

REPORT

Non-Technical Summary

Environmental and Social Impact Assessment for the
Nouakchott Container Terminal

Client: Arise Mauritania

Reference: BF3959IBRP1904181032

Status: Final/01

Date: 18 April 2019



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1 Introduction

1.1 Background

Arise Mauritania S.A. (**Arise**), a joint venture company held by Arise Mauritius and Meridiam, is planning to construct and operate a new container and hydrocarbon terminal in the Port of Nouakchott, Mauritania (hereafter referred to as '**the Project**' or '**Nouakchott Container Terminal**' or '**NCT**').

Arise contracted the Mauritanian environmental consultancy firm EnviroConseil Mauritanie to conduct the Environmental Impact Assessment (EIA) for the Project in line with national regulatory requirements for local permitting purposes. This National EIA was conducted between October and December 2018 and approved by the Ministry of Environment on 5 February 2019 with the issuing of an '*Avis de faisabilité environnementale*'.

In November 2018, Arise contracted the international consultancy firm **Royal HaskoningDHV** to execute the Environmental and Social Impact Assessment (**ESIA**) for the Project following the International Finance Corporation Performance (IFC) Standards on Environmental and Social Sustainability.

The present document constitutes a Non-Technical Summary (**NTS**) of the Draft Final version of the ESIA issued on 10 April 2019.

1.2 Purpose of the document

The purpose of the ESIA is to identify the potential positive and adverse environmental and social impacts that may arise from the project, identify the measures to be used to manage, mitigate, enhance and monitor the impact of those impacts, and to assess the net impact following mitigation.

Objective of this document is to provide a shortened and simplified version of the ESIA accessible to all project's stakeholders. This document is available in English, French and Arabic language and is disclosed on Arise's web site (www.arisemauritania.com).

The document presents the project, its key environmental and social impacts and planned mitigation and enhancement measures, as well as the proposed set-up for stakeholder engagement and management of grievance during the construction and operation of the new terminal.

2 Summary description of the project

2.1 Project location

The project will be located within the boundaries of the existing Port of Nouakchott ('Port Autonome de Nouakchott dit Port de l'Amitié' or 'PANPA'), approximately 15km south-west of Nouakchott city. The port is located in the administrative region (Wilaya) of Nouakchott-Sud, subdivided further to be located in the sub-regional department (Moughataa) of El Mina.



Figure 2-1: View of Port of Nouakchott

2.2 Project components

The new container and hydrocarbon terminal will consist of the following main features:

- A main berth which actually is a deck (570 x 56.56m) to be built on piles;
- A container yard 600 x 120m (7.20 ha) to accommodate containers, reefer containers and hazardous cargo containers;
- An improved navigation channel and port basin through dredging up to -15.7m depth. The dredged material (about 5.2 million m³) will be disposed in offshore disposal sites. The dredging footprint as well as the envisaged offshore disposal sites (A, B and C) are shown on Figure 3 2. The total length of the dredging channel is expected to be 7.57km. Dredging will consist in both the deepening of areas that have recently been dredged and the dredging of new areas;
- Extension of the existing breakwater located on the groin north of the port to reduce the wave agitation into the port basin;
- Installation of four hydrocarbon pipelines from the new berth to the existing junction point (about 500m length), and demolition of the existing oil jetty and pipelines going from the oil jetty to that same junction point.
- The construction of several facilities, as there are: an office building, a control room, workshop building, sewage treatment plant, weigh bridge, a 6km 15kV distribution line (to be installed underground in the right of way of the existing power line along the road) and an electrical substation.

Figure 2-2 shows the current layout of the port with the location of the different berths. Figure 2-3 and Figure 2-4 show the proposed terminal boundaries (outmost redline) and layout.

