.

40. **Scaling up.** Given limited resources, the project takes a phased approach and starts with developing landing infrastructure at two top priority sites: Ouroveni and Vassi. Depending on resource availability, other landing sites, such as Dodin and Hoani, may also be supported. The selection of secondary ports will be finalized during the project preparation based on the detailed design and cost estimates which are currently under preparation.

41. To improve efficiency and safety in the informal boat operations and protect coastal environment, the project will equip each selected beach with a landing platform and a pedestrian jetty on piles as well as support climate sheltering improvements, including disposal facilities and navigation aids to assist with approaches and landings:

- A simple and light deck supported by piles with a width of about 3 meters to link the deeper water areas to the shoreline (length will vary across the sites, depending on coastal conditions);
- A multi-purpose building for housing weather and navigation communication equipment, a waiting area for passengers with gender specific sanitation facilities, and a small retail area;
- Waste disposal facilities for vessel oil;
- A fuel station;
- A parking for approximately 20 vehicles (about 25 x 25 m); and
- Lighting system for early departures and late arrivals (for safe pedestrians' circulation), which can be implemented with solar power and batteries.

42. **Climate adaptation and resilience.** Similar to Port Boingoma, the installation of landing platforms, breakwater and other safety facilities will increase climate resilience at the secondary ports. The current kwassa kwassa operations at unequipped beaches are already constrained by climate conditions. Because of a large tidal range in Comoros, kwassa kwassas typically cannot beach close to the shoreline at low tide. When kwassa kwassa departs or arrives at low tide, passengers have to walk long distance on the uncovered beach area, which consists of sand, mud or rock. This condition does not support maritime travel to elderly people or people with children or disabilities. Passengers also risk losing or damaging their cargo brought on board during this unstable walking. Navigation, landing, approaching, loading and offloading conditions are expected to worsen with climate change. Repairs and retrofits that reduce vulnerability to climate risks will be included in the construction/rehabilitation design specifications. The specific climate resilience design features will vary depending on site conditions.

Component 2. Maritime transport safety and pilot program of new passenger boats (US$6 million)

43. **This component is focused on improving maritime transport safety between the islands.** As the demand for interisland transport is expected to pick up, the importance of maritime safety will also increase. To improve maritime

safety, a multidimensional approach is needed: It is required to improve not only port infrastructure (Component 1.2) but also vessels at sea.

44. **Component 2.1. New passenger boat pilot program (US$4 million). The project will support a pilot program to introduce safer passenger boat operations between the islands by financing the partial cost of purchasing properly designed V-hull shape-vessels.** To improve maritime safety of small vessel operations, properly designed V-hull shape-vessels are needed. Under the assumption that the unit cost is US$1-1.5 million per boat, the project can finance 2-4 new boats with a capacity of 20 to 25 passengers, depending on final technical specifications of boats and actual construction costs. Efficient and safe interisland passenger transportation is essential to meet the growing demand from local communities. While the government identifies 33 kwassa kwassa operators between Grande Comore and Moheli, a preliminary feasibility study estimated that about 45 kwassa-kwassa boats are operating in the country. Current informal boats are not designed for passenger transport, which normally accommodate on average 9 passengers and a maximum of 12 passengers, without any safety equipment installed. They are flat bottom vessels, which enable convenient beaching to the current landing locations without any infrastructure but are not adapted to open sea conditions. They are extremely vulnerable to large ocean waves particularly when approaching beaches.

45. **This pilot program does not intend to replace all current kwassa kwassa but aims at demonstrating socioeconomic benefits from safer and more reliable maritime passenger services by new boats.** A recent user survey shows that many people, particularly female users, are concerned about maritime safety of current kwassa operations. In addition, in theory, newer and larger vessels are more fuel-efficient. Thus, new boat operations are economically more viable than current kwassa operations. However, local operators may not be able to afford new ones because of the limited access to financial markets, which is thin in Comoros. The estimated financial payback period is 6.2 years.[16] To fill the gap, it is needed to provide a partial financial support to incentivize new vessel purchase by private operators.

