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MEMORANDUM

TO : **THE BOARD OF DIRECTORS**

FROM : **Cecilia AKINTOMIDE**
Secretary General

SUBJECT : **MOROCCO : EXPANDING THE CAPACITY OF THE TANGIER – MARRAKESH RAILWAY**

ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN*

Please find attached hereto for information, the above-mentioned document.

Attach.

Cc : The President

***Questions on this document should be referred to:**			
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Project Title: **EXPANDING THE CAPACITY OF THE TANGIER-MARRAKESH RAILWAY**
Project Number: **P-MA-DC0-003**
Country: **MOROCCO**
Department: **OITC** **Division: OITC.2**

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1. ESMP Objectives

1.1 The Environmental and Social Management Plan contains specific measures taken to mitigate or eliminate the identified negative impacts of the project. In keeping with Moroccan laws, the environmental and social policies of the African Development Bank and the environmental commitment of the ONCF to secure ISO 14001 certification, all enterprises and suppliers of goods and services have to comply with the special legal provisions which are outlined for them in the General and Specific Terms of Reference.

1.2 The purpose of the ESMP is to ensure that the mitigation and management measures are fully and efficiently applied. The objective of monitoring is to track the evolution of construction works and ensure their relevance in terms of integration and coherence. The surveillance program can, if need be, reorient and even improve execution of the works and implementation of the various project components.

1.3 Bidding enterprises have to include in their bids an environmental plan for execution of the works. Contractors have to prove their ability to execute the works in accordance with all the terms of reference and environmental requirements. They need to provide proof that they have the necessary expertise in environmental and social management and that they are able to manage any environmental impact and risks resulting from works execution.

1.4 The environmental unit attached to the Project Supervision Office of the ONCF will ensure the environmental monitoring of all construction sites and works as part of its supervisory duties, by applying the appropriate environmental measures outlined in this ESMP, the terms of reference and the environmental commitments made by the ONCF to secure an ISO 14001 environmental management certification that will enable it to continually assess the impact of its activities, products and services. Such environmental monitoring will involve inspectors from the Environmental Department, if need be. Periodic reports on the surveillance, monitoring and efficiency of environmental measures and on solutions to unforeseen environmental problems will be submitted to the ONCF (Project Supervisor). Environmental supervision will entail the drafting and enforcement of the applicable documents and environmental procedures.

1.5 Mitigation measures are outlined in the Terms of Reference and are not specifically environmental in nature. For the construction and operational phases, these measures mainly entail adopting principles based on environmental best practices and technical civil engineering options. They relate to staff management, the installation and hygienic conditions prevailing in worksite living quarters, the organization and management of hydrocarbons depots (managing risks of leakage, explosion or fire), the origin of materials (quarries) and their transportation conditions, the organization of depots needed for the construction work or renewal works, traffic regulation, solid and liquid waste management, site rehabilitation and dismantling of provisional installations upon completion of works and revegetation of the right-of-way. During the operational phase the measures will relate to the safety of neighboring communities and maintenance of the constructed railroads, appurtenances (drainage ditches, road bed, overhead wire, etc.) and rolling stock.

2. Context

2.1 Project Components

The project is implemented within the right-of-way of the two railroads concerned, over a total distance of 400 km (the Casablanca-Marrakech line (245 km) and the Casablanca-Kenitra line (155 km)). Its components are:

(i) Consolidation works (renewal of the rails and ballast on a 32 km stretch, repair of railroad signs and renewal of the overhead wire on 140 km stretch);

(ii) Renovation of 11 small railway stations, including repair of railway terminal buildings, rearrangement of public spaces and improvement of access;

(iii) Improvement of security and safety, which includes the elimination of pedestrian crossings, fencing of the railway right-of-way, construction of railway crossings and protection of floodable areas;

(iv) Upgrading of telecommunications equipment;

(v) Upgrading works which entail renewing the track on a 32 km stretch and recalibration of the track super-elevation along an 80 km stretch;

(vi) Partial doubling of the track on a 40 km stretch between Settat and Marrakesh: This concerns infrastructure and railway equipment works (tracks, overhead wires, substations and railroad signs) along the Skhour-Benguerir and Sidi Ghanem-Marrakesh sections;

(vii) Tripling of the track on a 148 km stretch between Casablanca and Kenitra with a third track for freight transport.