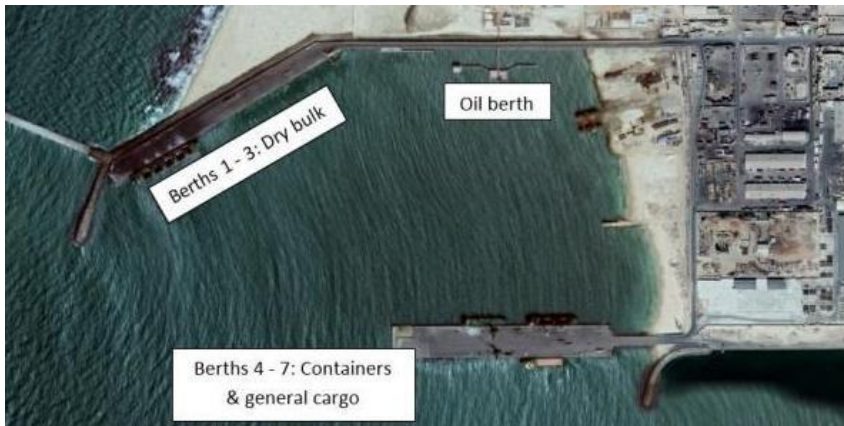


Figure 2-2: The port of Nouakchott and its existing berths

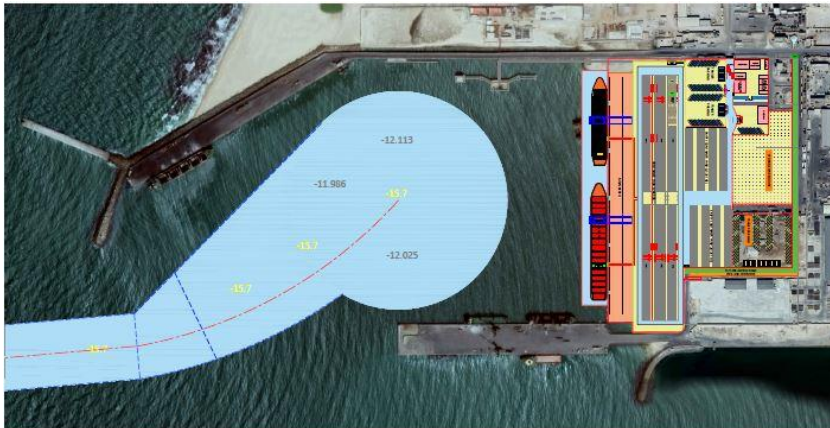


Figure 2-3: Schematic view of the new terminal



Figure 2-4: Schematic view of the new terminal (detail)

Figure 2-5 shows a high-level view of project's footprint and area of influence.



Figure 2-5: Location of the key project components and delimitation of the project's area of influence

The three offshore disposal sites were approved in 2011 by the Mauritanian Ministry of Equipment and Transport (MET) for the disposal of the dredged materials associated with the port extension works conducted by the Société Nationale Chinoise des Travaux de Ponts et Chaussées (SNCTPC).

2.3 Project activities

2.3.1 Construction phase

It is envisaged that the construction will start in 2019 once Arise has all permits and land rights to start construction and the ESIA has been disclosed and finalised based on comments received during the ESIA disclosure period planned in May-June 2019. Construction period will take about 22 months with the following duration expected for each of the project construction activities:

- 16 months for the construction of the berth, including container yard and utilities;

- 8 months of building works;
- 3 months for the erection and testing of port equipment's; and
- 5 months for dredging works at the end of the construction period.

AFCONS is the Engineering, Procurement and Construction (EPC) Contractor for the project. The Dredging Contractor has not been selected yet.

Construction activities are expected to require about 750 workers at peak. A workers' accommodation camp is planned to be built within the port area.

2.3.2 Operation phase

Project operation activities entail operations of the new container (with handling capacity of 250,000 TEUs) and hydrocarbon terminal (with a handling capacity of up to 50,000 DWT).

During operation of the port 500 job opportunities (direct + indirect) are expected to be created.

2.4 Project policy and regulatory framework

The Arise Environmental Sustainability Policy and Arise Health and Safety Policy lists the Company's commitment to managing business activities to reduce risks for environment and communities, and the commitment to providing a healthy and safe workplace. These policies are shown in **Appendix 1**.

