



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT

TYPE OF TRUST FUND: SCCF

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PART I: PROJECT INFORMATION

Project Title: Enhancing the climate resilience of the Moroccan ports sector			
Country(ies):	Morocco	GEF Project ID: ¹	
GEF Agency(ies):	EBRD	GEF Agency Project ID:	
Other Executing Partner(s):	National Port Agency (ANP - Agence National de Ports)	Submission Date:	8 August 2014 Resubmitted 22 August 2014
GEF Focal Area (s):	Climate Change	Project Duration (Months)	48
Integrated Approach Pilot	IAP-Cities <input type="checkbox"/> IAP Commodities <input type="checkbox"/> IAP-Food Security <input type="checkbox"/>		Corporate Program: SGP <input type="checkbox"/>
Name of Parent Program	(if applicable):	Agency fee:	588,306 (not including PPG agency fee of 19,000)

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

Objectives/Programs (Focal Areas, Integrated Approach Pilot, Programs)	Trust Fund	(in \$)	
		GEF Project Financing	Co-financing
CCA-1 Reduce the vulnerability of people, livelihoods, physical assets and natural systems to the adverse effects of climate change	SCCF-A	6,192,694	46,900,000
CCA-2 Strengthen institutional and technical capacities for effective climate change adaptation	-	0	1,500,000
CCA-3 Integrate climate change adaptation into relevant policies, plans and associated processes	-	0	500,000
Total Project Cost		6,192,694	48,900,000

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: To support the climate resiliency of Morocco's ports in both the immediate and longer-term through capacity development to introduce best international practice in the Moroccan ports sector's strategy, operations, management and monitoring; and investment in climate-resilient upgrades and/or new port facilities.

Project Component	Financing Type ³	Project Outcomes	Trust Fund	(in \$)	
				GEF Project Financing	Co-financing
Component 1: Capacity development for reducing vulnerability to climate change	-	Strengthened institutional capacity for effective climate change adaptation measures in port infrastructure	-	0	2,000,000
Component 2: Building structural climate resiliency features in port facility infrastructure	Inv	Climate resilient best practice in adaptation technology and infrastructure scaled up Reduced vulnerability of port infrastructure to the adverse effects of climate change	SCCF-A	6,192,694	46,397,000
Subtotal				6,192,694	48,397,000
Project Management Cost (PMC) ⁴				0	503,000

¹ Project ID number will be assigned by GEFSec and to be entered by Agency in subsequent document submissions

² When completing Table A, refer to the GEF Website, ² When completing Table A, refer to the GEF Website, [Focal Area Results Framework](#) which is an *Excerpt from GEF-6 Programming Directions*.

³ Financing type can be either investment or technical assistance

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal areas based on focal area project financing amount in Table D below.

Project Component	Financing Type ³	Project Outcomes	Trust Fund	(in \$)	
				GEF Project Financing	Co-financing
Total Project Cost				6,192,694	48,900,000

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Please include confirmed co-financing letters for the project with this form.

Sources of Co-financing	Name of Co-financier	Type of Co-financing	Amount (\$)
GEF Agency	EBRD	Hard loan	44,667,000
GEF Agency	EBRD	In-kind	2,233,000
GEF Agency	Technical Cooperation Donor Trust Funds	Grant	2,000,000
Total Co-financing			48,900,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES) AND THE PROGRAMMING OF FUNDS^(A)

GEF Agency	Trust Fund	Country Region/ Global	Focal Area	Programming of Funds	(in \$)		
					Grant Amount (a)	Agency Fee (b) ^{b)}	Total c=a+b
Total GEF Resources							

a) No need to fill this table if it is a single Agency, single Trust Fund, single focal area and single country project.

b) Refer to the [Fee Policy for GEF Partner Agencies](#)..

E. PROJECT PREPARATION GRANT (PPG)⁵

Is Project Preparation Grant requested? Yes No If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

GEF Agency	Trust Fund	Country/ Regional/Global	Focal Area	Programming of Funds	(in \$)		
					PPG (a)	Agency Fee ⁶ (b)	Total c = a + b
EBRD	SCCF-A	Morocco	Climate Change		200,000	19,000	219,000
Total PPG Amount					200,000	19,000	219,000

⁵ On exceptional basis, PPG amount may differ upon detailed discussion and justification with GEFSEC

⁶ PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁷

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
1. Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	<i>(Enter number of hectares)</i>
2. Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	<i>(Enter number of hectares)</i>
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy, legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins	<i>(Enter number of freshwater basins)</i>
	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	<i>(Enter percent of fisheries, by volume)</i>
4. Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	<i>(Enter number of tons)</i>
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS, mercury and other chemicals of global concern	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	<i>(Enter number of tons)</i>
	Reduction of 1000 tons of Mercury	<i>(Enter number of tons)</i>
	Phase-out of 303.44 tons of ODP (HCFC)	<i>(Enter number of tons)</i>
6. Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and mainstream into national and sub-national policy, planning financial and legal frameworks	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	<i>(Enter number of countries)</i>
	Functional environmental information systems are established to support decision-making in at least 10 countries	<i>(Enter number of countries)</i>

⁷ Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the [GEF-6 Programming Directions](#), will be aggregated and reported during mid-term and at the conclusion of the replenishment period.

PART II: PROJECT JUSTIFICATION

A. PROJECT OVERVIEW

A.1. Project description

A.1.1 Global environmental problems, root causes and barriers that need to be addressed

1. With over 80 percent of the volume of world trade carried by sea, international shipping and ports are at the heart of international trade and global supply chains. Considered critical infrastructure assets, ports serve as catalysts for economic growth and development. They play a key role in international trade, create jobs, generate wealth and value as well as promote the expansion of related and nearby cities and industries.⁸ Ports are also exposed to the risk of adverse climate change impacts. Climate change is projected to cause sea level rise; to influence the frequency and severity of storms, storm surge events and extreme wave and wind conditions; and to cause shifts in precipitation, hydrology and sedimentation patterns, all of which could cause negative impacts on ports.
2. While climate change impacts will vary depending on local conditions, ports are expected to be directly and indirectly affected by climatic changes. Direct impacts affect infrastructure, operations and services, and are expected to have significant effects on ports and other types of coastal infrastructure, especially since often such infrastructure consists of long-lived, fixed assets with a useful lifespan of several decades. Possible direct impacts affecting port infrastructure include inundation, changed erosion patterns, collapse of steep slopes, changed siltation patterns, and landslides (see Annex A for a list of climate change impacts that can be expected for different types of infrastructure). These impacts will likely have varying degrees of economic and operational impacts upon ports including: disruption to port and shipping operations; disruptions to international and national trade; disruption to supply chains; and impacts on broader economic activity.
3. Indirect effects of climate change upon port operations and the demand for port services are caused by the impacts of climate change upon other sectors. Indirect effects may include climate change effects on international trade, investment decisions, agricultural production, demographics, energy exploration and consumption, forestry and fishing activity.⁹ Further, given the links between ports and their hinterland and the concentration of populations, assets and services associated with ports, as well as the size and value of built infrastructure, climate change impacts may have serious broader implications, especially in regions with low adaptive capacity.¹⁰
4. Morocco's Second Communication to the UNFCCC (2010) notes the following issues in connection with the coastal zone:
 - a. The coastal zone is vulnerable to accelerated sea level rise, which will affect coastal infrastructure through flooding and coastal erosion
 - b. Vulnerable sectors include maritime transport and fisheries
 - c. Adaptation to sea level rise should be integrated in all aspects of planning in coastal areas
 - d. In the medium term, it will be necessary to raise the level of breakwaters in ports (as identified specifically for the ports of Tangier and Saidaia)
 - e. In the long term, institutional responses should be developed for managing coastal areas, taking into account the impacts of climate change
 - f. The draft law on the coastal zone should be formulated in such a form that it will enable adaptation to climate change.
5. A recent example of the type of events that will become more frequent in Morocco as sea level rises is the event of the night of 6 to 7 January 2014, when a storm swell caused waves with heights that exceeded the levels for which ports have been designed, causing damage to infrastructure and disrupting

⁸ United Nations Conference on Trade and Development 2011 Ad Hoc Expert Meeting on: Climate Change Impacts and Adaptation: A Challenge for Global Ports, available at: http://unctad.org/en/docs/dtl1b2011d2_en.pdf

⁹ Ibid

¹⁰ Ibid

port operations in many locations¹¹. The damage observed at various locations between Tangier and Laâyoune included: damage to dikes and guard walls; damage to piers, jetties, pavements and bollards; and damage to other infrastructure in areas reached by the waves such as fencing, electric installations and buildings.