As regards tripling of the track, connection tracks will be built at the Mohammedia and Rabat railway bypasses on a distance of 40 km along the right-of-way reserved for that purpose in the city plans.

2.2 Alternatives

The technical and economic feasibility studies and preliminary study files of the selected Scenario C were reviewed to ascertain the viability of the project. The design of project components is in keeping with good practice and the standards defined by the UIC with respect to railway works and equipment installation.

Scenario	Brief description		Reasons for rejection
	Horizon 2015	Horizon 2020	
Scenario A	**Kenitra-Casa** ▪ 3 tracks between Mohammedia and Kenitra ▪ 4 tracks between Mohammedia and Ain Sebaa ▪ 4 tracks between Nouasser and Sidi El Aidi ▪ HSL between Kenitra and Tangier ▪ Consolidation works on the main Casa-Kenitra railroad **Settat-Marrakesh** ▪ Partial doubling (66 km)	▪ HSL between Settat and Marrakesh	Costly to meet the 2015 and 2020 deadlines
Scenario B	**Kenitra-Casa** ▪ 3 tracks between Mohammedia and Kenitra ▪ 4 tracks between Mohammedia and Ain Sebaa ▪ 4 tracks between Nouasser and Sidi El Aidi ▪ HSL between Kenitra and Tangier ▪ Consolidation works on the main Casa-Kenitra railroad **Settat-Marrakesh** ▪ Partial doubling (66 km) ▪ Speed increase between Casa and Rabat	▪ HSL between Settat and Marrakesh ▪ Additional speed increase between Settat and Fès	Costly to meet the 2015 and 2020 deadlines
Scenario C	**Kenitra-Casa** ▪ 3 tracks between Mohammedia and Kenitra ▪ 4 tracks between Mohammedia and Ain Sebaa ▪ 4 tracks between Nouasser and Sidi El Aidi ▪ HSL between Kenitra and Tangier ▪ Consolidation works on the main Casa-Kenitra railroad **Settat-Marrakesh** ▪ Partial doubling (66 km)	▪ HSL between kenitra and Casa ▪ Partial doubling of the Settat-Marrakesh line	-

2.3 Summary description of the political, legal and institutional framework

The ADB's environmental policy seeks to: (i) promote a long-term vision of economic and social development; (ii) check and even reverse the pauperization of Africa by ensuring a sustainable improvement of access to ecological resources for the poor; (iii) help Regional Member Countries to build their human capacity and sensitize decision-makers to environmental challenges with a view to triggering the institutional changes needed for sustainable development; (iv) strengthen partnership with international organizations and networking with international, regional and sub-regional organizations in order coordinate operations in the area of environmentally sustainable development.

The project is consistent with the Bank's vision summed up in the Country Strategy Paper. From the environmental standpoint, the project is classified under Category 2 in accordance with the relevant rules of the Bank.

From the institutional standpoint, several structures are involved in environmental management at the national, provincial and local levels. These are the Secretariat of State for Water Resources and the Environment as well as local councils and civil society acting through national and provincial non-governmental organizations involved in environmental protection.

2.4 Project Area

The immediate project area (PA) covers the region of Gharb-Cherarda-Beni Hssen (capital – Kénitra), the region of Rabat-Salé Zemmour-Zaer (capital – Rabat), and the region of Grand Casablanca. It had an estimated population of over 8 million inhabitants in 2007, which represents over 25% of the national population. The PA also covers the regions of Chaouia-Ouardigha and Marrakech-Tensift-Al Haouz, which had an estimated population of over 8.6 million inhabitants in 2007, representing over 28% of the national population. It covers the provinces (prefectures) of Kénitra, Salé, Rabat, Skhirat-Temara, Mohammedia, Casablanca, Settat, Kelaa Sraghna and Marrakesh.