The project will comply with Mauritanian environmental and social (labour conditions) legislation.

Further the project will be guided by international best practices, notably:

- IFC's Performance Standards on Environmental and Social Sustainability (2012);
- World Bank Group Environmental, Health, and Safety Guidelines ('the EHS Guidelines'), specifically: General EHS Guidelines (2007), EHS Guidelines for Ports, Harbours and Terminals (2017) and EHS Guidelines for Shipping (2007).

3 Potential impacts and mitigation

3.1 Methodology

An impact is essentially any change to a resource or receptor brought about by the presence of the project component or by the execution of a project related activity.

The identification of potential impacts was done by an independent team of environmental and social specialists based on analysis of:

- the project activities that represent a source of impact,
- the sensitivities of the baseline environmental and social conditions,
- the concerns and expectations raised by stakeholders in relation to the project.

For each identified impact, mitigation measures to avoid, reduce or manage the potential adverse impacts or enhancement measures to increase positive impacts were identified. These measures will be translated in more detailed management plans during the project implementation. The above process is depicted on Figure 3-1.

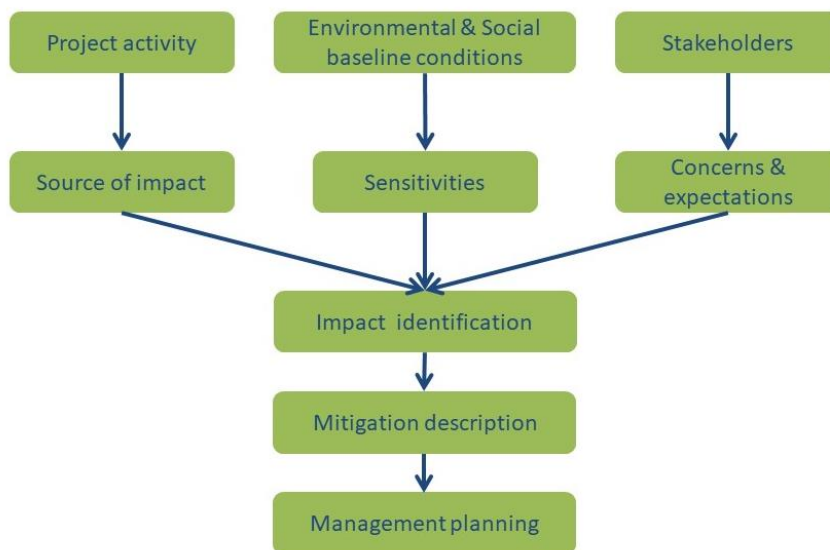


Figure 3-1: Simplified ESIA process

The impact assessment considered the following environmental and social indicators, receptors or resources:

- Air quality and climate;
- Noise and vibration;
- Soils and land quality;
- Surface hydrology, groundwater and water quality;
- Coastal geomorphology, coastal processes and sediment transport;
- Marine water and sediment quality;
- Protected area designations;
- Terrestrial ecology;
- Marine and coastal ecology;
- Ecosystem services;
- Visual amenities;
- Community health, safety and security;
- Economics and livelihood;
- Infrastructure;
- Cultural heritage; and
- Labour and working conditions.

3.2 Positive impacts

The project will carry the economic growth of Mauritania and create opportunities for businesses and socio-economic development in the country. Project benefits include:

- A direct foreign investment of approximately 390 million USD over the project concession duration;
- Creation of employment opportunities for national workers during construction and operations;
- Creating opportunities for Mauritanian companies to provide services and supplies during construction and operation;
- Increasing the competitiveness of cargo handlers within the port; and
- Increasing in potential the import / export capacity from Nouakchott.

The project will also allow to reduce the cost of living of Mauritians thanks to the following factors:

- Imported containers will reach the country in larger vessels, which allows for economies of scale in the transport, and as a result, the price of imported goods in the country could benefit from this and be reduced.
- Hydrocarbon products will be imported directly to Nouakchott, instead of being first transhipped in Nouadhibou, which is a costly operation.