6. Given the strategic role of Morocco's ports in linking the Moroccan economy to wider markets through the international trading system, adapting ports to the impacts of climate change and building their resilience is imperative. Further, due to the long service life of port infrastructure, effective adaptation requires establishing approaches and practices early to avoid locking into vulnerable technologies and infrastructure, and to enable long-lived port infrastructure and assets to cope with shifts in climatic conditions that may occur over a timescale of many decades.¹²

Barriers

7. Morocco's Second National Communication characterized the following as barriers to effective adaptation to climate change of the broader coastal zone: a lack of understanding of the impact that sea level rise will have on coasts and coastal infrastructure; a lack of legislation and regulation that clarifies the responsibility of the different authorities with respect to adaptation; Integrated Coastal Zone Management is currently not practiced; and there is a great lack of all types of oceanographic data needed to plan for future climate change impacts. The barriers to adoption of adaptation measures specifically at Moroccan ports are significant, and may be categorized as follows:
 - (i) **Awareness and information barriers** – Lack of awareness, and lack of specific and timely information on risks and vulnerability related to climate change, and on climate risk reduction processes at the national and local levels, are among the most pressing barriers to adaptation to climate change. The “Ad Hoc Expert Meeting on Climate Change Impacts and Adaptation: a challenge for global ports” (UNCTAD, 2011) found that there is a general disconnect between scientific knowledge and the decision making process. This is particularly the case in Morocco. In order to overcome this barrier information must be dispersed more widely while trying to the extent possible to address uncertainties so that messages are as unambiguous as possible.
 - (ii) **Institutional barriers** – Low institutional capacity exists to integrate adaptation and climate change risk reduction into infrastructure planning and strategy, and construction by port authorities. Authorities lack adaptive planning capacity; timely inputs on climate change; and feedback on experiences from cities facing similar situations. The ANP, port authorities and operators face several additional barriers including a lack of short term options to reduce risks, and adaptation options that may be outside of their control such as the improvement of storm water systems.
 - (iii) **Technical barriers** – Current plans and investments do not consider the long-term implications of climate change, therefore, the design of infrastructure overlooks climate change-related limitations and impacts. This is in part caused by limited technical knowledge of available adaptation approaches and technologies, which result in infrastructure that is highly vulnerable and lacks the resiliency to respond to climatic stressors. To enable proactive involvement of the Moroccan ports sector in climate change adaptation activities, short to medium term projections of localised impacts and their effects on business and the operations of ports are necessary. However, climate models typically focus on changes in temperature, precipitation and sea level over the long term. This may be overcome by performing a vulnerability assessment to identify potential exposure with greatest financial consequences, followed by using the best science to evaluate the likelihood of such risks.
 - (iv) **Financial barriers** – After the identification of adaptation measures a number of financial barriers may be faced. These include tradeoffs between short-term profitability and implementation of measures; the need for costly infrastructure such as raising the height of port facilities; and difficulty with financing necessary measures.

¹¹ Impacts de la Houle Exceptionnelle du 06-07 Janvier 2014 sur les Infrastructures Portuaires, report by the Ministry of Equipment, Transport and Logistics, March 2014

¹² Von Storch, H., G. Gonnert and M. Meine, 2008. “Storm surges—An option for Hamburg, Germany, to mitigate expected future aggravation of risk”. *Environmental Science and Policy*, 11, 735-742.

A.1.2 The baseline scenario and any associated baseline projects

8. External trade is an important driver of economic and social development for Morocco. Due to the country's geographical location, 98% of external trade is maritime. With its long coastline, Morocco also has a large number of ports, ranging in type and size from small artisanal fishing sites to sites specialised for chemicals and fuels, up to the largest port in Morocco, that of Casablanca, which features a commercial port, a fishing port, a marina and shipyards. The next largest ports in terms of traffic are Jorf Lasfar and Mohammedia (see Figure 1). In 2010 total activity at the ports was over 92 million tonnes, with 24,526 vessel calls. This included phosphate exports, imports of fuels, vehicles and grains as well as container transport. Over 3.7 million passengers travelled through the ports, as well as a significant number of cruise ships. The fishing sector is a major economic sector in the country, responsible for the livelihoods of over 3 million Moroccans.

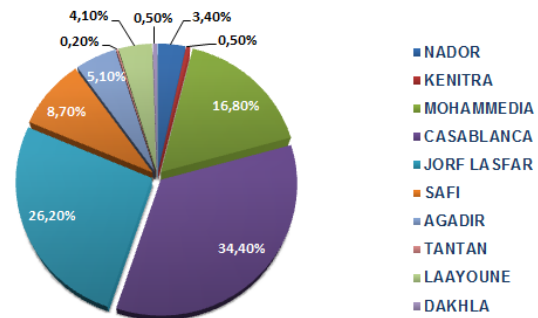


Figure 1 – Traffic breakdown by port in 2012 (ANP, www.anp.org.ma)

9. The Ministry of Equipment and Transport has developed the *National Port Strategy to 2030 (La stratégie portuaire nationale à l'horizon 2030)*. This Strategy describes a clear vision of the development of Moroccan ports in the period covered, with planned investments of 75 billion Moroccan Dirhams (approximately USD 9 billion). Climate change impacts are, however, not taken into account in the strategy. This means that significant investments could be lost as a result of climate change impacts unless adaptation is taken into account in the plans. Currently, the country has 62 km of seawalls, 49 km of quays and 1850 ha of protected water bodies on which the smooth operation of the country's maritime sector depends, none of which have been examined for their potential vulnerability to the impacts of climate change. The investments have not been pre-planned but will be adapted and adjusted in view of developments, which opens an opportunity for adding consideration of adaptation into planning.
10. Morocco has a number of national sectoral strategies whose plans call for expansion of the ports sector in the coming years due to, for instance, increased import of coal, liquid fuels and natural gas, growing phosphate exports, growth in trade and in fisheries, and the construction of cruise terminals and marinas. Together these plans would lead to a growth in traffic by a factor of 3 to 4 over 20 years. These plans are reflected in the National Port Strategy. Financing of the plans will be by the State, port agencies or operators under concessions or public-private partnerships.
11. The National Ports Agency (ANP - Agence National de Ports) is the authoritative and regulatory body of the Moroccan port system established by Law 15-10, under technical supervision of the Ministry of Equipment and Transport. It is responsible for 33 ports, with the only port not under its supervision being Tanger Med. The ANP is planning to invest more than USD 350 million in Morocco's ports over the 2011-2015 period, with an eye towards improving both their logistical competitiveness and their environment (terminals, access to the sea and land etc.) by adapting and modernizing basic infrastructure such as channels and docks, and by increasing port capacities. One of ANP's strategic priorities is to guarantee safety, security, and sustainable development in the ports. ANP pursues a policy oriented towards sustainable development and a commitment to ongoing progress in pollution prevention.
12. Moroccan legislation illustrates the importance attached to sustainable management of the coastal zone. Key legal instruments include:
- Morocco has ratified the Integrated Coastal Zone Management Protocol, thus ratifying the full set of legal instruments adopted in the framework of the Mediterranean Action Plan, which is based on the Barcelona Convention and its Protocols
 - The draft law on coastal protection and development establishes a setback zone of 100 meters for construction near the sea (2012).