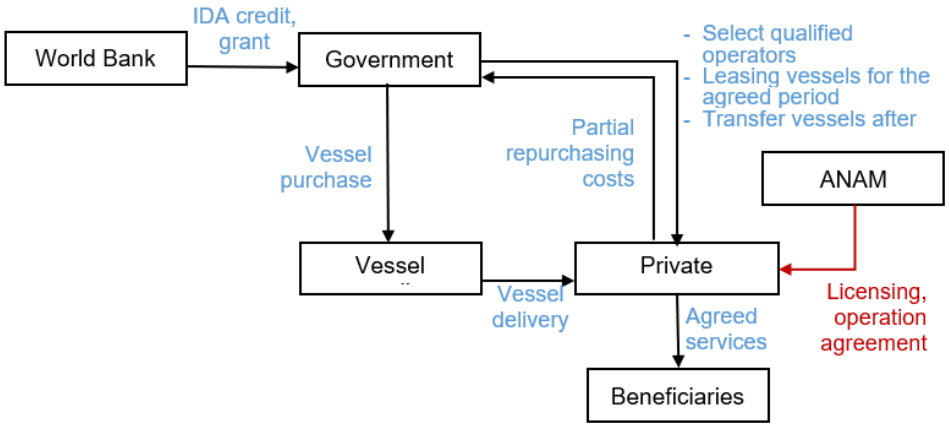
46. **The new passenger boat program will be implemented under a PPP framework.** Given the country's limited experience of PPP in this sector, a lease contract is considered as one of the most appropriate schemes to collaborate with the private sector (figure 23). The government purchases and owns properly designed passenger vessels and lend them to private operators to operate and maintain them for a given period of time (e.g., 10 years). The contractors will be selected through a transparent, competitive process. They will be obliged to deliver the agreed level of services, complying with safety and environmental regulations and meeting operational and financial requirements. A consulting service is currently ongoing to specify a detailed implementation mechanism and to prepare relevant procurement documents.

47. **Gender consideration.** Sensibilization on GBV and SH and trainings in confronting strategies, interventions, provision of information to victims of GBV/SH for passenger boat operators and owners will also be among the requirements from operators. In a male-dominated environment, such as the maritime sector, men and boys often lack knowledge on GBV, including SH, and how to react and prevent incidents. Patriarchal gender norms make it difficult to identify the root causes of violence against women and perpetuate such violence by reinforcing gender stereotypes and victim blaming. Training will provide information on how to refer survivors to service providers related to GBV.

[16] Under the assumption that a new boat would cost US$1 million.

48. **The government will take advantage of this program to formalize the interisland passenger transport market by small boats.** Currently, the market is loosely regulated. There is no formal passenger transport licensing scheme in Comoros. Kwassa kwassa are granted at least a certificate of seaworthiness to be able to navigate for fishing activities. Passenger services by kwassa kwassa are prohibited in theory, although a temporary operating permit is granted as long as minimum safety requirements are met. Through the new boat program, operators are expected to be encouraged or required to register their boats and operations properly. The formalization of the sector will then result in improving overall maritime safety in the country. This process will be supported through technical assistance of this project (Component 3 below).

Figure 23. Framework of Pilot New Passenger Boat Program



49. **Component 2.2. Maritime safety equipment at ports (US$2 million).** By supporting purchasing and installing necessary safety equipment, this subcomponent is expected to increase maritime transport traffic at not only Boingoma but also the other two primary ports. Thus, it is imperative to install and update safety and communications equipment at all the ports. The SCP lacks such communications equipment to ensure proper communications between the shore and the vessels at sea, particularly when they approach and depart from the ports, and in case of emergencies to be able to efficiently mobilize rescue teams and monitor operations. This subcomponent supports the supply of communication systems to be set up at Ports Moroni and Mutsamudu, as well as training required for operators:

- Operations Center. Inmarsat and Navtex equipment, computer and peripherals
- VHF Stations. Modems, antennas, transmitters, microwave communication system
- Training. Operators of Global Maritime Distress and Safety System (GMDSS)

Component 3. Implementation support and capacity building (US$2 million)

50. **This component will finance the costs of preparing and implementing the Project**, including:

- Operating costs of the Project Implementation Unit (PIU);
- Fiduciary activities;
- Safeguard studies and supervision and implantation activities;
- Other technical studies related to the Project; and

- Monitoring and evaluation activities.