Specifically, for other economic operators within the port area, the project will have the following benefits:

- The extension of the breakwater will reduce the wave agitation in the port basin and as a result improve the downtime of all port operations.
- Fisheries are expected to benefit from a new container terminal, as the export products will be able to be containerized in reefer containers, preserving quality and therefore also their value as an export product.

3.3 Impacts on the terrestrial environment

3.3.1 Baseline conditions

The Port of Nouakchott is situated along the coastline of Mauritania. Nouakchott features a hot desert climate with high temperatures and virtually no rainfall throughout the year. The area surrounding the port comprises of low-lying coastal flats. On the shoreline, to the north, dune systems are present providing natural coastal protection and to the south, a system of levees has been constructed to provide protection from coastal inundation. Due to the construction of levees a wetland area has been created to the south of the port, where several species of flora and avifauna are present.

As the project area is surrounded by desert sand, dust levels are assumed to already be high. Also, because the project is situated in an existing port and industrial zone the air quality is expected to have higher levels of particulate matter and pollutants from exhaust of engines, emissions of industries and heavy traffic (dust). Similarly, the current noise and vibration levels are expected to be relatively high.

In order to determine the soil quality baseline and to assess soil management for that which will be excavated for pipeline removal, soil samples were taken at the port area where the quay and the new pipelines will be constructed. Results showed that concentrations of investigated parameters (metals and total petroleum hydrocarbons) did not exceed levels of concern. The required trenching for installation of a 15kV electric cable adjacent to the coastal road connecting the city to the port similarly showed no visible signs of spill contamination, on either side of the road.

Within the port area and within the project work area little terrestrial flora and fauna is present. There are no protected areas near the port. The closest protected area is the National Park Banc d'Arguin, situated 150km North of the port.

3.3.2 Key impacts

Considering the potentially sensitive terrestrial receptors that were identified and risk associated with the port activities, key potentially negative terrestrial environmental impacts are:

Construction phase:

- Impairment of air quality by exhaust emissions from vehicles, vessels and equipment engines;
- Dust emission from land preparation, concrete batching and material hauling;
- Soil and groundwater contamination from accidental spills of hazardous material stored on site and improper disposal of construction waste and wastewater;
- Soil contamination from oil jetty and hydrocarbon pipelines removal operation.

Operation phase

- Impairment of air quality by exhaust emissions from vehicles, vessels and equipment engines;
- Volatile organic compound (VOC) emissions from fuel storage tanks and fuel transfer activities;
- Soil and groundwater contamination from accidental spills of hazardous material stored on site and hydrocarbon pipelines and from improper disposal of operation land-based and vessel generated waste and wastewater.

3.4 Impacts on the marine environment

3.4.1 Baseline conditions

The Mauritanian marine zone is characterised by a high biological productivity caused by upwelling of cold and oxygen rich waters along the coast. Periods of upwelling occur during the period November to June. During this period the sea temperatures are relatively low 15-17 C. In the summer, when the wind changes direction, the Mauritanian sea is fed by warm surface waters coming from the south (Guinea current) which increase the water temperature to 25-27C. These different phenomena allow that a wide variety of species and ecosystems to occur along the coast of Mauritania. The main sensitive receptor species group that are of interest for this project include marine mammals, marine turtles, marine birds and benthic fauna.

The project is located outside protected areas and site of biological and ecological interest. The nearest marine national park is The Banc d'Arguin National Park which boundary lies approximately 150km north of Nouakchott. The site is a major wintering and breeding site for migratory birds. Though most migratory birds will concentrate in this region, the entire coastline of Mauritania is recognized as an important area for birds.