13. The EBRD is planning to invest in a number of ports in Morocco. It will provide loans for capital expenditures for equipment, upgrades and new construction in ports, following its investment plan and according to eligibility criteria, and a list of eligible technologies and measures. However, in the absence of SCCF support, the EBRD's Morocco ports investment might be vulnerable to climate change impacts and therefore not contribute to overall national climate resilience.
14. The baseline investments will be in line with the National Ports Strategy. This strategy will be implemented taking the following into account:
 - a. The development of sectoral strategies (for instance future decisions on the establishment of new infrastructure)
 - b. The development of demand for port services
 - c. New opportunities that may arise for the sector.
15. The location and specifics of baseline investments will be in response to the ANP's business needs. The investments will be in those ports identified by ANP as being nationally most important and in which investments will lead to the greatest benefits to the wider economy. The EBRD will work together with ANP to prioritise the investments, taking into account the interests of both ANP and the country of Morocco as a whole and anticipates that the first such investment will proceed within a 24 month horizon.
16. The EBRD's project cycle will be followed when identifying baseline investments. This project cycle consists of the following stages up to signing the loan:
 - a. Concept review: The EBRD's Operations Committee (OpsCom) approves the project concept overall structure. At this stage, the EBRD and the client sign a mandate letter, which outlines the project plan, development expenses and responsibilities
 - b. A final review is performed after the basic business deal has been negotiated and all investigations have been substantially completed
 - c. Board review: The project is presented to the Board of Directors for approval by the EBRD President and Operations team
 - d. Signing: The EBRD and the client sign the deal and it becomes legally binding.
17. An example of the type of project for which EBRD financing might be considered is the major works in progress at the port of Casablanca. The purpose is to meet the dual objectives of ongoing development and smooth integration of the port into the urban environment. The flagship project is the construction of a new container terminal, and the construction of a shipyard and cruise terminal in the port of Casablanca has been announced by ANP. ANP identified a lack of shipyards in the region and after performing technical and financial feasibility studies decided to construct a new shipyard as part of the redevelopment of the old port of Casablanca and the expansion of the port's activities. The construction of a 220m dry dock and all associated infrastructure is planned.
18. Another example of baseline projects in the Moroccan ports sector is the construction of completely new ports, of which a number are planned. One such project is the port of Nador West Med, which is planned as a large deep-water port for both container and bulk shipping with an associated industrial area. The first phase of development of this port should be commissioned in 2019 with an initial capacity of 3 million TEU (twenty-foot equivalent units), 25 million tonnes of oil and 7 million tons of coal.
19. None of the currently planned development in the ports sector in Morocco have considered the impacts of climate change and the need to plan for adaptation. This means that, in the baseline, these developments will be vulnerable to the impacts of climate change and will not contribute to the climate resilience of the Moroccan economy.
20. Other relevant initiatives with which coordination and collaboration will be sought include the following ongoing GEF projects:
 - a. *'Mainstreaming climate change in the National Logistics Strategy and Roll-Out of Integrated Logistics Platforms'* (UNDP, ongoing), which focuses on mitigation of land transport emissions, but will include activities in the planned 'logistics platforms' (multi-modal freight centres), some of which are associated with ports.
 - b. The project *'MED: Integrated Coastal Zone Management - Mediterranean Coast'* (IBRD, ongoing) is a project under the International Waters focal area that supports ICZM in selected areas of Morocco's Mediterranean coast (Lake Nador and Moulouya).

- c. One project in Morocco funded by the SCCF is ongoing: *'Increasing productivity and adaptive capacities in mountain areas of Morocco (IPAC-MAM)'* (IFAD).
- d. The GEF project *'Mainstreaming Global Environment Aspects in the planning and monitoring processes of the National Human Development Initiative (NHDI) in Morocco'* (UNDP) focuses on the environmental aspects in the fight against poverty, which is one of the Moroccan Government's priorities.

A.1.3 The proposed alternative scenario, with a brief description of expected outcomes and components of the project

Objective of the SCCF Project

21. The objective of the proposed SCCF project is to support the climate resiliency of Morocco's ports in both the immediate and longer-term through capacity development to introduce best international practice in the Moroccan ports sector's policy, strategy, management and monitoring; and investment in climate-resilient upgrades and/or new port facilities. Through this proposed SCCF-funded project, the EBRD, the Moroccan authorities and selected port operators will work together to build adaptive capacity to help ensure that climate change considerations are fully mainstreamed into port infrastructure, operations and management. The project takes an innovative, holistic approach to promoting climate resiliency of Morocco's ports including addressing capital investment, institutional strengthening, strategy development, training and monitoring needs. Overall, the project is designed to reduce the expected socio-economic losses associated with climate change and variability.

Project Outcomes and Components

22. To meet the proposed project objective, the following outcomes are sought:
- (i) Strengthened institutional capacity for effective climate change adaptation measures in port infrastructure
 - (ii) Climate resilient best practice in adaptation technology and infrastructure scaled up
 - (iii) Reduced vulnerability of port infrastructure to the adverse effects of climate change.
23. The project will be implemented through two closely related Components described below, which will proceed in parallel.

Component 1. Capacity development for reducing vulnerability to climate change

Component costs: USD 0 million requested from the SCCF and USD 2,000,000 from EBRD Technical Cooperation Donor Trust Funds as co-financing

24. Component 1's objective is to strengthen the institutional and technical capacity for effective climate change adaptation in port infrastructure. This will be achieved through integration of climate change adaptation into port sector management. Institutional and technical capacities will be strengthened to identify, prioritise, implement, monitor and evaluate adaptation strategies and measures. Awareness of climate change impacts, vulnerabilities and adaptation will be increased. The relationship between outputs of Component 1 is shown in Figure 2, with details provided below.

