

European Bank for Reconstruction and Development (EBRD)

Project Nador West Med (Morocco)

Non Technical Summary (NTS)

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ABBREVIATIONS

EBRD	European Bank for Reconstruction and Development
BO	<i>Bulletin Officiel</i> (Official Gazette)
EIA	Environmental Impact Assessment (per Moroccan regulatory requirements)
ESIA	Environmental and Social Impact Assessment (ESIA)
PR	Performance Requirements
TEU	Twenty Foot Equivalent
NWM	Nador West Med
ESAP	Environmental and Social Action Plan
EAMP	Environmental Action and Monitoring Plan
IFC	International Finance Corporation

1. INTRODUCTION AND SUMMARY DESCRIPTION OF THE PROJECT

1.1 Purpose of this Document

This document constitutes a non-technical summary (NTS) for the proposed seaport project Nador West Med (NWM) in Morocco and is submitted as part of a suite of environmental and social studies for the European Bank for Reconstruction and Development (EBRD). The document presents the project, a description of the current state of physical, biological and human environment in the project area, key environmental and social impacts, and details the measures planned to prevent, minimize, mitigate or offset these impacts. The EBRD plans to participate in financing the Project. As such, this document is prepared in accordance with the standards applicable to EBRD Projects and is based on existing studies, particularly the environmental impact study by the NOVEC-TME group for NWM as required by Moroccan law, and associated baseline studies conducted by various companies for siting and designing the port.

The NTS has been prepared by an independent team of consultants under the auspices of the South African company, SE Solutions and appointed by the EBRD. The NTS complements the non-technical summary previously established by Moroccan consultants as part of the Moroccan process of environmental impact study, which was made available as part of the public inquiry in August 2014. The process led by SE Solutions has consisted of:

- Identifying gaps between existing documentation and EBRD requirements;
- Addressing the gaps through the preparation of a Stakeholder Participation Plan (EP 10) and a Compensation and Restoration of Livelihoods Framework (EP 5); and,
- Detailing interventions to fill the remaining gaps in an Environmental and Social Action Plan (ESAP).

The documents produced as part of the Moroccan regulatory environmental and social assessment process as well as those required for the EBRD, are listed in Appendix 2.

1.2 Project Location

The proposed NWM port will be built on a site in Betoja Bay on the Western side of the *Cape Trois Fourches* approximately 30 km from the city of Nador (see Figure 1 below), in the Province of Nador and the Oriental Region.



Figure 1: Project Location NWM.

Betoja Bay offers a number of features conducive to the safe and commercially efficient operation of a port. The bathymetry of the bay will allow the development of a deep water port that will facilitate new

generation container ship (16 000 to 18 000 TEU) and tankers of up to 170 000 tons. The proposed site is connected to road networks, motorway and airport existing or planned in the short term. It also has an advantageous position in the sea west of the Mediterranean, an important potential for container transshipment, and the ability to associate a free zone and an economic development zone. The project is thus part of the overall strategy of development of this part of Morocco, which is currently relatively regressive in terms of economic and human development.

1.3 Project Developer

The promoter of Nador West Med project is the NWM Society. It is a private company whose shareholders are fully public, as follows:

- Moroccan state;
- Hassan II Fund;
- Participations TMSA (Tanger Med SA); and,
- National Ports Agency.

1.4 Summarised Project Description

The Nador West Med port complex will consist of:

- A deep water port with significant capacity for trans-shipment of containers and oil and processing of bulk materials, including coal; and,
- Industrial platform open to investors in a free zone of 1500 ha and a development area of 2 500 ha (in addition to the free zone).

The Project, within the financing contemplated by the EBRD, includes the basic infrastructure for the port as described below. The construction and subsequent operation of the industrial activities associated with the port, including the free zone and the development zone, are not part of the project but are Associated Facilities as defined in the Environmental and Social Policy of the EBRD. The envisaged port layout is illustrated in Figure 2.



Figure 2 :Schematic view of the proposed port site and its main structures.

The port of Nador West Med will consist of the following main features (see Figure 3 above), which constitute the "Project" under the EBRD financing:

- Harbour infrastructure of 5 400 m in length, with a depth of 35 m;
- Main breakwater of 4 200 m;
- Secondary breakwater of 1 200 m;
- The harbour infrastructure protects a stretch of water of about 250 hectares, including an ellipse and a turning circle with a depth of 22 m.
- Landing facilities;
- Two container terminals with a combined length of 2 960 m (water depth of 20 meters). The container terminal will consist of a quay of 500 m width and a combined surface area of 138 hectares. The terminals consist of:
 - East platform at the back of the eastern container quay on a surface of 76 hectares; and,
 - West platform at the back of the western container quay on a surface of 62 hectares;
- Three oil berths (1 crude oil and 2 refined product) on piles, situated along the main breakwater at 20 metres depth;
- Diversion works a temporary river that now flows into the sea at the beach.

The investment for the construction of the main structures of the port is estimated at about 10 billion Moroccan dirhams. It will be financed by equity provided by the NWM company of 4 billion dirhams and loans from donors, including the loan contemplated by the EBRD, of 6 billion dirhams. The start of construction is scheduled in 2015 with completion towards the end of 2019. Project construction will be based on EPC with a main managing contractor being appointed following a call for tenders. The call for tenders includes clauses that compel compliance with the environmental and social requirements of the Moroccan regulations and the EBRD, including the need to comply with all applicable performance requirements as well as the ESAP prepared for the Project.

The subsequent operation of the port (after 2018) will likely be given to concessionaires who will operate each of the main areas of the Port (container terminal, oil terminal, bulk cargo handling), under the overall responsibility of the NWM society. These concessionaires will be selected following a call for tenders run by NWM, which will also include the need to comply with Moroccan regulations and EBRD requirements. Finally, construction and operation of the free zone, and the industrial area, are not part of the Project (insofar as they are not affected by the EBRD financing) but are considered to be 'Associated facilities' as defined in the Environmental and Social Policy of the EBRD.

1.4.1 Main construction stages

The main stages of construction of the Project, over the 4 year construction period, are:

Phase A (about 8 months):

- Establishment of construction services;
- Opening quarries and commencing quarrying;
- Construction of the landward side of the main breakwater;
- Construction of the service port; and,
- Earthworks in the dune area;

Phase B (about 16 months):

- Soil treatment work at the main breakwater;
- Construction of the main breakwater;
- Construction of the secondary breakwater; and,
- Dredging of the harbour basin.

Phase C (about 8 months):

- Setting up temporary embankments and construction of East and West terminal diaphragm walls;
- Soil treatment at the containers terminal;

- Construction of a specialized bulk terminal pile

Phase D (about 8 months):

- Finalization of the primary and secondary breakwaters and implementation of port superstructure;
- Construction of the hydrocarbons terminal;
- Backfilling the container terminals embankments; and,
- Construction of a dry dock.

Phase E (about 6 months)

- Dredging of the buffer zone round the port;
- Implementation of diaphragm wall superstructures; and,
- Dismantling of the service port.

It is estimated that the labour required for construction of the Project will be approximately 2,500 workers. During the operating phase about 1,200 workers would be needed for the port, excluding the free zone. The labour requirements of the free zone cannot be estimated currently as the extent and nature of the industries that will be established is not known at this stage.

1.5 Port operations and promotion of the free zone

After completion of the basic infrastructure, planned for completion in 2018, the port will be operated under the supervision of NWM, by one or more concessionaires. It is likely that individual concessionaires will be selected for each of the container, oil, and the bulk activity (mainly for receiving coal). The port will have a considerable advantage in that it will be one of the few in the Mediterranean capable of accommodating the latest generation of container ships.

In terms of capacity, the port will handle annually:

- 3 million containers (TEU - twenty foot equivalent units) with the possibility of increasing the capacity by 2 million additional containers;
- 25 million tons of hydrocarbons;
- 7 million tonnes of coal;
- 3 million tons of cargo.

In terms of the EBRD's Environmental and Social Policy, the port operational facilities are considered as Associated Facilities. The detailed arrangements for the development and promotion of the free zone are not known in detail at this stage. NWM aims to encourage the installation of activities in six sectors considered particularly promising, namely:

- Automobiles;
- Logistics;
- Storage of hydrocarbons;
- Metallurgical and mechanical industries;
- The construction of offshore platforms; and,
- Renewable energy, including wind.