2.5 Environmental Aspects of the PA

2.5.1 Physical Environment

Climate

The climate between Casablanca and Kenitra is generally classified under the oceanic bioclimatic stage which ranges from sub-humid to semi-arid, while the climate between Settat and Marrakesh is classified under the semi-arid bioclimatic stage, with increasing aridity from North to South. In the coastal area, temperature variations are lower, ranging from temperate winters (5°C on average) to rather hot summers (26°C on average), and stand at 45°C on average in the hinterland.

The average rainfall is 400mm per year. The ambient air quality is poor, especially along the Settat-Casablanca-Rabat and Kenitra routes since the area is highly urbanized and industrialized. The dust emissions and exhaust fumes that the local population has to put up with are very limited and temporary.

Hydrography

(i) The study area covers the Bouregreg basin, coastal basins and the Tensift basin. The Bouregreg basin comprises the provinces of Khémisset, Kénitra and part of Wilaya de Rabat-Salé. In the main, it is composed of hills and plateaux which progressively slope towards the North. It comprises two main wadis: Wadi Bouregreg, which drains a surface area of 3,830Km² in the North-Eastern part of the basin; and Wadi Grou and its affluents, the Korifla and Akreuch, which drain the South-Western part that has a surface area of 5,760 km².

(ii) The coastal basins cover the South-Western part of Wilaya de Rabat Salé, the entirety of Wilaya de Casablanca, the northern half of Settat province, and the northern part of Khouribga province. The El Melah dam is the main water management facility constructed on the coastal Atlantic basins. In addition to the El Melah, 17 other dams and catchment ponds have been constructed in the provinces of Settat, Khémisset and Khouribga.

(iii) The Tensift basin covers a surface area of 19,800 Km² comprising the entirety of Marrakech Wilaya, and parts of the provinces of Essaouira, El Kelaâ des Sraghna and Safi. Geographically, this basin can be subdivided into three distinct areas: (a) the High Atlas, a mountainous area with the highest relief in

the Kingdom with its tallest point being the Jbel Toubkal which peaks at 4,167 m; (b) the Haouz plain and Mejjate basin, a depression with a surface area of 6,000 km² which runs East-West and has a breadth of 40 km; and (c) Jbilet composed of low-lying mountains rising North of the Haouz plain. The Tensift basin receives an annual water volume of about 300 Mm³, which flows in from the Oum Er Rbia watershed through Canal de Rocade: 260 Mm³ are used for irrigation and 40 Mm³ for human and industrial consumption in the city of Marrakesh.

The main wadis therein take their rise from the study area between Casablanca and Kenitra, which extends from the coastal water basins to the Bouregreg basin. The soils in their catchment areas are virtually impermeable. These wadis are: Mellah, Cherrat, Nfifikh, Yquem and Bouregreg. The wadis, which lie between Settat and Marrakesh, from the coastal basins to the Tensift basin, are fewer in number. The main ones are: (i) Oum Er Rbia, which takes its rise from the Middle Atlas, flows across the Middle Atlas range, the Tadla plain and the coastal Meseta before ending up in the Atlantic Ocean about 16 km away from the town of El Jadida (Azemmour); (ii) Sidi Ali which, together with El Arsa constitute the affluents of Bouchane, has, in less than 20 years, overflowed its banks three times (1986, 1990 and 2000) during which intense rainfall caused violent floods in the town of Benguerir; and (iii) Tensift Wadi which takes its rise from the High Atlas and flows across the Haouz plain near Marrakesh. It has many affluents, especially on its left bank, which include Chichaoua Wadi and N'fis Wadi, and flows into the Atlantic Ocean between Safi and Essaouira.

The quality of the water will not be significantly altered. Any potential impact will be felt during construction of sanitation infrastructure extensions, transversal bridge extensions and bridges on the by-pass tracks in Mohammedia and Rabat (Akreuch and Bouregreg).

Hydrogeology

(i) The hydrogeological context of the Bouregreg basin is composed essentially of impermeable geological formations of the primary era which account for the absence of groundwater. The only available groundwater is of limited extension and located in alluvial depressions, such as the water table of Shoul, near Salé, and that of Tanoubert in Mâaziz.