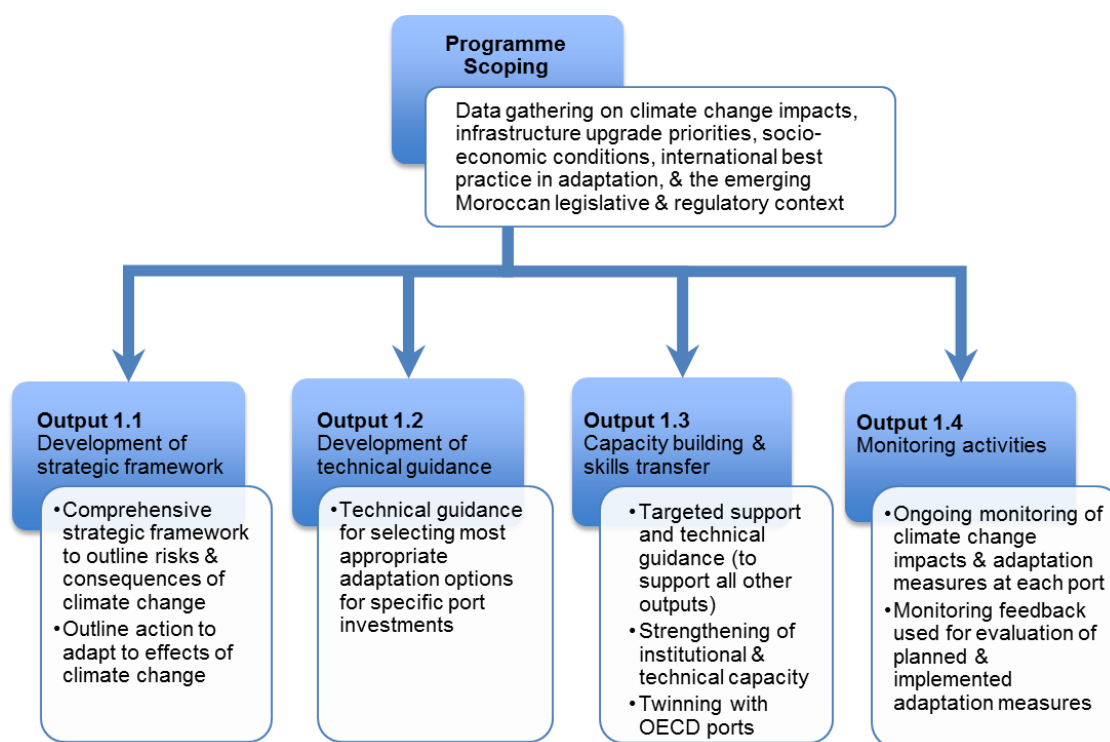


Figure 2 – Component 1’s outputs

25. During the full project development phase, funded by the PPG, project scoping will be undertaken to prepare for further activities by gathering information on climate change impacts, infrastructure upgrade priorities and socio-economic conditions at the local level in order to support informed decision-making and effective adaptation response measures. It is therefore envisaged that a data-gathering exercise will be undertaken, with inputs from the Moroccan Ministry of Energy, Mining, Water and Environment; the National Meteorological Service of Morocco; ANP and port operators. This will cover information on the projected physical, social and economic impacts of climate change, on the emerging Moroccan legislative and regulatory context for addressing climate change impacts on coastal areas and ports, and on international best practice adaptation measures most appropriate to provide increased climate change resilience against the business-as-usual baseline. Project scoping will also collect information on strategic and technical priorities for improving the climate resilience of the Moroccan ports sector. The EBRD will work with ANP to develop an outline investment programme of viable port adaptation investments, with consultancy support as required, which may subsequently be developed in detail during project implementation and possibly implemented under Component 2 of the project.
26. As outlined below, Component 1 of the proposed project will consist of a coordinated package of technical support to be provided throughout project implementation, consisting of four parallel activities: 1) strategic framework development; 2) technical guidance development; 3) capacity building; and 4) monitoring.

Output 1.1 Development of strategic framework

27. Using the data gathered during the project development phase, a comprehensive strategic framework will be prepared to outline the risks and consequences of climate change, and the courses of action necessary to adapt to its effects. The strategic framework will be developed in parallel with targeted capacity development under Output 1.3 to improve the scientific and technical knowledge base, and assist ANP to assess the most suitable adaptation measures from a list of best practice standards. Best practice standards will include hard adaptation measures (capital intensive infrastructure), which includes refurbishment and new build options, as well as soft measures (institutions, policies, enabling frameworks). This strategic framework will build upon the EBRD guidance document ‘*Development of guidance for optimising resilience to climate change in investments in sea ports and other coastal infrastructure*’ by applying it to the specific Moroccan context (i.e. local climate change risks, nature of specific port assets and operations, local institutional context). The draft strategic framework will be applied through Component 2, which use will enable refinement and finalization of the framework.

Output 1.2. Development of technical guidance

28. Technical guidance will be developed for selecting appropriate adaptation options for specific port investments. Resource constraints and conflicts between different options mean that adaptation options also need to be assessed and prioritised against numerous case specific financial and non-financial criteria. Typical assessment criteria may include:¹³
- a. Effectiveness – will the adaptation option achieve the stated objective?
 - b. Efficiency – will the benefits of the option be greater than the costs?
 - c. Equitable – the adaptation option should not adversely affect other areas or people
 - d. Priority – how high a risk is the adaptation option addressing? High or extreme risks should be addressed urgently.
 - e. Costs – this not only refers to the immediate economic costs of the option, but also likely ongoing costs, as well as associated social and environmental costs.
 - f. Co-benefits – adaptation options may be able to take advantage of opportunities, which lead to environmental, social or economic benefits.
 - g. Maladaptation – does the option lock in outcomes, and limit future adaptation options, or adversely impact on other areas or people?
29. A thorough assessment of adaptation measures requires building awareness, resilience and adaptive capacity as well as building human capital. Similarly, when assessing adaptation measures economic development should be a focus, for instance by adopting forward-looking design standards for new or upgraded ports.¹⁴ Some of the tools that may assist the prioritisation of adaptation options being assessed for implementation in Component 2 include:¹⁵
- a. Cost benefit analysis – This is predominantly an economic decision support tool. It helps determine if the total monetary benefits of a selected adaptation option exceed the monetary costs. It is best used where actions have focused objectives and where monetary costs and benefits can be generated.
 - b. Multi-criteria analysis – Decision support tools that can assist in assessing benefits, where the monetary values are harder to define. They can generally accommodate quantitative and qualitative variables
 - c. Cost efficiency analysis – A tool to help compare the relative costs and outcomes from two or more alternatives. This is also appropriate to use when monetary values are hard to determine.

Output 1.3. Capacity building and skills transfer

30. Targeted support will be provided for applying the above strategic framework and technical guidance in specific investments. This support seeks to build the capacity of port authorities and operators to implement and manage climate resilience measures that will ensure the sustainability of the investments and the overall project after completion. A capacity development program will be implemented in parallel to the initial stages of Component 2 to strengthen the institutional and technical capacity of ANP and port operators to identify and prioritise adaptation measures, and to be able to subsequently develop a strategic framework for their implementation as described above under Output 1.1. The capacity development programme will improve scientific and technical knowledge as well as increase the awareness of climate change impacts, vulnerability and adaptation.
31. Targeted training for the operation and on-going maintenance of infrastructure adaptation measures will also be provided, which may include the development of operational guidance materials for specific ports. These may take the form of guidelines and technology manuals to ANP and port operators for the on-going operation and maintenance of adaptation measures in line with feedback from the monitoring program. This will also provide guidance for future modification or new measures.

¹³ Adapted from Scott, H, McEvoy, D, Chhetri, P, Basic, F, Mullett, J 2013 Climate change adaptation guidelines for ports, Enhancing the resilience of seaports to a changing climate report series, National Climate Change Adaptation Research Facility, Gold Coast.

¹⁴ United Nations Conference on Trade and Development 2011 Ad Hoc Expert Meeting on: Climate Change Impacts and Adaptation: A Challenge for Global Ports, available at: http://unctad.org/en/docs/dtltlb2011d2_en.pdf

¹⁵ Adapted from Scott et al. (2013).

32. Capacity development may also be enhanced by initiating twinning with leading OECD international ports that have comprehensive strategies and operational guidelines for promoting climate resilience. These activities may include study tours of ports identified as implementing international best practice for climate change adaptation, such as Rotterdam, New York or London. This twinning will facilitate skills transfer and staff exchanges, thereby building awareness and ultimately adaptive capacity.

Output 1.4. Monitoring activities

33. Alongside strengthened institutional and technical capacity, a comprehensive knowledge base for sound decision-making is needed to enable port authorities and operators to identify, prioritise and implement adaptation measures. Morocco's Second National Communication (SNC) to the UNFCCC has identified in particular the need for updated topographic and bathymetric maps and detailed land use maps as a prerequisite for effective adaptation planning. More specifically, the SNC has also recommended setting up systems for monitoring of oceanographic parameters, tidal measurements and time series of storm waves.
34. The project will support port authorities to develop and implement a monitoring programme that generates information on climate change impacts to establish an appropriate basis for adaptation decision-making. This may be used to evaluate on a regular basis the planned and implemented adaptation measures, and to consider whether new adaptation measures need to be introduced. Information generated by the monitoring programme will inform the application of operational guidance on specific ports, allowing for feedback and improvements to the operational guidance and overall strategic framework, whose effective implementation will depend on the availability of reliable data, which will be provided by the monitoring programs.
35. The project may therefore consider supporting the acquisition and installation of wave and tide measuring instruments as well as building capacity for the collection, verification and analysis of data from these instruments.
36. Generally, the project will establish and strengthen systems and frameworks for the continuous, long-term monitoring, reporting and review of climate change impacts, adaptation strategies and measures.