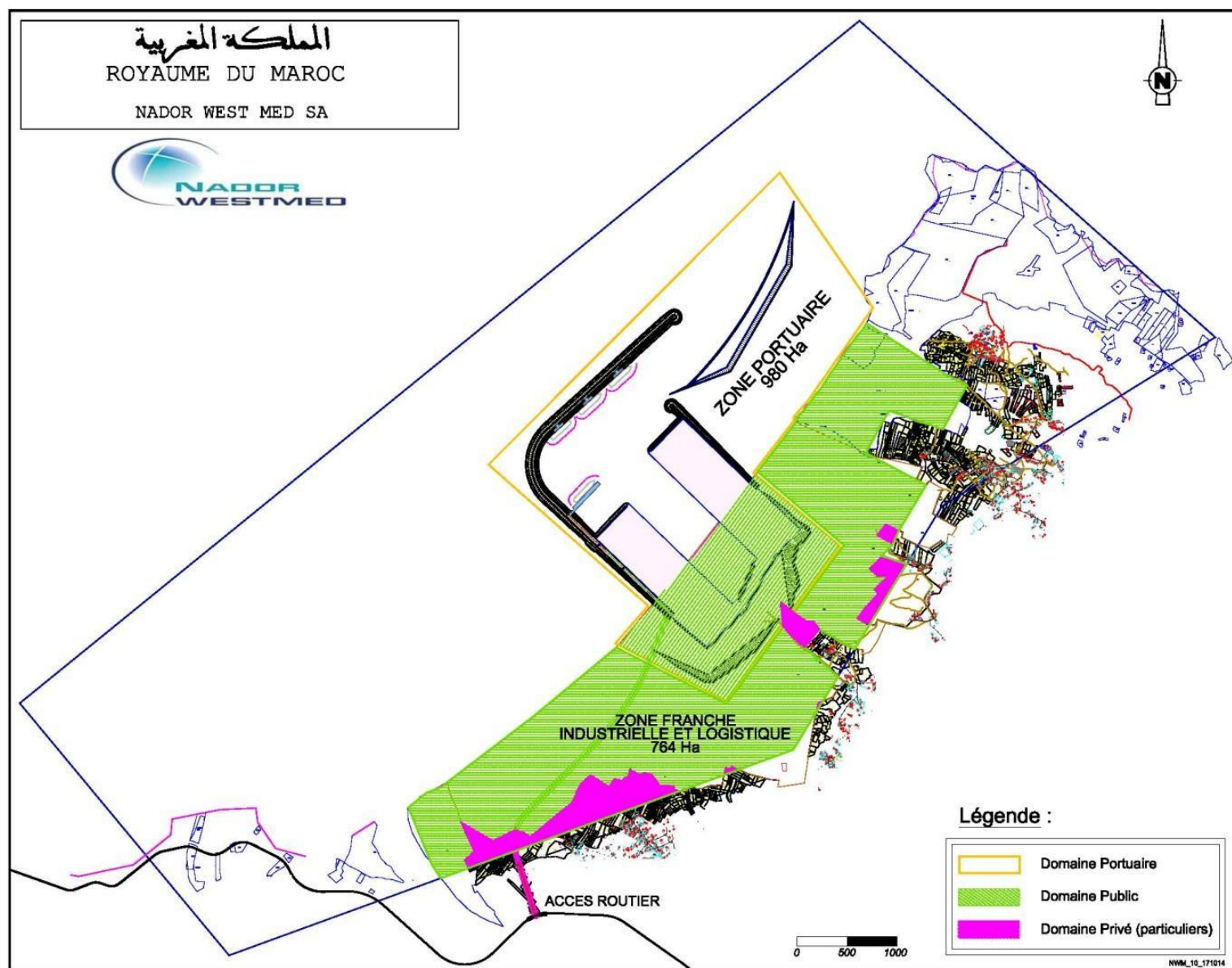


Figure 3 :Schematic view of the port and associated free zone overlaid on a cadastral map.

2. THE REGULATORY ENVIRONMENT IN BRIEF

2.1 Moroccan legislation on impact studies

The EIA was conducted by the consultant group NOVEC-TME in accordance with Moroccan law [Law No. 12-03 on EIA enacted by Dahir No. 1-03-60 10 rabii I 1424 (12 May 2003)], and includes Moroccan laws governing protection of the environment, including requirements for consultation and public information set out in Decree No. 2-04-564 of 5 kaada 1429 (4 November 2008) on public enquiry. In terms of public consultation, Moroccan law requires public consultation over a 20 day period, during which the population, previously informed by press, public announcements and others, is invited to review the documentation, including a non-technical summary, with comments raised being recorded in a register which is taken into account in the report of the Commission of Inquiry.

2.2 Moroccan legislation expropriation

The Moroccan expropriation law is enacted by Law No. 7/81, implemented by Dahir of 6 May 1982 and a decree issued in 1983 that specifies certain procedures and permits the government to proceed with the acquisition of property. Expropriation is used for public projects where landowners refuse to sell the land required for such projects.

There can be no expropriation without a declaration of public utility. The expropriation procedure serves to maintain a balance between public and landowner interest. The procedure has two stages: an administrative stage and a judicial stage, with the latter being triggered (or not) according to the outcome of the administrative stage. The administrative stage must be completed meticulously. The judicial stage then provides for land to be expropriated with compensation taking the form of an amount set by the administration. There must always be an attempt to negotiate a willing seller-willing buyer agreement before the judicial phase is triggered. The administrative phase begins with the declaration of public utility, followed by an administrative investigation that allows the identification of the properties to be expropriated and orders transferability, and finally attempts to reach agreement with the landowners.

The law provides that the value of incurred loss and damage is determined by an Administrative Commission evaluation, chaired by a local administrative authority. Damage caused directly by the expropriation is compensated. The evaluation method is based on the market value of the property at market prices when public utility is declared. The judicial phase is triggered in the event of failure to reach agreement and includes three elements namely, taking possession, transfer of ownership and determination of compensation. Indeed, failure to agree does not paralyze the completion of the transaction. The administration can always take possession of the property subject to the agreement of the owner, provided provisional compensation is paid. The compensation is set in the judgment granting the transfer of ownership and experts may be appointed to assist in that task.

2.3 European Bank for Reconstruction and Development Standards

Under its mandate for sustainable development (Article 3 of the Convention Establishing the EBRD), the EBRD applies an "Environmental and Social Policy" to all projects it finances which is accompanied by 10 Performance Requirements (PR) aligned with environmental or social areas. These 10 Performance Requirements are:

PR 1: Assessment and Management of Environmental and Social Impacts and Issues

PR 2: Labour and Working Conditions

PR 3: Resource Efficiency and Pollution Prevention and Control

PR 4: Health and Safety

PR 5: Land Acquisition, Involuntary Resettlement and Economic Displacement

PR 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources

PR 7: Indigenous Peoples

PR 8: Cultural Heritage

PR 9: Financial Intermediaries

PR 10: Information Disclosure and Stakeholder Engagement

P 1, 2, 3, 4, 5, 6, 8 and 10 apply to the NWM project. As indicated in the introduction the due diligence process required by the EBRD, and which has culminated in this Non Technical Summary, served to identify gaps between the documents prepared by NWM and requirements of the EBRD as outlined above. As part of that process some specific documents have also been developed to fulfil the EBRD requirements, with the actions required to ensure full compliance with the EBRD requirements being detailed in an Environmental and Social Action Plan (ESAP).

3. BIO-PHYSICAL AND SOCIAL ENVIRONMENT

3.1 Physical environment

3.1.1 Climate

The climate of the Project area is Mediterranean, characterized by hot, dry summers and rainy, cool winters, with oceanic influence, which tempers the contrast between summer and winter. The hottest months are July and August with average temperatures of around 26°C, while the coldest months are January and February with average temperatures of around 12°C. The average annual rainfall is some 370mm with most rain occurring between October and April with significant year-to-year variability. The prevailing winds, which are especially important for the design of a port, have been analysed in detail (Artelia, 2010). Some 31% of winds are northeasterly, 39% westerly with winds of more than 10m/s occurring for 51 days/year (14%) and in both predominant directions.

3.1.2 Surface water

Soils in the area are generally high in clay and have low permeability. Runoff is therefore greater than infiltration with associated sheetwash. Drainage in the study area includes two wadis, one of which, the River Kert, forms the boundary between the provinces of Nador and Driouch. The catchment of the Kert is some 2600 km². The other wadi, the Ighzer N'tya has its mouth at the proposed port site. This second wadi has a catchment of only 30 km² and will have to be diverted for the construction and operation of the port. There are also several small valleys that drain directly into the sea with flow only occurring when it rains.



Figure 4: Mouth of the River Kert in Betoya Bay, which is an important source of sediment in the bay.

As shown on the above photograph, there is a dune field that will be affected by the Project. There is a transition evident in vegetation cover with distance from the coastline from predominantly herbaceous vegetation to typically commercial forestry species. See section 3.2.1 below.

3.1.3 Groundwater

The port construction area is marked by the presence of discontinuous aquifers at a depth of about twenty meters. Regionally, the most important aquifers are associated with the River Kert.

3.1.4 Seabed

The bathymetry of the bay is regular except the rocky outcrops that lie to the north and south of the bay. The sediments in the harbour area have been studied comprehensively through several sampling and analysis campaigns conducted between 2006 and 2014. In general the seabed becomes finer

with distance offshore. More specifically at the port itself:

- Near the coast at depths of less than 8 m the seabed is sandy;
- Between 8 and 18 m depth, the seabed is sandy but with an important fine fraction (high silt content);
- Further offshore, beyond 18 m depth, the seabed is composed of silt and mud.

The identification of suitable sites for disposal of dredged material has been based on bathymetric studies, currents, and ecological sensitivity. A dredge disposal area has been identified off the edge of Betoya Bay that has physical characteristics (including bathymetry and currents) that will limit the impacts of spoiling on marine fauna and flora.

3.1.5 Tides, waves, currents

Tidal change is small as evidenced by:

- Astronomical tide (caused by gravitational influence of the moon) has a maximum amplitude of about 50 cm;
- Barometric tide (caused by changes in atmospheric pressure) has a maximum amplitude of 1 meter.

Wave directions follow the patterns seen in the wind rose with waves following the westerly winds constituting one sea state and those following easterly winds constituting another sea state. At the beach the waves are moving perpendicular to the coast. The currents on the site are gentle with the , the coastal current reaching a maximum speed of 0.16 m/s in extreme conditions of wind and tide.

3.1.6 Sediments

Sediment dynamics of Betoya Bay is characterized by the following main elements:

- The River Kert feeds Betoya beach, with a contribution of about 15 000 m³ of sand a year; and,
- About 32 000 m³ of sand a year is wind borne (Aeolian) from the beach to the dunes;

Potential changes in the coastline can be summarized as follows:

- The southern part of the beach is characterised by accretion (deposition) of about + 24 000 m³/year;
- The south central part of the beach is characterised by erosion of about 13,000 m³/year;
- The north central part of the beach experiences limited beach accretion of + 3 000 m³/year; and,
- The northern part of the beach is balanced or has very slight erosion.

Sediment quality has been analysed (10 samples with 8 heavy metals¹ analysed) which shows that the metal content of the sediments does not preclude dumping dredged material at sea (compliance with relevant French standards 3) .