51. **The component will also finance technical assistance to support the government's capacity building to enhance maritime safety on the institutional side (**table 2)**.** Maritime safety regulations (e.g., the Comorian Merchant Marine Code) need to be updated to incorporate international conventions provisions and implemented effectively. The capacity of the Ministry of Maritime and Air Transport, ANAM and SCP remains to be strengthened for effective policymaking in the maritime transport sector. To implement safety policies and regulations, the capacity of other relevant agencies also needs to be enhanced, such as the Directorate of Police and National Security (DPSN) and the Coast Guard. Informal landing sites are managed by local communes. The component will support the navigation aids management and maintenance by ANAM and SCP, by developing the corresponding operational protocols and providing necessary maintenance training.

52. **Empowerment of women.** The project will create safety committees to enhance their voice and tackle challenges related to maritime safety that limits women's agency in mobility. Women are present in the maritime agencies in Comoros. About 30 percent of staff in managerial and technical positions are female. On the operational side, however, the traditionally male-dominated system impedes them to participate in decision making and to learn skills related to maritime safety. Maritime knowledge, such as the use of emergency communications or basic swimming skills, are traditionally out of women's reach. A user survey included in the prefeasibility study indicates their fear to use kwassa-kwassa, which limits their agency in mobility. Comorian women expressed their will to participate in projects that affect their lives. It is important to translate their high informal power into higher skills and decision-making space in the sector. The project will create a committee to supervise safety of the kwassa-kwassa operations with a quota for female membership majority. The members will receive training to become operative to monitoring safety (e.g., using maritime communications tools, verification of safety norms, and basic swimming skills). During the consultations under the Citizen Engagement mechanism, female passengers, traders and wives of kwassa-kwassa operators will be consulted to map potential members for the committee and to register women's needs and requests that will be considered for implementation under the committee. The benefits from the committee are expected to translate into the increase of women's use of maritime transport services. The project will monitor the female ridership, for which the baseline will be collected at the first year.

Table 2. Summary of Technical Assistance Activities

Enhancement of maritime safety	Maritime safety regulations	• Update maritime laws (Comoros Merchant Marine Code), integrating international conventions • Harmonization of existing texts and legal provisions governing maritime safety across different agencies • Training for implementation and monitoring of maritime regulations at ANAM
	Empowerment of women	• Establishment of safety committees representing women users to implement and monitor safety regulations
	Navigation aids management	• Training for implementation of operational protocols and maintenance at ANAM and SCP
	Implementation of safety regulations	• Technical support for implementing safety regulations at National Security and Police Department (DPSN) and Coast Guard • Implementation of Global Maritime Distress and Safety System (GMDSS) protocols

53. **Component 4: Contingent emergency response (US$0 million).** This component will allow for rapid reallocation of credit and grant uncommitted funds in the event of an eligible emergency as defined in the World Bank Operational Policy 8.00.[17] An annex (CERC Annex) will be included in the Project Implementation Manual (PIM) to guide activation and implementation of the CERC. For the CERC to be activated and financing to be provided, the government will need to (i) submit a request letter for CERC activation and the evidence required to determine eligibility of the emergency, as defined in the CERC Annex, and (ii) an emergency action plan, including emergency expenditures to be financed, and (iii) meet environmental and social requirements agreed to in the emergency action plan and environmental and social commitment plan.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	No
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

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[17] An eligible emergency is defined as an event that has caused, or is likely to imminently cause, a major adverse economic and/or social impact associated with natural or man-made crises or disasters. Such events include a disease outbreak.

Implementing Agencies

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