Component 2: Building structural climate resiliency features in port facility infrastructure

Component costs: USD 46,397,000 million from EBRD and Technical Cooperation Grant co-financing, with USD 6,192,694 million requested from the SCCF)

37. As previously noted, Morocco's large ports and shipping sector are critically important for the economy and livelihoods, and yet are vulnerable to climate change impacts such as sea-level rise and associated impacts such as wave overtopping. Component 2 focuses on building additional climate-resiliency features in Moroccan port infrastructure through rehabilitation and building projects. The intent is to finance upgrades and building of additional port infrastructure that is climate resilient, thereby reducing the vulnerability of port infrastructure to the adverse effects of climate change. This project will enable best practice to be introduced and adapted to the local Moroccan context through the implementation of a number of projects that integrate structural climate resilience measures into port upgrades/construction.
38. The expected outcomes of this Component are climate resilient best practice in adaptation technology and infrastructure scaled up; and reduced vulnerability of port infrastructure to the adverse effects of climate change.

Output 2.1 Climate resilient infrastructure upgrades and/or construction of new climate resilient port facilities investment

39. The majority of this Component will be funded by the EBRD (as hard loans for capital expenditures), and infrastructure rehabilitation and construction are considered business-as-usual. The SCCF-A will fund alternative climate-resilient investments and may support (a) infrastructure rehabilitation and/or (b) new construction.
40. The choice of each intervention will be linked to what is understood about the specific climate change vulnerabilities facing the port. The EBRD has developed detailed technical guidance for assessing and managing climate change risks to ports and other coastal infrastructure. Tentatively, to prioritize potential infrastructure rehabilitation initiatives, a process such as assessment, adaptation and

replacement (as depicted in Figure 3 below) may be followed by the EBRD when investigating the adaption measures on coastal infrastructure due to climate change. The concurrent implementation of Component 1 and this Component means that the strategic framework and technical guidance being developed under Component 1 will be used to inform the specific climate resilience measures and technologies to be included in the investments.

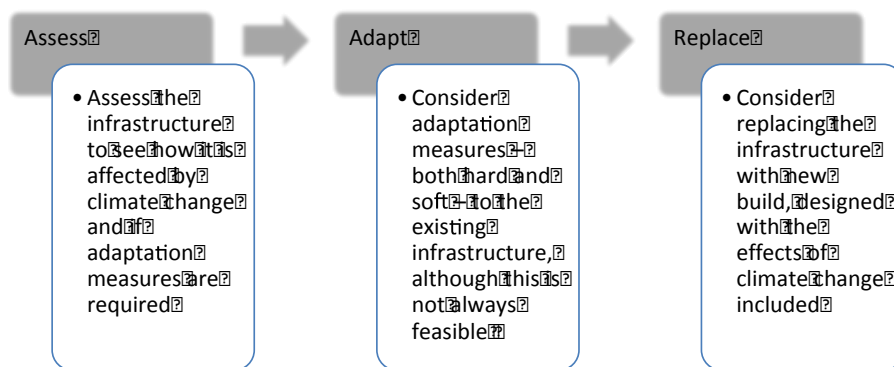


Figure 3 – Adaption measures prioritisation for rehabilitation initiatives

41. In prioritizing new investments in port infrastructure, there may be a need to adopt a precautionary approach encompassing a combination of considerations for example: use design inputs that allow for incorporating climate change; choose a suitable design life and design event to consider in the design (e.g. consideration of critical infrastructure resilience such as high return periods used in design for critical infrastructure, not ‘one design life’ fits all scenarios); adopt a freeboard¹⁶ if pertinent to the structure (depending on its use and context throughout service life as the longer the service live, the greater the freeboard that should be considered); and use sensitivity analysis on increased storminess (bigger variations in offshore wind heights leading to bigger variations of wave heights hindcast inshore). As illustrated in Figure 4, if new structures satisfy all of the above, they will have passed the ‘precautionary’ approach test for new developments and therefore will be a robust and climate-resilient investment.



Figure 4 – Climate change proofing flowchart

42. A range of specific adaptation options is under consideration for Morocco that may be implemented by the participating ports, informed by the technical appraisal of the specific investments, which will be informed by the investment programme, strategic framework and technical guidance under development under Component 1. The types of infrastructure and adaptation measures that may tentatively be supported by the project are noted in Table 1 below, with details provided in Annex A.
43. The expected outputs are climate resilient infrastructure upgrades and/or construction of new climate resilient port facilities with investments made in 2 to 3 ports. The selection of these ports will be optimized on the basis of the results of the further strategy development work, an assessment of ANP’s business needs and the most effective use of the funds. Additional anticipated benefits are noted in section A.1.5.

¹⁶ Freeboard, the difference in height between water level and the infrastructure, could be increased to allow for sea level rise or increased wave height.

Table 1 – Types of infrastructure and adaptation measures that may be supported

Types of infrastructure that may be supported	Adaption measures that may be supported	
Concrete and steel structures	Adapt infrastructure to allow for increased water level	Install dykes or sea walls
Mooring and berthing jetties	Alter dredging quantities	Install new equipment
Breakwaters	An alternative source of material may need to be found	Install protection
Navigation channels	Construct a crown wall	Marine growth removal regime
Terminal areas	Construct a wave wall	Move or raise electrical infrastructure
Floating infrastructure	Construct alternative navigation channel	Raise equipment sensitive to salt water
Electrical infrastructure	Construct silt traps	Raise level of the infrastructure
Handling/ loading equipment	Construct silt traps	Raise the crest level of the breakwater
Associated transport infrastructure (e.g. road, rail)	Construct breakwater to provide sheltered environment	Raise the fenders
	Construct coastal protection	Raise the handling equipment
	Construct replacement infrastructure	Raise the mooring equipment
	Increase capacity of drainage system	Raise working platform
	Increase dredging quantities	Replace the fenders
	Increase repair regime	Replace the mooring equipment with higher rated equipment
	Install attenuation tanks	Strengthen structural sections
		Waterproof electrical infrastructure

A.1.4 Incremental/additional cost reasoning and the expected contributions from the baseline, the GEFTE, LDCF/SCCF and co-financing

44. Additional cost is defined by the SCCF as the full adaptation cost, in particular the cost of concrete adaptation actions that reduce vulnerability and increase adaptive capacity to the impacts of climate change. These costs are added to the costs of Business-as-Usual (BAU) development, where BAU refers to activities that would be implemented also in absence of climate change. The cost that would be incurred for BAU is considered the project’s baseline, which constitutes the co-financing.¹⁷
45. As described above, the project’s baseline consists of ambitious plans for the modernisation of Morocco’s ports with a view to increasing the national economy’s competitiveness, driving regional development and positioning Morocco as a logistics hub in the Mediterranean. Climate change and the associated impacts such as accelerated sea level rise will lead, in time, to increased vulnerability of these investments. Awareness of this vulnerability is currently low within Morocco, as evidenced by none of the existing investment plans considering climate change impacts.
46. The additional costs for adaptation action are incurred by the need to incorporate additional climate resilience features into port design (e.g. adjustment of quay heights and other infrastructure, additional breakwaters, drainage and pumping equipment, etc.). The SCCF is requested to provide funding for these additional costs that reduce vulnerability and increase adaptive capacity of the Moroccan ports sector to the impacts of climate change.
47. Co-financing will contribute to providing technical support to strengthen the institutional and technical capacity among port authorities and operators to enable them to effectively implement climate change adaptation measures related to port infrastructure. Specific measures will include development of a strategic framework for adaptation, a scoping exercise to provide data to inform this framework, the formulation of operational directives for each port, and establishing monitoring programs.