(ii) The Atlantic coastal basins cover primary terrain characterized by a hydrogeological context that does not admit the presence of ground water. The geological formations recognized as aquifers are the sedimentary basins of Chaouia Côtière, Berrechid and Témara, which were developed for vegetable farming. In the Tensift basin, most of the water tables have water of average quality except in areas polluted by wastewater or affected by the chemical nature of the aquifer formations. Those of the Mejjate and Haouz, excluding the outlying sectors of Tensift Wadi, have water of good quality, while those of Bas Tensift and Bahira are of very poor chemical quality and are limited to certain sectors of the watertable with a high nitrate content and a salinity level of over 5g/l.

Geology

The coastal region, which has a breadth of 10 to 30 km, can be distinguished by its ancient or recent dune ridges, which are more or less consolidated. Its overall monotony is broken by residual bars of hard rock, generally quartzites, which protrude through the surface

topography. To the West, the Meseta Central is only covered by recent formations, dating from the Miocene to the Quaternary ages, which are more or less abundant in places. As in the North, Miocene marl is very often present. Plio-quaternary detritic formations, some of which have a thickness of a few dozen meters (30 m on average) cover the whole Atlantic coast strip, except the area located between Ykem Wadi and Nefifikh Wadi. These sandstone and sandy formations which contain calcareous cement are often interesting reservoir aquifers whose groundwater is very much utilized.

In the region located further South, the geological characteristics are composed of two units (Jbilete and Mouissate). The Paleozoic basement complex, which constitutes the substratum, is covered on the surface by Pliocene and quaternary dune sandstone. This Paleozoic basement complex is composed of formations with a much weathered surface layer that is completely or almost impermeable. The predominant formations are shales and quartzites which appear in association with sandstone. Paleozoic shales are totally impermeable for the most part. Nevertheless, their weathering, which is sometimes rather profound, creates conditions conducive to groundwater retention. A deep purple psammite series is formed between the shales and quartzites. The thickness of these geological horizons is about 1000m for the shales and psammites and 170m for the quartzites. The other region extends along the Tensift which, through its affluents, drains three-quarters of the old High Atlas massif. These affluents which flow over impermeable lands are run over very steep slopes.

2.5.2 Biological Environment

Vegetation

The various plant types available are visible vestiges of the natural vegetation, namely jujube tree sprouts on cultivated plots and, very exceptionally, isolated eucalyptus, acacia and doum trees.

The Settat-Khemissat segment lies in an area composed of small cultivated farm holdings with soils of good composition. That of Skhour–Benguerir is built on a wild, arid and stony plateau with poor soils and scanty vegetation. The railway platform already planned for two tracks is very close to the Marrakesh palm grove but only the track and ballast for track-doubling have been laid. About ten palm trees will simply be transplanted to create space of about twenty meters. There are no sites of biological and ecological importance (SBEI) in the immediate vicinity of the project. Such sites are located further away. The sensitivity of this component is deemed minor.

Wildlife

The wildlife population in the study area is composed of relatively common species. Certain rodent species such as wild gerbils, Shaw's jirds, wild mice and black rats are prevalent. There is also a large number of small birds: passerines, larks, starlings, finches, etc. As concerns amphibians, their biotopes are heavily influenced by flow variations in the wadis.

Protected Areas

The protected areas closest to the study area are:

(i) The biological reserve of Sidi Boughaba which has a surface area of 800 ha and is bounded on the South by the Marabout of Sidi Boughaba, the North by the mouth of Sebou Wadi, the East by cultivated farmland and the West by the Mehdia seaside resort. It is classified as SBEI priority 1.

(ii) The Sidi Moussa cliff, which has a surface area of 300 ha rises along the entire coastal strip between creeks 11 and 32 North of the town of Salé. It is an active cliff of poorly consolidated quartenary sandstone. It is rectilinear, lies in the NE-SW direction and, over a distance of about 12 km (of which only 6 are still a habitat for Eleonora's falcons), is jaggedly eroded into about forty small creeks of varying sizes.

(iii) The Mâamora forest, classified as a priority 1 site of biological and ecological importance, has a surface area of 5000 ha. Its soil, which is sandy with a depth of zero to a few meters, lies on an argillaceous layer that is impermeable during the rainy season. This forest has huge glades and plant species characteristic of the temporary pools (dayas) found in the Mâamora Forest, in terms of density.