3.2 Biological Environment

3.2.1 Terrestrial flora

At the proposed site for the port, the dunes on the inland side of the beach are covered with vegetation that is typical of commercial forestry such as Aleppo pine (*Pinus halepensis*), acacia (*Acacia cyanophylla*) and eucalyptus (*Eucalyptus gomphocephala*). Within these species other natural

¹ Arsenic, Cadmium, Chrome, Copper, Mercury, Nickel, Lead and Zinc

occurring vegetation is found including the mastic tree (*Pistacia lentiscus*), rock rose (*Cistus salvifolius*), heather (*Erica multiflora* Hanc.) phillyrea (*Phillyrea latifolia*), oleaster (*Olea europea*) etc. The original vegetation remains but it is non-contiguous (patchy) and stunted. It is based on Tamarix and Phillyrea with some wild olives or carob. This 'natural' vegetation occupies less than 5% of the coastal forests. The characteristics of the forests in the area of the port and the free zone are distributed as follows:

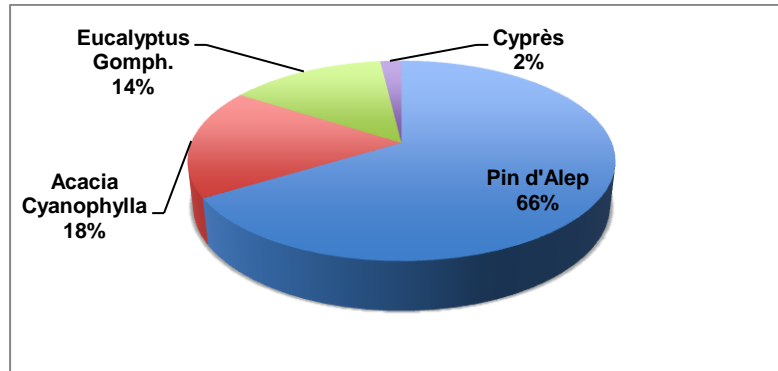


Figure 5: Distribution of tree species in the area affected by the Project.

This forest contributes only marginally to the local economy (firewood and poles) and pastoral activity is low, limited to family herds with limited stock. The vegetation that covers the dune field that will be affected by the Project is degraded and dominated by trees that have been planted to stabilise the dunes. However, dune fields are known to contain sensitive species so much so that the area could be Critical Habitat (as defined in the EBRD's Performance Requirement 6). This is why further investigations of the dune vegetation have been prescribed in the ESAP to ascertain whether the area is Critical Habitat.

3.2.2 Wildlife

The main species of mammals identified in the field or from reference sources are:

- Algeria hedgehog (*Erinaceus algirus*) common species but is scarce due to poaching and is protected;
- Toothed shrew (*Crocidura russula*), few abundant species;
- Hare (*Lepus capensis*), but fairly common species in decline due to poaching;
- Rabbit (*Oryctolagus cuniculus*), relatively abundant species;
- Jackal (*Canis anrieus*) abundant species;
- Red fox (*Vulpes vulpes*), abundant species;
- Wildcat (gloved cat), a species related to forest and which has become very rare due to environmental degradation and depletion of prey and as such is protected;
- The wild boar (*sus scrofa barbarus*), which colonizes all habitats.

The main species of birds are:

- Pigeon Bise (*Columa livia*), which is sedentary and a very common species in the region;
- Wood Pigeon (*Columba palumbus*), a species related to forestry and relatively rare environment;
- Turtle Dove (*Streptopelia turtur*), which can be observed in large quantities from May to September with the doves nesting in cedars.

None of these species is identified as "threatened" or "of concern" in the lists of the International Union for Conservation of Nature (IUCN). NWM will nevertheless conduct further investigations on terrestrial flora and fauna to determine the possible sensitivity of especially the dune habitat that will be affected by

the project, and associated species. These investigations are planned for early 2015, as specified in the ESAP.

3.2.3 Marine flora and fauna

Environmentally, the key feature of the region is the *Cape Trois Fourches*, which is a RAMSAR (Convention on Wetlands) site. This area is located approximately 22 km north of the Project (see map in Figure 1). This site is important for migrating birds and as a wetland feeding area for many marine species, some of which are rare and endangered. These marine species include the Audouin's Gull (*Larus audouinii*), black-legged kittiwake (*Rissa tridactyla*) or Lesser Crested Tern (*Sterna bengalensis*) and the notable Cory's Shearwater (*Calonectris diomedea*), the storm petrel (*Hydrobates pelagicus*) and the Osprey (*Pandion haliaetus*). The rugged nature of the terrain and the escarpment provides habitat for Lesser Kestrel (*Falco naumanni*), the Wheatear (*Oenanthe leucura*) and Bluebird (*Monticola solitarius*).

The coastal waters around the cape are also home to vulnerable or threatened species such as the giant limpet (*Patella ferruginea*) and black limpet (*Patella* formerly *Cymbula nigra nigra*) which are both listed in Appendix II of the Barcelona Convention while the loggerhead turtle (*Caretta caretta*) and the Fin Whale (*Balanoptera physalus*) are both included on the IUCN Red Data List. These whales are migratory and are occasionally spotted near the coast. In addition, the Bottlenose Dolphin (*Tursiops truncatus*) and the common dolphin (*Delphinus delphis*) have been observed east of *Cape Trois Fourches* but are not abundant. The dolphins and the fin whale are also included in Schedule II of the Barcelona Convention. It also appears that colonies of Monk Seals (*Monachus monachus*) previously existed on the site. Monk Seals are listed as Critically Endangered on the IUCN Red Data List but according to a survey by the Nador National Fisheries Research Institute on Betoya Bay no seals have been observed for more than 20 years.

While the *Cape Trois Fourches* site has remarkable biodiversity (hence its classification as SIBE by the Moroccan authorities and as a Ramsar site internationally), the area that will be affected by the proposed port site in Betoya Bay has none. The muddy or sandy sea bed and the absence of marine vegetation means that there are no fauna or floral species of any significance. The only notable marine ecological feature is seagrass of *Cymodocea* that covers an area of some 6.82 hectares, located beyond Pointe Negri about fifteen kilometres from the proposed project site. This seagrass has been mapped and characterised. No other areas of sea grass have been observed in the rest of the study area. Pelagic and benthic fauna has been inventoried and lists of those species listed in the detailed report of the impact study, without any particular sensitivity being identified.

3.2.4 Protected Areas and Sites of biological and ecological interest

The Project is located outside protected areas and sites of biological and ecological interest (SIBE is the Moroccan acronym for the same). The two nearest SIBE are:

- *Cape Trois Fourches* (approximately 20 km from the proposed Project site): some 8000 hectares, of which two thirds is marine, became a Ramsar site in 2005 (see previous section for a description of the area and the species found in that area); and,
- Mont Gourougou (about 10 km from the proposed Project site): It is the only forest site in the Nador region and is considered an ecological space, with educational, recreational, social and tourism benefit (also referred to as the "lung" of the city).

3.3 Landscape

Betoya Bay is typical of the landscapes of the Moroccan Mediterranean coast, with gentle shore slopes and beaches contrasting with cliffs. The main landscape features of the bay are:

- The mouth of the River Kert (including views from the Mediterranean bypass) with halophytes and agricultural areas;
- The coastal landscape (seen for example from laazanene or peaks or nearby ridges);
- Forestry and agricultural hilly landscape (seen for example from the Mediterranean bypass) consists of dunes and forest hills and plateaus in the background, with dispersed rural dwellings that characterizes the area.



View to the north -east from the Mediterranean bypass at Amijaou ; view of the hills on the right bank of the River Kert , dwellings dispersed in the rural town of laazanene and the slopes of Gourougou in the background



View from the Mediterranean ring road towards the beach of Betoya: Informal Landing area Chamla in the foreground on the beach and mouth of the River Kert and transition from beach - dunes - hills on the right bank of the River Kert



Looking south over Betoya Bay from Négri Point showing the transition from beach to dunes to prominent hills



Tourist resort Bouyaffer el- Kallat on Negri Point.

Figure 6: Photographs illustrating the various landscape units of the Project Area

3.4 Socio-economic overview of the Project Area

3.4.1 Location of the project area in the Moroccan political-administrative division

The port and the free zone and associated industrial areas are entirely in the territory of the rural municipality of laazzanene (capital laazzanene), which belongs to the province of Nador (capital: Nador) itself located in the Oriental region (capital: Oujda). The nearby town of Amejjaou will indirectly and marginally be affected by the relocation of some fishermen, as well as some construction phase activities such as the Mediterranean ring road which is the main road of the area. Amejjaou is located in the neighbouring region of Driouch (capital: Driouch) founded in 2009, which is also part of the

Oriental province, with the boundary between the two regions consisting of the River Kert, which flows into the Mediterranean Sea about 3 km southwest of the port site.

3.4.2 Rural Municipality of Iaazzanene

The total population of the town is about 12,000 inhabitants in approximately 2400 households. A significant proportion of adults from the commune have emigrated (Netherlands, Belgium, Germany, France) and therefore many homes are empty most of the year. As shown in Figure 7 below, the dwellings are generally dispersed elsewhere in the Riff, but there is a capital with services such as a bank, post office, school, Friday mosque, cafes, etc ...

At the northern end of Betoya Bay is a resort (Bouyaffer Kallat al) developed by a local developer and used mainly in summer by Moroccans living abroad. The resort will not be affected by the land needs of the Project, nor will the beach that abuts the resort, but will be affected by project the environmental impacts such as noise in the construction and operation phases and the visual impacts. As in the rest of the Riff, the population used the Berber language predominantly for communication specifically Rif Berber, which is a variant of Berber or Amazigh dialects.

3.4.3 Plots and persons likely to be affected by land acquisition

The port itself will be built fully on forestry and marine property that is owned by the state. A number of private plots, mostly agricultural will be affected by the access road. A detailed property survey was conducted by NWM and 20 - 29 plot owners identified. The free zone associated with the Project has some 305 private agricultural plots with some 155 owners. No permanent residences will be affected by the Project.

3.4.4 Fisherman

The area that will be affected by the port specifically contains three landing sites used by local fishermen, which are known as Kallat, Sammar and Chamlalla. Figure 8 below shows the location of the three landing sites. Kallat and Sammar are in the municipality of Iaazannene while Chamlalla is located in the municipality of Amaoujj. Only Sammar will be directly affected by the port. Most of the fishing has been banned since December 2013 because fishermen were practicing an illegal technique (fishing lights) and catches are currently very limited. Fishing activities are likely to be affected by the Project impacts such as increased turbidity due to dredging in the construction and operation phases and by the movement of ships once the port is operational.