¹⁷ ‘Accessing resources under the special climate change fund’, GEF, 2011

A.1.5 Global Environmental Benefits and/or adaptation benefits (LDCF/SCCF)

48. Key adaptation (SCCF) benefits will include:

- i) Port facilities made more resilient to climate change impacts such as sea level rise, wave overtopping and flooding
- ii) Reduced interruption of economic activities such as shipping, fishing and trade due to port closure
- iii) Wider demonstration impact and the transfer and dispersal of skills and capacities related to climate risk management across the Moroccan ports sector.

49. Benefits expected from the project are summarized below by project Component:

Component	SCCF and adaptation relevance and associated benefits	Other Benefits
Component 1: Capacity development for reducing vulnerability to climate change		
Output 1.1 Development of Strategic framework	<ul style="list-style-type: none"> ▪ Integration of climate change adaptation into strategies that prioritise the most appropriate measures to increase resilience of Moroccan port infrastructure and port operations to the adverse effects of climate change. 	<ul style="list-style-type: none"> ▪ Baseline for monitoring climate change, sea level rise, climatic events and their effects on Moroccan coasts which may inform other adaptation measures and programs.
Output 1.2 Development of Technical Guidance	<ul style="list-style-type: none"> ▪ Identification, prioritisation and implementation of most appropriate strategies and measures to be undertaken in component 2. ▪ Strengthening of maintenance and management of technology used. 	<ul style="list-style-type: none"> ▪ Skill sets of project staff increased.
Output 1.3 Capacity building and skills transfer	<ul style="list-style-type: none"> ▪ Improved scientific and technical knowledge ▪ Strengthened institutional and technical capacity of ANP and other stakeholders to identify, prioritise, implement, monitor and evaluate adaptation strategies and adaptation measures based on international best practices. ▪ Increased awareness of climate change impacts, vulnerability and adaptation ▪ Building capacity for the collection, verification and analysis of monitoring data. 	<ul style="list-style-type: none"> ▪ Skill sets of project staff increased.
Output 1.4 Monitoring activities	<ul style="list-style-type: none"> ▪ Systems and frameworks for the continuous monitoring, reporting and review of climate change impacts and adaptation measures to ensure prioritisation of appropriate measures ▪ Baseline information for monitoring climate change, sea level rise, climatic events and their effects on Moroccan coasts. 	<ul style="list-style-type: none"> ▪ Strengthened monitoring, reporting and verification activities that can feed into other related activities including the Climate Change Convention and Convention on Biological Diversity.
Component 2: Building structural climate resiliency features in port facility infrastructure		
2.1 Climate resilient infrastructure upgrades and/or construction of new climate resilient port facilities investment	<ul style="list-style-type: none"> ▪ Climate resilient port infrastructure technologies and practices identified in component 1 will be adopted and scaled up reducing interruption of economic activities in ports and reducing vulnerability of port infrastructure to the impact of climate variability and change. 	<ul style="list-style-type: none"> ▪ Livelihoods and sources of income for port staff and shipping industry personnel secured. ▪ Increased climate resilience in port infrastructure reduces interruptions of economic activities and thus increases economic security of Morocco. ▪ Investments in Moroccan ports become examples of international best practice.

A.1.6 Innovativeness, sustainability and potential for scaling up

50. The proposed project will use approaches and technologies that have not been previously applied in Moroccan ports, bringing international best practice to the country. Therefore, in this context, it will be highly innovative and have a powerful demonstration impact. While the project will carry out investments in 2 to 3 ports, the overall impact of the project in terms of raising awareness and building capacity within ANP and among port authorities is expected to be catalytic for identifying opportunities to incorporate climate change into future planning.
51. The proposed project's sustainability stems from the climate-resilience of the investments and the adoption of best practice and/or proven adaptation technologies. Investments in port infrastructure will enhance infrastructure resiliency and reduce the vulnerability of the economy, people, and their livelihoods and income sources derived from port activities.
52. The capacity developed within ANP, port authorities and port operators will allow for climate change considerations to be embedded in port infrastructure planning and operations. ANP, Moroccan port authorities and port operators will also benefit from and move towards OECD practices. Overall, this will allow for scaling up of climate-resilient investments, serving as a demonstration both within Morocco and the region.
53. The experience gained by ANP through this project's investments to enhance adaptation to climate change may create opportunities for scaling up investment by enhancing technical and institutional capacity and thus removing barriers for scaling up. ANP may then be able to make use of future opportunities for direct access to adaptation funding through the Green Climate Fund (GCF) or other sources. Hence, this project will play a role in enabling Morocco to benefit from increasing financial flows and new financial instruments for adaptation.
54. SCCF has not previously financed a project focusing specifically on ports.

A.2. Stakeholders

Will project design include the participation of relevant stakeholders from civil society and indigenous people? Yes No If yes, identify key stakeholders and briefly describe how they will be engaged in project design/preparation:

55. The key stakeholder is the Agence National de Ports (ANP - National Port Authority), which is a public agency responsible for the development, maintenance and modernization of ports. The ANP has a key regulation role and has national coverage. The ANP is an Executing Agency for the proposed project and will enter into a client agreement with the EBRD to support the preparation and execution of technical assistance activities. The ANP exercises its power on all of the country's ports with the exception of the Tanger Med (33 ports). The ANP is an active investor in Morocco's seaport infrastructures with an eye towards improving both their logistical competitiveness and their environment (terminals, access to the sea and land etc.) by adapting and modernizing basic infrastructures (channels, docks) and increasing port capacities. The ANP will be specifically engaged in making assessment of potential infrastructure investments and will be recipient of a number of capacity building exercises.
56. Other key project stakeholders are the Moroccan Government Ministries including: the Ministry of Finance; the Ministry of Equipment, Transport and Logistics; and the Ministry of Energy, Mining, Water and Environment. Other public institutions with mandates relevant to the project include the Moroccan Agency for Logistics Development (l'Agence Marocaine de Développement de la Logistique, AMDL).
57. The National Meteorological Service of Morocco and the Hydrography Division (Division Hydrographie, Océanographie et Cartographie (DHOC) de la Marine Royale) may be engaged in technical support components of the project in view of the importance of their collection of high quality and complete meteorological and oceanographic data to be used in assessments of future climate change predictions.
58. On the ground port stakeholders include: Harbour Master Houses, commercial terminal owners/operators and shippers, operators of passenger and small freight vessels, recreational users, port Unions. In particular Harbour Master Houses are responsible for environmental protection and the

preservation of the public domain, works, infrastructures, superstructures, and port facilities as well as the optimization of port running and use of infrastructures, superstructures, and port equipment.

59. The private companies developing the ports of Tanger-Med and Nador-West Med are stakeholders that are not under the umbrella of ANP.
60. Coordination with other donors and agencies active in the sector and working on the coastal zone in Morocco will be undertaken as appropriate. A thorough review of ongoing activities in the sector and a full stakeholder consultation will be held as part of project development. A stakeholder coordination plan will be included in documentation accompanying the Request for CEO Endorsement.
61. Consistent with the EBRD's mandate to support transition, the Project will offer significant socioeconomic benefits and will assist in future-proofing these against climate change risks through both investments in adaptation technologies and climate resilience infrastructure investments, and the awareness raised about the importance of adapting to climate change.
62. During any planned engineering or construction phase any potentially adversely affected members or groups of civil society will be appropriately notified and consulted. This will be done in accordance with ANP's commitment to solidarity and social development and its policy to respect neighborhoods and their facilities.