(iv) The wetlands of Mohammedia are located at the mouth of Al Maleh Wadi, within the town of Mohammedia. They are marshes which form the mouth of the wadi. Currently, it has reduced to a small temporarily-flooded salt steppe, through which runs an artificial canal that has replaced the river course. It has about 80 bird species. This diversity stems directly from the variety of biotopes. Nevertheless, the water bird population, essentially in the alluvial zone, remains low and does not exceed a thousand.

(v) The islet of Skhirat: This site comprises the whole islet and a portion of the rocky coastal platform which extends to the South. The rocky costal platform extending South of the islet has a highly peculiar and very interesting morphology. The outcrops of quaternary calcareous sandstones, show very special forms of dissolution which, from land to sea, successively comprise the following zones: lapies and troughs, a platform with marine potholes (coastal platform), deepening of the shore platform (reef flat), offshore cliff.

(vi) Cherrat Wadi: encased valley with banks of primary shale rocky banks in certain areas. The SBEI is limited to the downstream region of the wadi located between the Sidi Bettach-Ben Slimane road and the Ar Rwida dayas complex situated further North. The plant life is represented by several species, at least two of which are endemic (euphorbial regis-jubae and drusa oppositifolia). The wildlife biodiversity of this SBEI is very varied, comprising 29 mammal species, 98 bird species and 20 reptile species.

(vii) On Bouregreg Wadi, 19 km upstream of the river mouth and close to 4 km downstream of the little village of Akreuch Wadi, are two small islets isolated from the banks at high tide, since the tidal wave that sweeps up the river is very sensitive up to that point. At low tide, the mud flats on the banks are drained for the most part and it then becomes possible to reach the islets on foot.

(viii) The El Maleh Dam Wadi is a small artificial lake of 250 ha. This site has a highly diversified bio-ecological quality. The wildlife is represented by a population of invertebrates composed essentially of fish, of which some species were introduced recently (pike perch and carp) and others native (eel, rudd and mosquito fish). The bird population is represented by four water species which nest on the site (mallards, little grebes, mud hens and grey herons) and about ten species which winter there regularly.

(ix) The palm grove marshland North of Marrakesh has a total surface area of 250 ha and overlaps with the railway line in the Northern part of Marrakesh station. SBEI is located between two major highways (RP 7 and 9) and the freeway. It is a unique and particularly wild environment on a much reduced surface area with a typically marshland vegetation which is very representative of a palm grove ecosystem. It has a wildlife biodiversity that is huge and quite unique for the Marrakesh region.

2.5.3 Human Environment

The PA has an average labor force participation rate of 48% and 60% and a relatively high unemployment rate in the regions of Grand Casablanca (14%) compared to Rabat-Salé – Zemmour-Zaer (13%), Gharb and Cherarda Beni Hssen (10%), Chaouia-Ouardigha (6.2%) and Marrakech-Tensift-Al Haouz (5.9%).

The economy of the PA in the Grand Casablanca region is based essentially on industrial activities and services. It has more than 40% of the country's industrial units. This sector permanently employs 250,000 persons and generates a turnover of about MAD 150 billion, which represent 50% of national permanent employment and turnover respectively. In Marrakesh-Tensift-Al Haouz, the economy is based on tourism and industrial activities.

The table below presents the social characteristics of the project area.