The construction of the port in 1979 has resulted in a serious coastline modification. The coastline to the north of the port has expanded and the coastline to the south has eroded. In 2014, Société Nationale Chinoise des Travaux de Ponts et Chaussées (SNCTPC) constructed a new pier including four berths in the port. In addition, the access channel was dredged, and the dredged sediment was disposed of in designated disposal sites at sea. Most of the area in which the port expansion will take place is not a pristine environment and has undergone relatively recent disturbance due to previous port related activities.

The coastal area that might be impacted by the activities is mostly made of sand with intermittent areas of rocks. The sandy areas benthic species such as polychaetes (worms), bivalves and crustaceans (crabs) found are those which are generally found along the Mauritanian coastline. At the locations where rocky habitat was discovered, coral and sponge growth were identified. Areas with rocks tend to have a higher biodiversity and the species associated with it such as sponges and coral are generally more sensitive to disturbance. It was not possible to identify the exact species as part of the baseline survey. The sediment quality and water quality within the dredging footprint showed no sign of contamination and is therefore safe for disposal at sea.

3.4.2 Key impacts

Considering the sensitive marine receptors that were identified and risk associated with the port activities, the key potentially negative marine environmental impacts are:

Construction phase

- Increase of turbidity and suspended sediment concentrations in the water due to dredging and disposal activities;
- Smothering of sensitive habitat caused by the sedimentation due to dredging and disposal activities;
- Loss of habitat as a result of dredging and disposal of dredging material;
- Increased levels of pollutants in marine water in case of discharge of untreated waste water from land-based activities in the port;
- Local behaviour modification of marine species (marine mammals, turtles, birds) due to increased (underwater) noise and vibrations;
- Increased disturbance and collision risk of sensitive species due to increased vessel traffic and use of dredging equipment.

Operation phase

- Possible additional coastline modification because of lengthening and deepening of the access channel. Preliminary marine baseline and modelling studies indicated that the local changes in bathymetry in the access channel will lead to some erosion of the coastline to the south of the port;
- Increased risk of collisions with marine mammals and marine turtles due to increase vessels traffic;
- Increased risk of pollution incidents due to increased vessel (including oil tankers) traffic;
- Impact of maintenance dredging and disposal on sensitive marine receptor species;
- Increased levels of pollutants in marine water in case of discharge of untreated waste water from land-based activities in the port and ship-generated effluents including sewage, ballast water, bilge water and vessel-cleaning.

3.5 Social impacts

3.5.1 Baseline conditions

The port site is an existing established facility within a designated industrial zone. The access to the port is limited to two main roads from Nouakchott city. The current port has a total of 8 berths which can accommodate oil/gas tankers and container ships. Port employees includes shipping operators, container handlers and dockers associations, with main companies being APM Terminals, CMA-CGM, OPM, Maurilog, Sogeco). The area surrounding the port is a designated economic industrial zone, comprising of several industrial plants (i.e. a state-owned oil tank farm, two cement factories and a flour factory).

The waters off Nouakchott (and all of Mauritania) support significant numbers of fish species many of which are targeted by the artisanal and coastal fishing and industrial fleets. Artisanal fishing targets coastal species such as the mullet, the croaker (*Micropogonias undulates*), bluefish, and bonga shad (*Ethmalosa fimbriata*), several shark and ray species. More recently this fleet has developed fishing capacity further offshore and has started to capture significantly species of "small pelagics" such as sardines and horse mackerel. The fishing industry is mostly centred around Nouadhibou. The export and trade of fish in Nouakchott is relatively small. Because of regulations and security zone within the project area of influence it is expected that artisanal fishing is limited. Main local fishermen associations are SMPN, SMCP and FLPA.



Image 3-1: Nouakchott artisanal fishing centre

There are no recreation and/or tourism locations, neither important historic and cultural heritage facilities near to the project area.

No residential buildings are present in the vicinity of the Port area. However, three small semi-permanent informal settlement (shacks) are present approximately 5km to the north of the port that is within the port's area of influence. They will not be affected directly by the main project's activities except by the work required to install the new 15 kV line along the coastal road and the general increase in local road traffic. Thus, human receptors of potential project impacts are composed of project workers, employees of the existing port and industrial zone, the residents of the informal settlement and fishermen fishing just outside the existing marine security zone.