A.3. Gender Considerations

Are gender considerations taken into account? Yes No If yes, briefly describe how gender considerations will be mainstreamed into project preparation, taken into account the differences, needs, roles and priorities of men and women.

63. Based on the EBRD's internal policy promoting gender equality of opportunities across its full range of investment and donor-funded activities, all Project activities and Components will be fully gender inclusive. Gender equality is considered an integral part of sound business management and also key in the EBRD's activities to advance sustainable growth in its countries of operations. In January 2010 the Board of Directors of the EBRD adopted the *Gender Action Plan (GAP)*¹⁸, which is based on the EBRD's commitment to the 3rd Millennium Development Goal (to end poverty by promoting gender equality) and the Gender Working Group, which promotes equal opportunities and enhanced economic participation of women across sectors and projects.
64. All investment projects financed by the EBRD are subject to the EBRD's internal procedures, which include an Environmental and Social Action Plan (ESAP) that ensures that all environmental, social, gender and other issues are taken into consideration prior to or during their implementation.

A.4. Risk

Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable)

Risk	Level	Risk mitigation approach
Climate Change	Low	The fundamental objective of this Project is to address the risks of climate change through adaptation measures, however, climate change still poses a number of risks to the fulfilment of the objective and project components. One example is the effects of increased occurrence of storm surge events during construction of adaptation measures. Measures will be taken to reduce the affect of climate change during the construction phase on a case-by-case basis.
Environmental and Social	Low	Site specific localised and or temporary risks during construction will be addressed through the EBRD's established policies and procedures. The Environment and Social Action Plan includes mitigation and measures and corrective actions.
Institutional	Low - Medium	Low commitment of port owners/operators to adopt recommended adaptation measures from Operational Directives. This risk will be mitigated through inclusion of the costs and benefits of climate change risks and adaptation measures so that port

¹⁸ The EBRD's Gender Action Plan, available from: <http://www.ebrd.com/downloads/sector/gender/genplan.pdf>.

Risk	Level	Risk mitigation approach
		owners/operators can make informed decisions. The availability of EBRD loans and SCCF funding for infrastructure investment will also mitigate this risk.
Technology	Low	Technology risk is low because technologies will be thoroughly researched in the scoping phase and their selection site specific and outlined in the Operational Directives for each port.
Financial	Low - Medium	Limited long term funding for banks impedes the granting of long-term loans which constitute around a third of total loans. ¹⁹ This represents a significant degree of maturity mismatch risk and reduces the availability of credit to longer-term projects such as those in the infrastructure sector. The risk level of this is considered low to medium as the project addresses some of the lack of funding by providing loans. The EBRD will bring its particular expertise in infrastructure financing, which is seen as a key priority by the government.
Uncertainties and Assumptions	Low	The principal uncertainty throughout evaluation of the extent and timing of climate change impacts will be the evidence used such as predictions of sea level rise, projected temperatures, and the projected frequency of climatic events such as storm surges. Ensuring all evidence used is well researched and peer reviewed will provide more certainty to the evaluation although discrepancies in climate change predictions remain inherently uncertain.
Awareness	Medium-high	A lack of awareness of the likely impacts of climate change and the associated risks as well as the proposed adaptation measures to be implemented is a potential barrier/risk. This is indicated by the absence of climate change adaptation in the baseline. This barrier to implementing the adaptation programme could be exasperated by the number of stakeholders and data gaps. Awareness raising is the primary measure by which the issues of climate change and necessary adaptation measures will be promulgated to various stakeholders

A.5. Coordination

Outline the coordination with other relevant GEF financed and other initiatives:

65. As previously noted, the EBRD is a major investor in port infrastructure across its countries of operations, having made loans to over 30 port projects representing a total project value of over EUR 3.6 billion, and is currently planning to invest in a number of ports in Morocco. EBRD has recently developed detailed technical guidance for assessing and managing climate change risks to ports and other coastal infrastructure. This guidance is being applied practically in the EBRD port investments under development in Poland and Turkey. The EBRD will ensure that the proposed project in Morocco will coordinate closely with these other recent and ongoing EBRD projects and initiatives, ensuring that experiences and lessons learned are leveraged and shared.
66. As previously noted, ANP has a number of projects underway and the country has identified a portfolio of projects planned for the next many years of over USD 800 million. As Executing Partner to this proposed project, the ANP will coordinate with other relevant projects and initiatives underway and planned in the country; will be key to scaling of climate-resilient investments in future; and will act as the focal point for this demonstration both within Morocco and the region.
67. The proposed project will also coordinate with the SCCF and GEF projects underway in Morocco. Two other adaptation projects in Morocco are funded by the SCCF: *'Increasing productivity and adaptive capacities in mountain areas of Morocco (IPAC-MAM)'* (IFAD, ongoing); and *'Integrating climate change in development planning and disaster prevention to increase resilience of agricultural and water sectors'* (World Bank, ongoing). The latter has the Agency for Agricultural Development as the Executing Agency, and focuses on strengthening the capacity of public and private institutions and of farmers for integrating climate change adaptations in projects directed to small farmers.
68. While none of the GEF-funded projects in Morocco have considered the impacts of climate change and the need to plan for adaptation in ports, a number of GEF projects contribute to the baseline as

¹⁹ EBRD 2012 Morocco Country Assessment

previously noted. The project *'Mainstreaming climate change in the National Logistics Strategy and Roll-Out of Integrated Logistics Platforms'* (UNDP, ongoing) focuses on mitigation of emissions from land transport, but will include activities in the planned 'logistics platforms' (multi-modal freight centres), some of which are associated with ports. The International Waters project *'MED: Integrated Coastal Zone Management- Mediterranean Coast'* (IBRD, ongoing) supports ICZM in selected areas of Morocco's Mediterranean coast (Lake Nador and Moulouya). The GEF project, *'Mainstreaming Global Environment Aspects in the planning and monitoring processes of the National Human Development Initiative (NHDI) in Morocco'* (UNDP) illustrates the importance of environmental aspects in the fight against poverty, which is one of the Moroccan Government's priorities.

PART B. DESCRIPTION OF THE CONSISTENCY OF THE PROJECT WITH:

B.1 Is the project consistent with the National strategies and plans or reports and assessments under relevant conventions? (yes /no). If yes, which ones and how: NAPAs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, etc.:

69. The Second National Communication to the UNFCCC describes the vulnerability of the Moroccan coastal zone to the impacts of climate change and suggests a number of adaptation responses that serve to increase climate change resilience of coastal infrastructure such as ports.
70. The *National Plan for the Fight Against Climate Change (Plan National de Lutte Contre le réchauffement climatique, 2009)* notes that the planned law for the coastal zone should enable adaptation. In addition, the *Integral Audit of the Moroccan Coast* under the auspices of the Ministry of Housing and Town Planning (*Audit Intégral du Littoral Marocain (2007-2010)*) should lead to the adoption of a strategy that will take into account vulnerability to the impacts of climate change.
71. The Moroccan Technology Needs Assessment (TNA) (Maroc: *Evaluation des Besoins Technologiques et Plan d'Action Technologique aux Fins d'Adaptation au Changement Climatique (Version Finale)*, M. Sinan, Sep. 2012) notes that the coastal zone is vulnerable to climate change impacts.
72. Development of the ports sector in a sustainable way is one of the Moroccan Government's aims for economic development of the country. Morocco has developed sectoral strategies for the main economic sectors of the country, whose impacts on ports have been integrated into the *National Ports Strategy to 2030*. This Strategy articulates a vision in which the sector contributes to economic development in a sustainable manner.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF


AGENCY(IES)

A. Record of Endorsement²⁰ of GEF Operational Focal Point (S) on Behalf of the Government(s):
(Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
Mohamed Benyahia	Director of Partnership, Communications & Cooperation	Ministry of Energy Mining, Water & Environment	08/08/2014

B. GEF Agency(ies) Certification

This request has been prepared in accordance with GEF policies²¹ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Marta Simonetti, EBRD		08/08/2014	Craig Davies	+44 20 7338 6661	DaviesC@ebrd.com

C. Additional GEF Project Agency Certification (*Applicable Only to newly accredited GEF Project Agencies*)

For newly accredited GEF Project Agencies, please download and fill up the required **GEF Project Agency Certification of Ceiling Information Template** to be attached as an annex to the PIF.