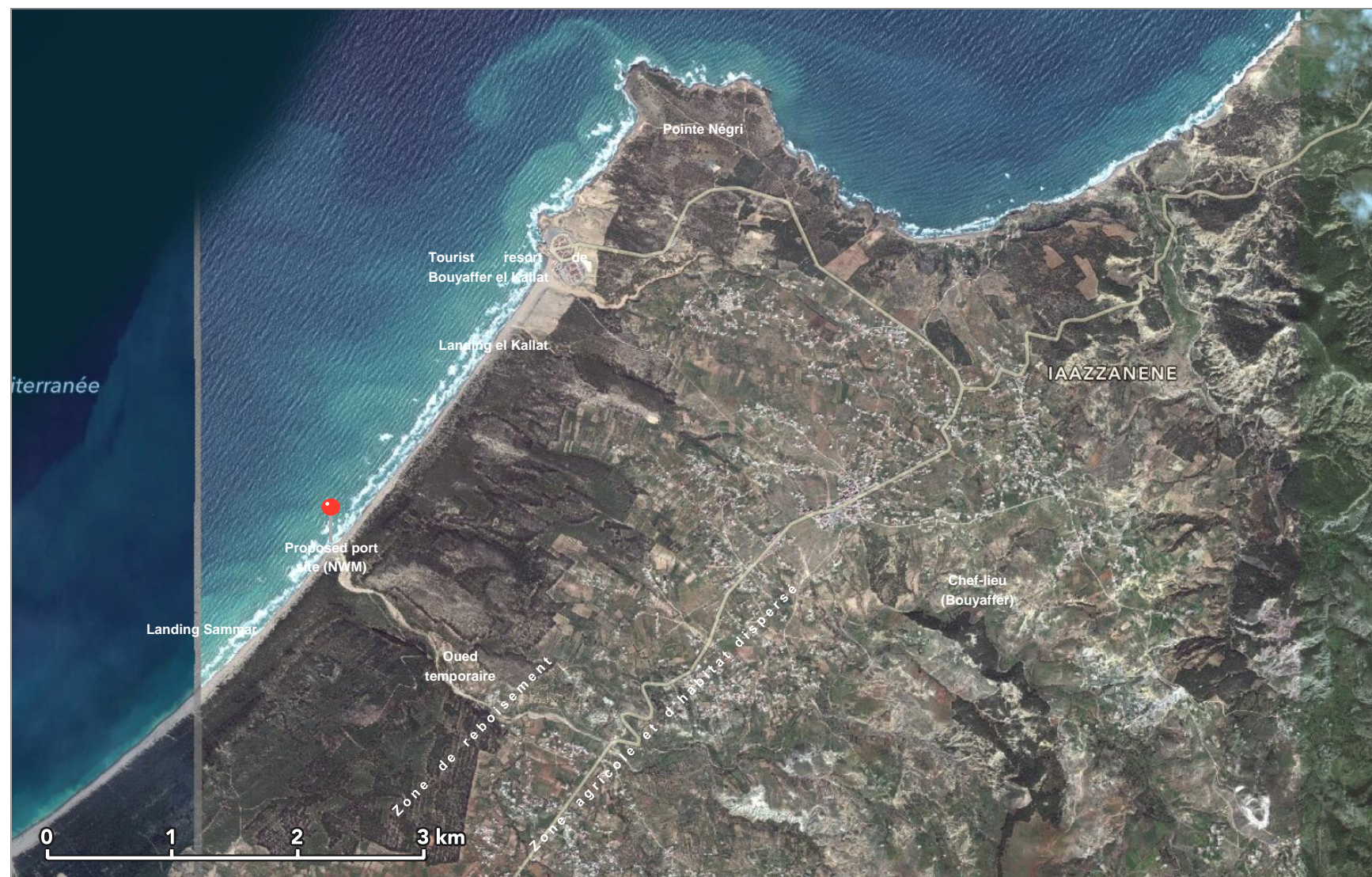


Figure 7: The commune of IAAZZANENE.

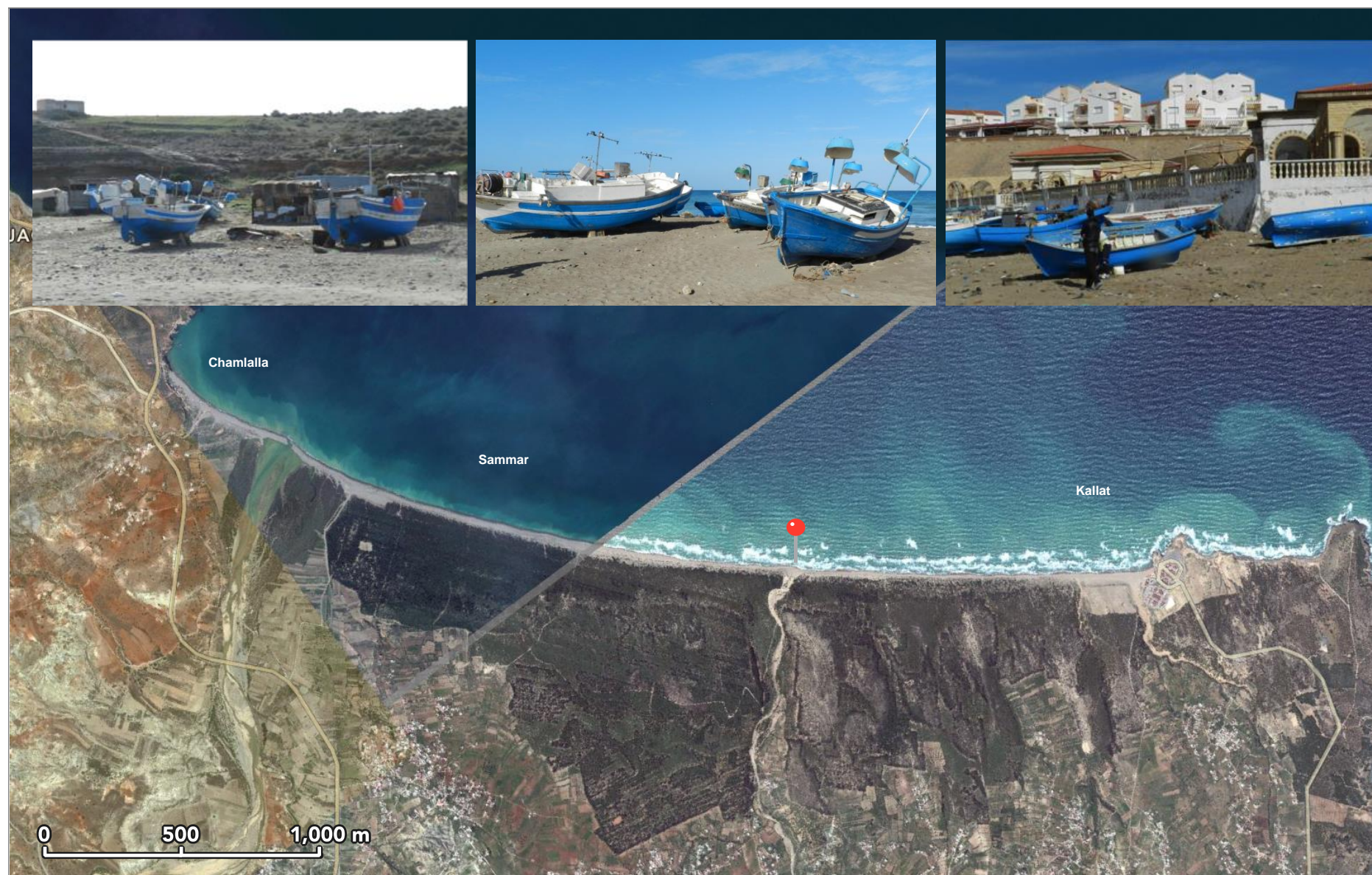


Figure 8: Beach landing sites used by fishermen in the Betoya Bay (*Photos: Novec*)

Data for groups of fishermen who operate these sites were collected by NOVEC-TME group under the EIA NWM project. They are summarized in the following table:

Table 1: Basic data characterising the fishermen in Betoya Bay

Landing	Kallat	Sammar	Chamlalla
Number of boats	40	21	10
Origin of fishermen	CR de Iaazannene	Douar de Sammar, CR de Iaazannene	Douar de Chamlalla, CR de Amaoujj
Type of fishing (technique)	Coastal, small-scale, within 2 nautical miles	Coastal, small-scale, within 3 nautical miles	Coastal, small-scale, within 3 nautical miles
Types of fish	Sardine, squid, bream, mackerel	Sardine, squid, bream,	Sardine, squid, bream, mackerel, anchovies

As part of its overall policy to support small-scale fisheries and fishermen with better marketing and cold chain facilities, the Ministry of Agriculture and Maritime Fishing (MAPM) has prepared a draft relocation plan for of fishermen in Betoya Bay, at the Chamlalla informal landing. The continued presence of fishermen in close proximity to the port, with large ships would present considerable safety and security risks and as such is not desirable. The relocation will enable fishermen to operate in much safer conditions than if they remained where they are currently. NWM and the Ministry of Maritime Fishing are cooperating to implement a relocation approach that is consistent with both national and international standards (in particular EBRD's PR 5), in accordance with the principles presented in the Compensation and Livelihood Restoration Framework (LAF)

3.4.5 Infrastructure

The town of Iaazanene is crossed by the national road N16 ("Mediterranean bypass" from Nador to Al Hoceima), Provincial Road P6202 and a communal road that runs towards the beach of Kallat. These facilities are new and in good condition. Regionally, the area is currently not served by a motorway, however. The highway Rabat - Fez - Oujda is a hundred kilometres around the port but it is planned to supplement the transport infrastructure by building motorway connections between Nador city and the port. In addition, a new rail line linking Nador Taourirt has been built (length 110 km), with seven new stations on the line. Finally, the new Nador International Airport can accommodate 750,000 passengers a year and serves various destinations in Morocco and Europe.

3.5 Architectural and Archaeological Heritage

Iaazanene contains no specific architectural heritage that should be preserved. Dwellings are predominantly rural and progressively transformed into the peri-urban structure typical in Morocco, with relatively sophisticated houses initiated by Moroccans living abroad. The marabout Sidi Messoud is outside the project area and located on the north side of the Pointe Negri. A house in the area "Ghassassa" has historical value in that some inhabitants of Iaazanene indicate that it was one of the earliest buildings in the area. It too is not affected by the proposed project. Despite the likely absence of archaeological remains in the area likely to be affected by the construction, a procedure will be developed in case of unexpected archaeological find during construction.