3.5.2 Key impacts

Construction phase

- Increased risk of road traffic safety incidents;
- Increased risk of vessel traffic safety incidents;
- Impact on community health from construction activities (dust, noise and increase risk of accidents);
- Impact on fishing grounds and fishing access;
- Hindrance of port operations;
- Impact of influx of expat workers on historic and cultural heritage;
- Potential issues related to labour related grievances, discrimination, equal opportunities, supply chain, risk of child labour and forced labour; and
- Impact on occupational health and safety from construction activities.

Operation phase

- Increased risk of road traffic safety incidents;
- Impact on fishing grounds and fishing access;
- Impact on labour conditions from operation phase;
- Impact on occupational health and safety during routine operation activities
- Impact on occupational health and safety from fire and explosion accident on hydrocarbon berth and pipelines

3.6 Key impact management measures

For each of the above-mentioned impacts, measures were identified to mitigate adverse impacts and enhance positive impacts.

Many of the identified mitigation measures will be covered by standard professional working procedures or good practices; this includes:

- Proper environmental care during the execution of works, by clear and controlled waste collection and disposal, non-excessive use of machinery and motorized vehicles, controlled use of resources such as water or electricity;
- Regular maintenance of equipment and vehicles to minimize noise emissions, safety risks and exhaust emissions;
- Proper site drainage including oil water separators and bunding at hazardous materials storage areas;
- Proper planning of works, to avoid unnecessary transportation/traffic and hindrance of other port activities;
- Good human resource management and guidance of workers, including appropriate training;
- Regular safety briefings, safety signage, proper housekeeping suitable personal protection equipment, etc. to ensure a safe work place with an effective safety culture; and
- Proper and effective communication between all layers of the organization, between different executing parties and external stakeholders.

Additional key measures to mitigate potential impacts on the **terrestrial environment** include:

- Procurement of major operation equipment's (STS and RTG) fully electrical and not diesel-based engine to reduce exhaust emissions;
- Development and implementation of a Waste Management Plan for both the construction and operation phase;
- Implementation of specific measures to reduce the risk and impact of an accidental spills from the hydrocarbon pipelines (e.g. shutdown valves, corrosion maintenance, leak detection system, provision of spill response equipment and training in oil spill prevention, containment and response).

Key measures specific to activities that could impact the **marine environment** include:

- Development and implementation of a Dredging Management Plan to help select dredging method, rate and planning as well as disposal site location in order to minimize impact on the sensitive receptor species;
- Depending on the significance of the potential impact on coastline modification, definition of appropriate coastal protection measures (e.g. use of dredging for beach nourishment);
- Observations to monitor for turtles and marine mammals no less than 30 minutes prior to commencement of marine construction activities (namely dredging and piling) and suspend activities when megafauna species are in close proximity;
- Use of a soft start/slow ram up during piling and dredging activities;

- When using a suction dredger only start the pumps once the draghead is close to the seabed. If issues arise consider using a tickler chains or turtle deflectors on the drag head to reduce the likelihood of a turtle getting drawn into the draghead;
- Treatment of effluents (sewerage, stormwater) of land-based activities before discharge into the sea;
- Updating, together with the Port Authority, of the existing National Oil Spill Contingency Plan (*Plan POLMAR*) to take into account the new hydrocarbon terminal and that equipment and trained staff are available for its implementation.