²⁰ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

²¹ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, and SCCF

Annex A. Climate change impacts and adaptation measures on infrastructure

Type of infrastructure	Climate change impact	Impact on infrastructure	Adaption measure
Concrete structure	Change in sea temperature and chemistry	Changes in the chemical deterioration of the concrete	-Increased monitoring -Increased repair regime -Construction of replacement infrastructure
	Change in atmospheric carbon and temperature	Increased carbonation and chloride-induced corrosion to reinforcement	-Increased monitoring -Increased repair regime -Construction of replacement infrastructure -Cathodic protection
	Sea level rise	Changes in the intertidal, splash zones etc.	-Assessment and monitoring -Installation of protection
Steel structure	Change in atmospheric carbon and temperature	Increased carbonation and chloride-induced corrosion	-Increased monitoring -Increased repair regime -Construction of replacement infrastructure -Cathodic protection
	Sea level rise	Changes in the intertidal, splash zones etc.	-Increased monitoring -Increased repair regime -Construction of replacement infrastructure -Cathodic protection
Mooring and berthing jetties	Sea level rise	Alters the geometric interaction between the moored vessel and the mooring point	-Introduce upper operational water level limits -Raise the mooring equipment
		Possibility inundate the working platform/area	-Raise working platform -Raise equipment sensitive to salt water
		Previously assumed 'dry' structures being effected by wave forces	-Strengthen structural sections if required -Construction of replacement infrastructure
		Introduction or increase in uplift forces	-Strengthen structural sections if required -Construction of replacement infrastructure
		Changes in the geometric interaction may affect the fender interaction with the vessel	-Introduce upper operational water level limits -Raise the fenders -Replace the fenders
	Increased storminess and wave height	Increase in wave forces	-Strengthen structural sections if required -Construction of replacement infrastructure -Construction of breakwater to provide sheltered environment

Type of infrastructure	Climate change impact	Impact on infrastructure	Adaption measure
		Previously assumed 'dry' areas being effected by wave forces	<ul style="list-style-type: none"> -Strengthen structural sections if required -Construction of replacement infrastructure -Construction of breakwater to provide sheltered environment -Increased monitoring -Increased repair regime -Cathodic protection
		Introduction or increase in uplift forces	<ul style="list-style-type: none"> -Strengthen structural sections if required -Construction of replacement infrastructure -Construction of breakwater to provide sheltered environment -Increased monitoring -Increased repair regime
		Increase in mooring forces and vessel movement	<ul style="list-style-type: none"> -Construction of breakwater to provide sheltered environment -Strengthen structural sections if required -Replace the mooring equipment with higher rated equipment -Replace the fenders -Construction of replacement infrastructure
	Changes in air and seawater temperature	An increase in the rate of marine growth will impact on the current and wind drag forces experienced by the structures	<ul style="list-style-type: none"> -Increased monitoring -Marine growth removal regime -Strengthen structural sections if required -Construction of replacement infrastructure
		Changes in air temperatures can alter the energy absorption properties of rubber fenders	<ul style="list-style-type: none"> -Replace the fenders -Introduce operational limits
Breakwaters	Sea level rise	Increased overtopping	<ul style="list-style-type: none"> -Raise the crest level of the breakwater -Construct a crown wall -Construction of replacement infrastructure
		Will alter the force profile on the breakwater	<ul style="list-style-type: none"> -Increased monitoring -Increased repair regime -Construction of replacement infrastructure

Type of infrastructure	Climate change impact	Impact on infrastructure	Adaption measure
	Increased storminess and wave height	An increase in the wave forces experienced by the structure	-Increased monitoring -Increased repair regime -Construction of replacement infrastructure
		Possible increase in 'damaging' events	-Increased monitoring -Increased repair regime -Construction of replacement infrastructure
Navigation channels	Sea level rise	A reduction in the required dredging depth/quantities to maintain the required dredge depth	-An alternative source of material may need to be found if required
	Increased storminess and wave height	Changes in sedimentation patterns may lead to changes in dredging quantities/requirements	-Increased dredging quantities -Construct silt traps -Construct alternative navigation channel
	Changes in coastal erosion rates	Changes in sedimentation patterns may lead to changes in dredging quantities/requirements	-Alter dredging quantities -An alternative source of material may need to be found if required -Construct silt traps -Construct alternative navigation channel -Construction of coastal protection
Terminal areas	Increased storminess	An increase in the intensity of rainfall during a storm event will increase the loading on the drainage system	-Increase capacity of drainage system -Install attenuation tanks
Transport infrastructure road, rail, etc.	Sea level rise	Low lying transport infrastructure may be at risk of inundation due to rising sea levels	-Increase capacity of drainage system -Raise level of the infrastructure -Install dykes or sea walls
	Increased storminess and wave height	Low lying transport infrastructure may be at risk of increased overtopping due to increased wave heights	-Increase capacity of drainage system -Raise level of the infrastructure -Install dykes or sea walls
		Intense rainfall events will increase the loading on the drainage system	-Increase capacity of drainage system -Install attenuation tanks
Floating infrastructure	Sea level rise	The water level/tidal range that the floating infrastructure is designed for may be exceeded due to sea level rise	-Introduce operation limits -Adapt infrastructure to allow for increased water level -Construction of replacement infrastructure

Type of infrastructure	Climate change impact	Impact on infrastructure	Adaption measure
	Increased storminess and wave height	The increased wave height could lead to the floating infrastructure place too much stress on the mooring system of the floating infrastructure	-Strengthen structural sections if required -Construction of replacement infrastructure
		The increased wave height could lead to the allowable motions of the floating infrastructure being exceeded	-Introduce operation limits -Construction of breakwater to provide sheltered environment
	Increase in intense rainfall storm events	If the floating infrastructure is located in a river, the increased rainfall may lead to increased current in the river exerting higher forces on the mooring system of the floating infrastructure	-Strengthen structural sections if required -Introduce operation limits -Construction of breakwater to provide sheltered environment -Construction of replacement infrastructure
Electrical infrastructure	Sea level rise	Electrical infrastructure could be at risk of water damage due to inundation due to sea level rise	-Move or raise electrical infrastructure -Waterproof electrical infrastructure
		Sea level rise can lead to an increase in the height of the water table leading to buried ducts and chambers flooding	-Move or raise electrical infrastructure -Waterproof electrical infrastructure
	Increased storminess and wave height	Electrical infrastructure could be at risk of water damage due to overtopping	-Move or raise electrical infrastructure -Waterproof electrical infrastructure -Construct a wave wall
	Increase in air and sea water temperature	An increase in air and sea water temperature may increase the likelihood of electrical infrastructure overheating	-Increase cooling
Handling/loading equipment	Sea level rise	Alters the geometric interaction between the handling/loading equipment and the vessel	-Raise the handling equipment -Install new equipment