3.6 Other economic development projects in the area

A comprehensive development plan has been prepared and is being implemented in accordance with royal instructions in Oriental in general and Nador region in particular. Overall, the western part of the *Cape Trois Fourches* is designated industrial structured around the project NWM, including the port and free zone. There are tourism and urban development plans as well including:

- The redevelopment of the city of Nador, including the creation of new districts (around 40,000 units); and,
- The eco-tourism development project Marchica lagoon, which includes cleaning up the lagoon by opening a channel to the Mediterranean and the improvement of effluent treatment in the watershed, as well as major real estate projects;
- The recent rail railway Taourirt Nador fair could be extended to Betoya;
- The construction of a motorway between Nador and the port and the highway Rabat - Fez - Oujda;
- The possible construction of a thermal power plant; and,
- The Sammar agricultural development project, which is based on crop improvement called "bour" (storm), where implementation started in 2006 and is currently being completed.

Note that Nador is a major financial centre (the second largest in Morocco) because of, inter alia, financial flows from Moroccans living abroad.

4. POTENTIAL IMPACTS OF THE PROJECT AND MITIGATION

4.1 Project positive impacts

The Project is part of the Royal Development Initiative of the Oriental region, which is currently lagging behind the rest of Morocco in many socio-economic parameters, especially the literacy rate and the level of poverty and vulnerability. Macroeconomic studies by NWM indicate that the port and associated free zone should, in the long term, create about 100 000 jobs, about 30 000 direct jobs for the port and activities, 50,000 indirect jobs in outsourcing activities and 30,000 indirect jobs in trade and services. Including the construction of the port itself (of the order of 10 billion dirhams), it is estimated that the total investment (Free trade zone and infrastructure) could reach 70 billion dirhams. The construction of the port is expected to employ about 2 500 workers, and operation of the port some 1 200.

4.2 Environmental and social impact management

The Project has developed the following to manage potentially negative impacts (see list of documents in Appendix 2):

- The Environmental Impact Assessment (EIA) prepared under Moroccan law details the environmental and social baseline in the project area, as well as the impact assessment. The EIA was submitted for public review as required by Moroccan law and is now available as a final version;
- The Environmental Action and Monitoring Plan defines mitigation, monitoring and corrective action and articulates a commitment to the Moroccan administration by the project proponent; it is submitted as part of the decision-making on issuing an Environmental Acceptability Decision (the environmental authorisation) issued to the Project by the Moroccan administration. The ESSP is available in draft form and has been submitted by NWM in support of its application for authorisation to proceed with the project; it is subject to change following the comments of the administration;
- The Environmental and Social Action Plan (ESAP) is a document prepared to meet the environmental and social requirements of the EBRD that are not covered by Moroccan law, and therefore not covered by the EIA; This document was prepared by SE Solutions for approval by the EBRD and NWM;
- The Stakeholder Engagement Plan (SEP) specifies the public consultation procedures and disclosure of documents throughout the life of the Project in accordance with the requirements of the EBRD's PR10. This document was prepared by SE Solutions for approval by the EBRD and NWM;
- The Compensation and Livelihood Restoration Framework (LAF) addresses impacts on people and property (economic displacement), and in particular specifies the compensation terms of these impacts in accordance with the requirements of EBRD's PR5; This document was prepared by SE Solutions for approval by the EBRD and NWM.
- This Non Technical Summary is based on the above documents and provides a brief summary of the key components of all the documents and key findings. Readers wanting detail can find the full reports on the NWM² and EBRD³ websites.

In addition, the following tools are still to be prepared for the subsequent phases of the project:

² www.nadorwestmed.ma

³ www.ebrd.com

- Environmental and Social Management System: NWM, which will articulate the different management plans into a single, coherent management system capable of being certified (ISO 14001 or similar);
- Contractor management plan that will be responsible for the work (Assurance Plan on the Environment) required by the tender documents being developed and published by NWM;
- Concessionaire Management Plan which will be assigned to the operation of the various parts of the port (especially container terminals, oil terminal, bulk cargo handling);
- Environmental impact studies and industrial management plans for those industries to be established in the free zone;
- Compensation plans and restoration of livelihoods for farmers affected by the expropriation of land on the one hand, and fishermen relocated on the other;
- Workers' housing plan to be prepared by the general contractor once appointed; and,
- Quarry and transport management plans to be prepared by the general contractor once appointed.

4.3 Key environmental impacts

Following an analysis of the sensitivity of receptors and risks associated with the port activities, the key environmental and social issues of the project are:

4.3.1 Construction phase:

- The impact on terrestrial ecosystems is primarily on the reforested dunes that must be cleared and terraced, with possible impacts on associated plant and animal species;
- Increased turbidity in the sea due to dredging and disposal of dredged material and degradation of water quality and resultant impacts on marine fauna and flora;
- Acoustic impacts on marine life and on the surrounding population;
- Potential health and safety impacts on workers, and risks to the safety of residents, linked in particular to the transport of materials;
- Impacts associated with construction waste;
- The acquisition of land required for the development of the port (access road) and the free zone, and the displacement of fishermen;

4.3.2 Operations phase:

- Increased maritime traffic in the bay, with, in particular, potential impacts on the safety and productivity of fishermen and fishing activities;
- Dredging and disposal of dredged material needed for the maintenance of the port and the access channel during operation;
- Potential health and safety impacts on workers and risks to the safety of residents as a result of the increased transport activities;
- The potential impacts of oil spills, especially for the sensitive Ramsar site at the *Cape Trois Fourches*; and,
- Environmental impacts and risks associated with the industrial activities that establish in the free zone.

4.3.3 Dredging, disposal of dredged material and materials management

One of the most sensitive issues related to the construction (and indeed operations) of the port is the requirement to dredge the harbour and the access channel to create the depth required for ships (draft from 18 to 20 meters) and establishing the foundations of the breakwaters. The dredged material obviously requires disposal and it is intended to dispose of the dredged material at sea. Detailed studies conducted by NWM indicate that:

- A portion of the dredged material can be reused in the construction of embankments in different terminals;
- Muddy materials cannot be reused and must be disposed of at sea after dredging; and,
- An area has been identified for piling off the tip of Betoya, south-west of the port site, where bathymetry and the characteristics of the sea bed.

4.4 Impacts on people and property and compensation measures

The impacts on people and property linked to the acquisition of land required for the Project are described in detail in the Compensation and Livelihood Restoration Framework (LAF) together with the required compensation.

4.4.1 Impacts

The Project has been planned so as to avoid or minimize impacts on people and property:

The site selected for the port has very limited impacts on people and property: indeed, the project results in no displacement, and most of the land that will be affected is uncultivated;

The western limits of the future free zone (toward populated areas of laazzanene) have been adapted to avoid any impact on primary residences and limit economic displacement.

Ultimately, the project will affect the following three categories of persons and / or property

- The port access road will affect 20 to 29 property owners;
- The development of the free zone, which is a facility associated with the Project, will affect 305 private plots which are used for agriculture affecting some 155 owners; and,
- One hundred fishermen (employers and employees together) will be affected by construction and operation of the Port with the beach landing directly effected being consolidated into a single landing point.

It is important to note that no permanent residence is affected by the Project. The tourist site of El Bouyaffer Kallat will be indirectly affected through noise, dust and visual impacts during construction and subsequently by the passage of ships.

4.4.2 Compensation strategy

The following principles will guide land acquisition, compensation and restoration of livelihoods in the Project:

- The activities will be conducted in accordance with Moroccan regulations, EBRD PR5 Performance Requirement and the Compensation and Livelihood Restoration Framework (and both subsequently prepare plans);
- The project will continue to seek to minimize physical and economic displacement;
- All impacts on property and livelihoods will be compensated;
- The compensation will be calculated at the replacement value in accordance with PR 5;
- The compensation will be provided before the impact takes place;
- The project will seek to conclude agreements negotiated under the provisions of Moroccan law on expropriation (first stage of the procedure for an amicable agreement);
- A grievance and complaints management mechanism will be established in accordance with the Stakeholder Engagement Plan (SEP);
- Potentially affected vulnerable people will be identified and assisted as required under the provisions presented;
- The activities of land acquisition and restoration of livelihoods will be monitored by the Project.

4.5 Impacts on fishermen

Fishermen using one of the three beach landings located near the port site in Betoya Bay will move on to a new arrangement which will be a consolidated beach landing at Chamlalla, at the southern end of the bay. The Government, in support of economic development, is supporting artisanal fishing by

consolidating available infrastructure to facilitate the processing of fish (refrigeration) and distribution to markets (transfer platform). This consolidation is happening across the entire territory, and the Chamlalla beach landing fits into this framework. The Chamlalla consolidation will also avoid any impact on the safety of fishermen that could have been caused by the construction and especially the operation of the port. A summary architectural and technical draft was prepared in 2008 by consultants on behalf of the Ministry of Fisheries. NWM will approach the Ministry to expedite the relocation of the fishermen so that this is completed prior to the start of construction.

4.6 Impact management measures

4.6.1 EIA

The tables presented in Appendix 1 are from the Environmental Action and Monitoring Plan (EAMP) and present the Project's impacts on the elements of the physical, biological and human, as well as the impacts of management actions. They come from the impact assessment conducted under Moroccan law by NOVEC-TME group on behalf of NWM. The UTA is pending approval by the relevant Moroccan authority.

4.6.2 ESAP

The Environmental and Social Action Plan (ESAP) includes the necessary measures to ensure compliance by the project with the Environmental and Social Policy of the EBRD, addressing those elements are not explicitly covered by Moroccan law and not included in the EIA. These are mainly the following:

- Preparation and approval by NWM of an environmental and social policy applicable to all the company's activities (construction and operation) confirming the commitment of the company to social and environmental matters;
- Development and implementation of an Environmental and Social Management System capable of being certified (by, for example, ISO 14001);
- Provision of the resources (human and other) necessary for the implementation of environmental and social actions planned;
- Preparation of a human resources policy ensuring compliance with EBRD's PR 2 and international conventions of the ILO, including subcontractors;
- Establishment of a grievance and complaints management mechanism for workers employed on the Project;
- Measurement and monitoring of greenhouse gas emissions;
- Preparation and implementation of a waste management plan for the construction and operation phases;
- Preparation and implementation of an emergency response plan for spills, particularly applicable to the operational phase hydrocarbon terminal and any storage of oil or other hazardous materials;
- Development and implementation of a health management system and safety capable of being certified (by, for example, OHSAS 18001);
- Finalisation of the Land Acquisition Framework (LAF) based on the draft document made available to the public with this non-technical summary and preparation of two specific compensation and restoration of livelihood plans, one for farmers and the other for fishermen;
- Organization of a study complementing existing fauna and flora by conducting transects on the dunes to confirm whether or not, the ecosystem is critical habitat;
- Preparation and implementation of a procedure for chance finds of cultural heritage elements during construction;
- Implementation of the Stakeholder Engagement Plan (SEP) and updating of this SEP prior to the commencement of the operational phases of the Project.