Key mitigation measures related to **social impacts** include:

- Development and implementation of a Traffic Management Plan to reduce the risk of road traffic accidents during the construction phase, in particular haulage of construction materials. The plan will include amongst others design of access points, signage, speed limits, training and fitness of drivers, maintenance of vehicles and sensitisation of other road users;
- Clear demarcation of marine working areas, appropriate navigation equipment and effective engagement with users of the marine environment to minimise the risk of vessel traffic accident;
- Development and implementation of a Local Employment and Content Plan to maximise the employment of local labour and Mauritanian Nationals;
- Adoption and implementation of a Human Resources Policy in line with the applicable provision of the Labour Act of Mauritania and the requirements of IFC Performance Standard 2;
- Require that the Construction Contractors comply with Arise's Occupational Health and Safety (OHS) Policy and develop and implement a project specific OHS Management Plan and accompanying Procedures;
- Develop and implement an Emergency Preparedness and Response Plan;
- Development and implementation of a Stakeholder Engagement Plan (see Chapter 4 below for more details);

The above mitigation measures will be taken forward and incorporated in a comprehensive project Environmental and Social Management System (ESMS) that will be used to deliver the Project's environment, health and safety regulatory compliance objectives and other related commitments. Measures will be adopted by Arise and imposed as conditions of contract on the Contractors hired for the Project. Monitoring and control will be conducted to ensure their effectiveness.

As mentioned above, detailed policies and plans will be developed to support the implementation of the ESMS. The timing of the development of the plans will be staged – construction related plans will be finalized and in place prior to the start of construction and the operations related plans will be finalized and in place prior to the start of operations.

4 Consultation and Management of Grievance

4.1 Stakeholder Engagement Plan

Arise adopted a Stakeholder Engagement Plan (SEP). The SEP contains an analysis and identification of stakeholders, a description of consultation and disclosure actions for different phases of the project, and a grievance mechanism.

4.2 Stakeholder Consultations

Arise and the project's ESIA team (Royal HaskoningDHV and EnviroConseil) have undertaken a number of consultations with stakeholders as part of the ESIA process.

A first consultation meeting was held on 22 November 2018 at the same time as the official public consultation held for the National EIA. Objective of this meeting was to give stakeholders a chance to express their concerns, expectations and observations regarding the project, to ensure that no issue has been missed during the scoping of the ESIA.



Figure 4-1: November 2018 consultation meeting

Additional focus groups meetings were then conducted in the period of December 2018 to January 2019 with the following key stakeholders:

- Local Fishermen Associations: Fédération Libre de la Pêche Artisanale (FLPA), Société Mauritanienne de Commercialisation de Poissons (SMCP) and Société Mauritanienne pour la Pêche et la Navigation (SMPN)
- Local Authorities: Wilaya Nouakchott Sud
- PANPA Management
- Port Operators: APM Terminals, CMA-CGM and OPM
- Port worker's Association: Securim SRMOP
- Local Business: Les Grandes Moulins de Mauritanie
- NGO: IUCN Mauritania

4.3 Management of Grievances

Arise has set up a grievance mechanism to avoid litigation in the event of a complaint or dispute. Anyone affected by or interested in the project may call on this mechanism without giving up their right to use the

Mauritanian justice system at any time. This mechanism covers any type of complaint whatever the subject and nature, and includes three main steps:

- The recording grievance;
- A proposal for resolution by Arise; and,
- Independent mediation which can be triggered if necessary.

The implementation of this system by Arise is not a requirement to necessarily find a solution to any and all grievance, it constitutes an obligation to receive, record, process, and document all grievance. Any grievance submitted via the grievance mechanism:

- Will receive an acknowledgement of receipt within a maximum period of three days of being submitted; and
- Will lead to a draft resolution within a maximum of three to fourteen days, depending on the grievance priority.

At present, the contact persons to whom stakeholders can lodge a grievance (or ask a question or leave a message) are the Arise Environment, Health and Safety Officer (EHS) or the Corporate Affaires Manager:

Sidi Mohamed Ehmedane
(+222) 43005843
sidi.ehmedane@arisenet.com

Hilaire Courau
(+222) 4300 5820
hilaire.courau@arisenet.com

A grievance submission can be done in writing using the Grievance Submission Form provided in **Appendix 2** or verbally to the CLO if the stakeholder is unable to submit a written grievance.

Appendix 1

Arise Environmental Sustainability Policy and Health and Safety Policy

Appendix 2

Grievance Submission Form