5. CONSULTATION AND MANAGEMENT OF GRIEVANCES

5.1 Stakeholder Engagement Plan

As noted above, NWM adopted a Stakeholder Engagement Plan (SEP), available to the public in its entirety on the websites of NWM and EBRD. The SEP contains an analysis and identification of stakeholders, a description of consultation and disclosure actions for different phases of the Project, and a complaints management system.

5.2 Public Consultation

In addition to the public enquiry in 2014 around the EIA in accordance with Moroccan regulations, NWM organized open days in Iaazzanene in February 2015 to present all of the social and environmental documentation of the project and solicit comments from the public.

5.3 Management of complaints and grievances

NWM will set up a complaints 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 Moroccan justice system at any time. This mechanism covers any type of complaint whatever the subject and nature, and will include three main steps:

- The registration of the complaint or dispute;
- A proposal for resolution by NWM; and,
- Independent mediation can be triggered if necessary.

The implementation of this system by NWM is not a requirement to necessarily find a solution to any and all complaints, it constitutes an obligation to receive, record, process, and document all complaints. Any recorded complaints:

- Will receive written acknowledgment of receipt within a maximum period of seven calendar days;
- Will lead to a draft resolution (before any referral to the Mediation Committee) within a maximum of thirty calendar days.
- At present, those interested can leave a message, make a complaint, or ask a question using the website NWM (<http://www.nadorwestmed.ma/fr/contacteznous>).

5.4 Disclosure by NWM and the EBRD

In addition to this Non Technical Summary, the following documents will be made available to the public in French and Arabic:

- Environmental Impact Assessment;
- Monitoring Plan and Environmental Monitoring (ESSP);
- The Environmental and Social Action Plan (ESAP);
- The Stakeholder Engagement Plan (SEP);
- The Compensation Plan and Restoration of Livelihoods.

The publication will be on the websites of NWM and EBRD as well as in hard copy at the information centre to be opened by NWM to Iaazzanene.

Annexure 1 – Environmental Action and Monitoring Plan

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
CONSTRUCTION PHASE				
Soil				
Surveys	• Strictly limit the movement of heavy machinery	Negative - low	Execution	Contractor & NWM
	• Minimise paths and tracks and use only established routes		Execution	Contractor & NWM
	• Close and rehabilitate survey holes/excavations		Execution	Contractor
Site establishment	• Design site to ensure any tank (water, oil, etc.) is established in a secure location, that allows for monitoring of its condition, rapid response in case of accidental leakage and minimizing hydro geochemical degradation of soil conditions	Negative - low	Execution	Contractor
	• Require storage tanks to be double-walled and equipped with leak detectors for easy monitoring		Execution	NWM
	• Restrict access with security fences around any hydrocarbon storage		Execution	Contractor
	• Provide sealed enclosures (bundings)		Execution	Contractor
	• Restrict the number of roads and limit the movement of the machinery to work areas and access to such roads		Execution	Contractor
	• Provide on-site absorbent material and watertight labelled containers for recovered oil residues and waste		Execution	Contractor
	• Provide for rehabilitation and landscaping once the works are completed.		Execution	Contractor & NWM
Excavations and earthworks	• Unused material must be placed in storage areas if it is intended to be used later, otherwise such materials are to be transported to waste transition areas and from there to final disposal.	Negative - low	Execution	Contractor & NWM
	• Strictly limit the movement of heavy machinery including limiting the speed to 20 km/h at the edges of excavated areas and close to residential areas. Limit roadways and tracks that can be used in transporting products and equipment.		Execution	Contractor
	• Restrict the number of roadways and limit the movement of the machinery to work areas		Execution	Contractor
River diversion	• Design a sustainable diversion for the river,	Negative - Low	Execution	Contractor and NWM

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
	• Provide watertight secondary containment according to the rules and standards for aboveground tanks, which are used for the retention and storage of hazardous materials (oil , paint, lubricants, etc ...). The capacity of the secondary containment must be 110 % of the volume of stored products . Secondary containment must be built using watertight materials including concrete, sand and absorbent.		Execution	Contractor
	• Restrict the number of roadways and limit the movement of the machinery to work areas		Execution	Contractor and NWM
	• Unused material must be placed in storage areas if it is intended to be used later, otherwise such materials are to be transported to waste transition areas and from there to final disposal.		Execution	Contractor and NWM
Landscaping	Provide for rehabilitation and landscaping once the works are completed.	Negative - Low	Execution	Contractor and NWM
	• Strictly limit the movement of heavy machinery including limiting the speed to 20 km/h at the edges of excavated areas and close to residential areas. Limit roadways and tracks that can be used in transporting products and equipment.		Execution	Contractor
	• Unused material must be placed in storage areas if it is intended to be used later, otherwise such materials are to be transported to waste transition areas and from there to final disposal.		Execution	Contractor
	• Provide facilities for vehicle traffic whenever there is a risk of compaction or alteration of the surface		Execution	Contractor and NWM
	• Install a security fence with restricted access around the site		Execution	Contractor
Ambient air quality				
Transport of materials and movement of machines	Maintain a sufficient frequency of watering of roadways during excavation works	Negative - Low	Execution	
	•Maintain transport vehicles and machinery in good working order to minimize exhaust gases and noise		Execution	Contractor and NWM
	• Ensure water intended for irrigation is of acceptable quality		Execution	Contractor
	• Rapidly repair construction equipment and vehicles that produce excessive emissions of exhaust gases		Execution	Contractor
	• Maintain the emission control systems of construction equipment and vehicles		Execution	Contractor
Excavation and earthworks	• Maintain a sufficient frequency of watering of roadways during excavation works	Negative - Low	Execution	Contractor
	• Ensure the quality of water intended for irrigation		Execution	Contractor
	• Maintain the emission control systems of construction equipment and vehicles		Execution	Contractor

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
	<ul style="list-style-type: none">• Rapidly repair construction equipment and vehicles that produce excessive emissions of exhaust gases		Execution	Contractor
	<ul style="list-style-type: none">• Maintain transport vehicles and machinery in good working order to minimize exhaust gases and noise		Execution	Contractor
Civil Works	<ul style="list-style-type: none">• Maintain a sufficient frequency of watering of roadways during excavation works	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Ensure the quality of water intended for irrigation		Execution	Contractor
	<ul style="list-style-type: none">• Maintain transport vehicles and machinery in good working order to minimize exhaust gases and noise		Execution	Contractor
	<ul style="list-style-type: none">• Rapidly repair construction equipment and vehicles that produce excessive emissions of exhaust gases		Execution	Contractor
	<ul style="list-style-type: none">• Maintain the emission control systems of construction equipment and vehicles		Execution	Contractor
Final works	<ul style="list-style-type: none">• Although compact the final repositories to limit dust hazard	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Maintain sufficient frequency of watering tracks during excavation works		Execution	Contractor
	<ul style="list-style-type: none">• Prohibit heavy vehicle traffic and noisy work outside normal working hours, and areas of work during the project		Execution	Contractor
Gaseous, liquid and solid waste	<ul style="list-style-type: none">• Maintain transport vehicles and machinery in good working order to minimize exhaust gases and noise	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Maximize the use of plant barriers around the port development zone to mitigate the impact of gaseous discharges from ships		Execution	Contractor
Water				
Preliminary surveys	<ul style="list-style-type: none">• Prepare for accidental contamination (absorbent materials, stripping the soil layer reached by oil and correct disposal). Local soil contamination is a source of indirect contamination of water.	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Limit traffic to the designated footprint and active work areas		Execution	Contractor
	<ul style="list-style-type: none">• Avoid storing fuel within 100 m of water		Execution	Contractor
	<ul style="list-style-type: none">• All fuel, oil or other contaminant handling should be performed under constant surveillance to prevent spills into surface waters		Execution	Contractor
Site establishment	<ul style="list-style-type: none">• All possible precautions to be taken during the refuelling of vehicles and machinery. Accumulated hydrocarbon leaks from refuelling can generate local soil contamination and cause subsequent contamination of water by surface runoff or infiltration	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• All fuel, oil or other contaminant handling should be performed under constant surveillance to prevent spills into surface waters		Execution	Contractor

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
	<ul style="list-style-type: none">• Prepare for accidental contamination (absorbent materials, stripping the soil layer reached by oil and correct disposal). Local soil contamination is a source of indirect contamination of water.		Execution	Contractor
	<ul style="list-style-type: none">• In septic systems filter wells must be provided at the spillway, which will include a concrete wall and two size, classes (20/40 and 7/14), allowing the filtration of water discharged into the pit.		Execution	Contractor
Excavation and earthworks	<ul style="list-style-type: none">• All fuel, oil or other contaminant handling should be performed under constant surveillance to prevent spills into surface waters	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Avoid storing fuel within 100 m of water		Execution	Contractor
	<ul style="list-style-type: none">• Prepare for accidental contamination (absorbent materials, stripping the soil layer reached by oil and correct disposal). Local soil contamination is a source of indirect contamination of water.		Execution	Contractor
River diversion	<ul style="list-style-type: none">• Prepare for accidental contamination (absorbent materials, stripping the soil layer reached by oil and correct disposal). Local soil contamination is a source of indirect contamination of water.	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Avoid storing fuel within 100 m of water		Execution	Contractor
	<ul style="list-style-type: none">• Limit traffic to the designated footprint and active work areas		Execution	Contractor
	<ul style="list-style-type: none">• All fuel, oil or other contaminant handling should be performed under constant surveillance to prevent spills into surface waters		Execution	Contractor
	<ul style="list-style-type: none">• Avoid obstruction dry river beds and existing wadis during earthworks		Execution	Contractor
	<ul style="list-style-type: none">• Clean all dry river beds that have been impacted prior to project completion		Execution	Contractor
Final works	<ul style="list-style-type: none">• Prohibit stockpiling near a river or dry river bed	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Avoid obstruction dry river beds and existing wadis during earthworks		Execution	Contractor
	<ul style="list-style-type: none">• Clean all dry river beds that have been impacted prior to project completion		Execution	Contractor
Prepared and landscaping	<ul style="list-style-type: none">• Do not change the natural flow pattern	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• Avoid obstruction dry river beds and existing wadis during earthworks		Execution	Contractor
	<ul style="list-style-type: none">• Clean all dry river beds that have been impacted prior to project completion		Execution	Contractor
Marine sediments				
Dredging	<ul style="list-style-type: none">• Technical dredging and backfilling used are defined to avoid intake of turbidity	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">• The dredging technique that will be used results in limited turbidity. The dredging will be carried out using a suction hopper dredger, which is located very close to the seabed.		Execution	Contractor

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
	<ul style="list-style-type: none">The backfill material used for the construction of embankments must be devoid of fine sediments. The sediment dredging method will enable the separation of fine sediment sand.		Execution	Contractor
	<ul style="list-style-type: none">Regarding the construction of the embankment and dykes, the filling operation itself involves pumping sand from the vessel to the bottom. The position of the suction hopper close the seabed means that sand (low silt) deposits can be targeted.		Execution	Contractor
	<ul style="list-style-type: none">Daily visual monitoring by the site operators will be carried out to ensure that no pollution is dispersed into the marine environment. The introduction of geotextile curtains during the construction period was considered but was excluded because the booms would be moved out of position by the tides.		Execution	Contractor
	<ul style="list-style-type: none">Install turbidity meters connected to a warning system in case of exceeding the acceptable thresholds		Execution	Contractor
	<ul style="list-style-type: none">Monitor water transparency by Secchi disk measurements		Execution	Contractor
	<ul style="list-style-type: none">Monitor concentrations of suspended matter in the water column by water withdrawal		Execution	Contractor
	Bathymetry			
	<ul style="list-style-type: none">The impact on the shore where the project will be implemented is irreversible. Therefore measures should be designed to control and reduce additional changes in the coastline and subsequent land use.	Negative - Moderate	Execution	Contractor
	<ul style="list-style-type: none">The exact position of the shoreline will be monitored over time (beaches, bathymetry and coast morphology). This monitoring should be used to launch corrective measures should changes become apparent.		Execution	Contractor
Currents and sediment dynamics				
	<ul style="list-style-type: none">Impacts on currents and sediment dynamics are irreversible once the has been constructed and to keep the port operational. As previously, it will be necessary to monitor currents and sediment dynamics and intervene as and where corrective action becomes required.	Negative - Moderate	Execution	Contractor
Natural landscape				
	<ul style="list-style-type: none">Integrate the port equipment into the landscape.	Negative - Moderate	Execution	Contractor
	<ul style="list-style-type: none">Provide a selection of suitable plants for re-vegetation.		Execution	Contractor
	<ul style="list-style-type: none">Conduct regular monitoring of irrigation of plants;		Execution	Contractor
	<ul style="list-style-type: none">Screen civil works using vegetation to minimise visual impact.		Execution	Contractor
	<ul style="list-style-type: none">Rehabilitate and landscape the project area to blend in with the existing visual character of the wider area.		Execution	Contractor

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
Flora				
Preliminary surveys	• Avoid unnecessary clearing of vegetation	Negative - Low	Execution	Contractor
	• Be cognisant of the value and role of local vegetation		Execution	Contractor and NWM
Site establishment	• Avoid clearing beyond the marked boundaries defining the minimum area required for the execution of the work;	Negative - Low	Execution	Contractor
	• Be cognisant of the value and role of local vegetation		Execution	Contractor
	• Appoint designated areas for vehicle parking and refuelling to prevent oil contamination of soil and possible impacts on micro-organisms.		Execution	Contractor
	• Do not allow vehicles to access areas not affected by construction		Execution	Contractor
	• After construction work is completed re-vegetate the area using indigenous plants		Execution	Contractor
	• Program the periods of work outside the periods of migration and nesting birds.		Execution	Contractor
	• Monitor and inventorise plant species in the surrounding vegetation in spring and summer.		Execution	Contractor
	• Changes in the distribution of subtidal habitats must trigger further investigations and suitable corrective action.		Execution	Contractor
	• Maintain the vegetation that is re-established after completion of construction		Execution	Contractor and NWM
Transport of materials and movement of machines	• Provide frequent watering of tracks to limit dust hazard that abyss leaf structure of trees and shrubs along the runways leading to quarries	Negative - Low	Execution	Contractor
Dredging	• Ensure that the dumping of dredged material does not restrict the fecundity of marine flora.	Negative - Low	Execution	Contractor
Excavation and earthworks	• Avoid clearing beyond the marked boundaries defining the minimum area required for the execution of the work;	Negative - Low	Execution	Contractor
	• Be cognisant of the value and role of local vegetation		Execution	Contractor
	• Appoint designated areas for vehicle parking and refuelling to prevent oil contamination of soil and possible impacts on micro-organisms.		Execution	Contractor
	• Do not allow vehicles to access areas not affected by construction		Execution	Contractor
	• Program the periods of work outside the periods of migration and nesting birds.		Execution	Contractor
	• Changes in the distribution of subtidal habitats must trigger further investigations and suitable corrective action.		Execution	Contractor
River diversion	• Avoid clearing beyond the marked boundaries defining the minimum area required for the execution of the work;	Negative - Low	Execution	Contractor
	• Be cognisant of the value and role of local vegetation		Execution	Contractor

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
	• Appoint designated areas for vehicle parking and refuelling to prevent oil contamination of soil and possible impacts on micro-organisms.		Execution	Contractor
	• Do not allow vehicles to access areas not affected by construction		Execution	Contractor
	• Program the periods of work outside the periods of migration and nesting birds.		Execution	Contractor and NWM
	• Changes in the distribution of subtidal habitats must trigger further investigations and suitable corrective action.		Execution	Contractor and NWM
Final works	• After construction work is completed re-vegetate the area using indigenous plants	Negative - Low	Execution	Contractor
Fauna				
See matrix of impacts in the EIS	• Avoid clearing beyond the marked boundaries defining the minimum area required for the execution of the work;	Negative - Low	Execution	Contractor
	• Appoint designated areas for vehicle parking and refuelling to prevent oil contamination of soil and possible impacts on micro-organisms.		Execution	Contractor
	• Monitor physical and chemical water quality.		Execution	Contractor
	• Ensure that the dumping of dredged material does not restrict the fecundity of marine flora.		Execution	Contractor
	• Water unpaved roads to the quarries to limit the dust hazard to tree and shrub leaves.		Execution	Contractor
	• Monitor and inventorise plant species in the surrounding vegetation in spring and summer.		Execution	Contractor
	• Monitor and inventorise surrounding fauna (birds and fish) in the spring and summer.		Execution	Contractor and NWM
Wetlands & Protected Areas	• Avoid dredging during strong currents to limit the transport of marine sediments.	Negative - Low	Execution	Contractor and NWM
Human environment				
Population and dwellings				
	• Develop a communication plan to inform the public of the work (time, location, duration) using <i>inter alia</i> warning signs;	Negative - Low	Execution	Contractor and NWM
	• Integrate the comments people registered at the public inquiry into all project activities;	Negative - Low	Execution	NWM
	• Ensure the safety of occupants bordering the work area by applying appropriate measures (fence, monitoring);	Negative - Low	Execution	Contractor
	• Provide a work schedule that will avoid disturbing the lifestyle of the population;	Negative - Low	Execution	Contractor and NWM

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
	• Implement appropriate measures to reduce the nuisance caused by the work;	Negative - Low	Execution	Contractor and NWM
	• Draw up agreements with neighbouring owners and temporary occupants of plots and meet the commitments of the agreement;	Negative - Low	Execution	Contractor and NWM
	• Ensure that the work does not present safety risks to workers and/or the neighbouring population;	Negative - Low	Execution	Contractor and NWM
	• Notify the authorities concerned during interruption of services and take appropriate measures to reduce downtime to a minimum for residents of the affected area;	Negative - Low	Execution	Contractor and NWM
	• Use road sign warnings (traffic lights, signs, etc.);	Negative - Low	Execution	Contractor
	• Respect the community charter;	Negative - Low	Execution	Contractor and NWM
	• Do not block access to the village "douars";	Negative - Low	Execution	Contractor
	• Do not hamper areas with a specific use (access, pedestrian crossings, etc.);	Negative - Low	Execution	Contractor
	• Minimize the accumulation of surplus excavated material and ensure that materials is moved promptly to its final destination	Negative - Low	Execution	Contractor
	• Avoid storing machinery on surfaces other than those defined mainly for work, and provide a clear identification of the boundaries of these storage areas;	Negative - Low	Execution	Contractor
	• Clean the routes used by transport vehicles and machinery in order to remove any accumulation of dirt and other debris materials;	Negative - Low	Execution	Contractor
	• Ensure compliance with safety rules (marking of excavated areas, use of PPE, signalling)	Negative - Low	Execution	Contractor
	Health, safety and security			
Site establishment	• Use appropriate signalling to inform users of road works, and transport of loose materials,	Negative - Low	Execution	Contractor
	• Inform drivers and operators of machinery safety standards and enforce compliance at all times;		Execution	Contractor
	• Prepare and implement a site emergency plan to deal with a work accident, and provide posters with the names and phone numbers of officials and how to alert them to an accident, in the view of workers.		Execution	Contractor
	• Keep a supply of absorbent materials, and properly labelled, watertight containers for receiving oil residues and waste spills. After use, absorbent materials must be suitably treated and disposed.		Execution	Contractor
	• Provide dedicated storage for contaminants and equip such storage with safety devices (fire extinguisher, impermeable floor, etc.)		Execution	Contractor
Noise				

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
Transport of materials and movement of machines	<ul style="list-style-type: none">Prohibit heavy vehicle traffic and noisy work outside normal working hours, and work areas during the project;	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">Minimize excessive noise levels;		Execution	Contractor
	<ul style="list-style-type: none">Maximize the use of plant barriers around the port development zone, including the use of trees and green walls to mitigate noise generated during construction.		Execution	Contractor
	<ul style="list-style-type: none">Promote the use of soundproof equipment		Execution	Contractor
Excavation and earthworks	<ul style="list-style-type: none">Prohibit heavy vehicle traffic and noisy work outside normal working hours, and work areas during the project;	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">Minimize excessive noise levels;		Execution	Contractor
	<ul style="list-style-type: none">Maximize the use of plant barriers around the port development zone, including the use of trees and green walls to mitigate noise generated during construction.		Execution	Contractor
	<ul style="list-style-type: none">Promote the use of soundproof equipment		Execution	Contractor
Civil works	<ul style="list-style-type: none">Minimize excessive noise levels;	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">Maximize the use of plant barriers around the port development zone, including the use of trees and green walls to mitigate noise generated during construction.		Execution	Contractor
	<ul style="list-style-type: none">Promote the use of soundproof equipment		Execution	Contractor
			Execution	Contractor
Socio- economic activity and employment				
Cessation of fishing activities	<ul style="list-style-type: none">Plan alternative fishing areas for fishermen of the four settlements of the Betoja Bay	Negative - Low	Execution/operation	Contractor and NWM
Lack of fisheries infrastructure	<ul style="list-style-type: none">Provide a consolidated replacement beach landing facility for the fishermen	Negative - Low	Execution/operation	Contractor and NWM
Creating direct employment and indirect jobs	<ul style="list-style-type: none">The project is expected to create direct and indirect jobs during the different phases of the project	Positive-Moderate	Execution/operation	Contractor and NWM
Infrastructure and equipment				
Transport of materials and movement of machines	<ul style="list-style-type: none">Prohibit on public roads and bridges any vehicle or equipment whose gross vehicle weight (MTC) exceeds permissible limits;	Negative - Low	Execution	Contractor
	<ul style="list-style-type: none">Regularly check the condition of the road and perform maintenance as required;		Execution	Contractor
	<ul style="list-style-type: none">Clean the roads used by construction vehicles to limit dust in dry weather and mud in wet weather ;		Execution	Contractor
	<ul style="list-style-type: none">Inform drivers of the need to use only designated access to the site		Execution	Contractor
Archaeology and Heritage				

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
Excavation and earthworks	<ul style="list-style-type: none">Notify the relevant services of the city of NADOR in the case of chance archaeological finds during excavation	Negative - Low	Execution	Contractor and NWM
OPERATIONS PHASE				
Biophysical environment				
Air				
Sea and road traffic and the presence of machinery on the site	<ul style="list-style-type: none">Maximize the use of plant barriers around the port development zone, to mitigate the impact of gaseous emissions from ships;	Negative - Low	Operations	NWM / Operator
	<ul style="list-style-type: none">Check the serviceability of engines, machines and cranes operating at the port to ensure atmospheric emissions do not exceed emission limits, vehicles are to have technical inspection certificates.		Operations	NWM / Operator
	<ul style="list-style-type: none">Plan and develop an air quality monitoring network,		Operations	NWM
	<ul style="list-style-type: none">Provide fixed and mobile air quality monitoring stations. The parameters to be monitored would be CO, NO₂, SO₂, O₃ and PM (total and PM₁₀). This surveillance network should be developed to control the points where air pollution concentrations are highest. It is assumed that these points will be in the port area and areas of high concentrations of industrial activity and traffic. Similarly, the air quality monitoring network will require a station in a non-polluted areas to provide a measure of background air quality. The exact location of the stations should be determined using a specific study.		Operations	NWM
	<ul style="list-style-type: none">Develop a dust management programme that includes preventive measures such as wetting transportation routes, installation of pipes for unloading materials at heights greater than 2 m, the use of screens and hopper deflectors, and the use of tarpaulins for covering the loads during transport.		Operations	NWM
Noise				
Increased noise because of machinery on the site	<ul style="list-style-type: none">Install systems for noise reduction. Interventions can be noise barriers, ridges, soundproofing housing, isolation of noise sources, changing the distribution of traffic, limiting activities at different times and the prohibition of noisy activities.	Negative - Low	Operations	NWM / Operator
Geomorphology and bathymetry, currents and sediment dynamics				
Impact on local dynamics	<ul style="list-style-type: none">The exact position of the shoreline will be monitored over time (beaches, bathymetry and coast morphology). This monitoring should be used to launch corrective measures should changes become apparent.	Negative - Low	Operations	NWM / Operator
Water				

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
Port activities and discharge into the natural environment	• Surface runoff will be drained by networks of underground pipes and drains that lead to oil separators before reaching the outlets to the natural environment.	Negative - Moderate	Operations	NWM
	• The port will have all the modern facilities for the recovery of wastewater from moored ships (removable or fixed pumps pumps , ...);		Operations	NWM
	• Establish adequate sanitary waste treatment at the port to avoid direct discharge into the natural environment, particularly in the marine environment;		Operations	NWM
Spills				
Oil spills in the port and its annexes	• Clarify the roles and missions of officials in charge of the port to manage oil pollution or other chemicals posing a risk to the marine and terrestrial environment of the port.	Negative - Moderate	Operations	Operator
	• Define a pollution control organization to enable rapid response appropriate to the magnitude of the crisis and to the likely consequences of the incident and the interface with other plans particularly the national contingency plan fight against pollution.		Operations	Operator
	• Define first response measures to be taken upon discovery of pollution.		Operations	Operator
	• Develop strategies to deal with different accident scenarios.		Operations	Operator
	• Identify the human and material resources available and provide information on the processes of simulation and training of staff responsible for pollution control.		Operations	Operator
	• Clarify the mechanism for closing out the incident.		Operations	Operator
Biological environment				
Terrestrial flora and fauna				
	• Follow up plantation clearing trees from those who have been removed.	Negative - Low	Operations	NWM / Operator
Marine flora and fauna				
Disturbance of marine life because of maritime traffic	• Liaise with the relevant departments to implement a monitoring plan.	Negative - Low	Operations	NWM / Operator
	• Changes in the distribution of subtidal habitats must trigger further investigations and suitable corrective action.		Operations	NWM / Operator
	• Monitor water quality and sediment during the operational phase in order to ensure the health of the aquatic environment .		Operations	NWM / Operator
Social environment				
Health, safety and security				

Source of Impact	Mitigation/Compensation	Impact significance	Implementation schedule	Responsible
Risk of work accidents	<ul style="list-style-type: none"> Promote employee awareness of the risk of accidents . 	Negative - Moderate	Operations	NWM / Operator
	<ul style="list-style-type: none"> Maintain a strict PPE (helmet, gloves , etc.) regime in the port at all times. 		Operations	NWM / Operator
	<ul style="list-style-type: none"> Inform drivers and operators of machinery safety standards and enforce compliance 		Operations	NWM / Operator
	<ul style="list-style-type: none"> Prepare and implement a site emergency plan to deal with a work accident, and provide posters with the names and phone numbers of officials and how to alert them to an accident, in the view of workers. 		Operations	NWM / Operator
	<ul style="list-style-type: none"> Provide dedicated storage for contaminants and equip such storage with safety devices (fire extinguisher, impermeable floor, etc.) 		Operations	NWM / Operator

Annexure 2 - List of environmental and social studies available

Studies conducted in the framework of the Moroccan regulatory process

- Environmental Impact Assessment (EIA) prepared by the NOVEC group – ‘TME’ under Moroccan law details the environmental and social situation of reference in the project area, as well as the impact assessment; The EIA is available in final version now having been submitted to the public inquiry required by Moroccan law;
- Non Technical Summary of the EIA prepared in French and Arabic for the publication of the EIA as part of the public inquiry in August 2014;
- The Environmental Action and Monitoring Plan (EAMP) prepared by NWM from the EIA defines mitigation, monitoring and follow-up undertakings by the NWM Project proponent to the Moroccan administration; it is submitted as a basis to the Environmental Acceptability Decision which constitutes the environmental permit issued by the Moroccan government to the Project; This document is available in draft form and has been submitted by NWM administration in support of its application for environmental acceptability; it is subject to change following comments by the administration;

Studies conducted in the framework of the EBRD process

- This Non Technical Summary is based on the above documents and provides a brief summary of the key components of all the documents and key findings. Readers wanting detail can find the full reports on the NWM and EBRD websites.
- The Environmental and Social Action Plan (ESAP) is a document prepared to meet the environmental and social requirements of the EBRD that are not covered by Moroccan law, and therefore not covered by the EIA; This document was prepared by SE Solutions for approval by the EBRD and NWM;
- The Stakeholder Engagement Plan (SEP) specifies the public consultation procedures and disclosure of documents throughout the life of the Project in accordance with the requirements of the EBRD's PR10. This document was prepared by SE Solutions for approval by the EBRD and NWM;
- The Compensation and Livelihood Restoration Framework (LAF) addresses impacts on people and property (economic displacement), and in particular specifies the compensation terms of these impacts in accordance with the requirements of EBRD's PR5; This document was prepared by SE Solutions for approval by the EBRD and NWM.

Other studies used

Many other studies have been prepared by NWM that contain useful data for environmental and social due diligence, including the following:

- Project Nador West Med - Diagnosis and environmental assessment of the forest area and the coastal and marine environment, Uniconsult - CREOCEAN June 2011;
- Technical studies of the port of Nador West Med - Mission: 2.1 - Establishment of the ground plane - Grouping CID - LPEE, June 2014;
- Technical studies of the port of Nador West Med - Mission: 2.2 - Establishment of the preliminary design - Grouping CID - LPEE, April 2014;
- Socio-economic study of Nador West Med project, in October 2014;
- Socio-economic survey of people affected by the project Nador West Med, Team Morocco, in December 2014;
- Project Nador West Med Diagnosis and environmental assessment of the forest area and the coastal and marine environment Mission I. Initial state. Terrestrial environment. Forestry and socio-economic areas, CREOCEAN, March 2011;
- Study hydro sedimentation - Harbour Nador West Med - Preliminary analysis of siltation risk due to the contributions of the Oued Kert - r1a Report - ARTELIA, September 2014;
- Study hydro sedimentation - Harbour Nador West Med - Risk Analysis in an evolving coastline - Report r1b - ARTELIA, July 2014;