Socio-demographic characteristics of the communities

Rural Council (RC), Municipality (MU) District (DT)			Distribution according to age group (%)				Illiteracy rate (%)	Population aged 10 and above according to level of education (%)			Labor force participation rate (%)	Socio-professional situation (%)							
			Under 6 years	From 6 to 14 years	From 15 to 59 years	60 years and above		Preschool	Primary and secondary	Higher education		Employer	Independents with premises	Independents at home	Itinerant independents	Public sector salaried workers	Private sector salaried workers	Family assistance	Apprentice
Hay	Hassani	(DT)	10.3	15.8	67	6.8	22.6	2	63.9	11.2	42	3	8.1	1	9.4	12.6	63.4	1.5	1.1
Ain	Chok	(DT)	9.5	15.6	66.7	8.2	21.6	2	63.9	12.1	41.1	5.8	10.9	0.9	5.8	13.1	60.7	2.1	0.8
El	Maârif	(DT)	8	14.3	67.8	9.9	18.4	1.6	57.7	21.6	45.2	7.4	6.8	0.8	4.2	13.6	65.3	1.4	0.6
Al	Fida	(DT)	7.8	13.4	68.5	10.3	24.1	2.3	65.3	8.3	43.1	2.1	12.3	1.6	9.2	10	62	1.6	1.1
Assoukhour	Assawda	(DT)	8.7	15.4	68	7.9	16.6	1.7	65.7	15.3	40.9	3.3	8.6	0.8	4.4	15.6	65.5	1.3	0.7
Mers	Sultan	(DT)	7.9	13.3	67.9	11	24.8	2.2	63.1	9.9	44.4	2.6	7.9	1.9	12.7	10.6	62.3	1.4	0.7
Hay	Mohamadi	(DT)	8.8	14.2	67.8	9.2	23.9	1.8	66.8	7.2	41.2	1.7	8.7	1.1	9.7	10.7	66	1.1	0.9
Ain	Sebaâ	(DT)	9.6	15.8	66.9	7.8	21.7	1.5	68.3	8.4	40.9	2	7.4	0.9	9.6	11	67.1	1	1
Sidi	Bernoussi	(DT)	9.8	15.2	67.8	7.2	21	1.8	67.7	9	40.8	1.7	7.7	0.7	6.8	11.1	69.9	1.1	0.9
Ain	Harrouda	(MU)	11.8	17.9	64.2	6.1	32.8	1.8	62.3	3.3	38.4	1.6	9.3	0.8	9.1	4.5	72	1	1.8
	Mohammedia	(MU)	9.8	16	65.9	8.2	23.2	1.5	65.1	9.9	38.8	2.4	9.7	1.5	9.4	14.7	59.3	1.5	1.6

Bni	Yakhlef	(RC)	12	19.8	63.1	5.2	36	2.2	58.5	3.7	37.7	1.1	10.9	1.6	17	6.4	57.7	3	2.4
El	Mansouria	(RC)	12.7	19.2	61.5	6.7	34.8	2.3	60.4	2.7	38.2	1.3	9.9	1.4	14.5	9.3	57.1	3.6	2.9
	Bouznika	(MU)	10.9	17.6	64.6	6.9	31.7	1.8	60.1	6.7	38.5	1.8	11.9	1.2	12.2	13.4	54.2	3.7	1.7
	Charrat	(RC)	11.2	18.5	63.1	7.2	55.2	1.4	46.6	0.7	40.8	1.8	19.3	0.4	1.8	1.4	47.5	26.9	0.9
	Sabbah	(RC)	11.4	19.1	62.5	7.1	48.3	1.1	49.6	1.7	36.4	0.7	18.3	1.1	9.7	5	53.5	10.7	0.9
	Skhirate	(MU)	12	19.3	62.7	6	37.6	2	56.5	4.2	37	1.6	11.4	0.8	14.6	11.3	57.5	1.4	1.3
Ain	Attig	(RC)	10.9	17.7	65	6.4	40.6	1.8	55.7	2.6	39.6	1.2	12	0.6	9.7	6.2	62.9	5.7	1.7
	Temara	(MU)	11.8	17.7	65.2	5.3	26.8	1.9	61	10	37.9	2.3	10.4	1.1	13	26.8	43.3	1.4	1.7
Agdal	Riyad	(DT)	8.4	15.4	67.5	8.7	13.3	1.2	49.9	34.6	44.7	4.6	5.4	0.6	1.3	44.8	41.9	0.8	0.6
Yacoub El	Mansour	(DT)	9.1	14.8	67	9.1	22.4	1.7	62.5	13	41.6	2	9.6	1	9.3	34.2	41.3	1.3	1.3
	Touarga	(MU)	7.1	12.5	67.2	13.3	19	2.2	70.2	10.2	46.6	0.1	1	0.4	0.4	55.6	41.5	0.6	0.4
El	Youssoufia	(DT)	9.9	15.1	66.5	8.5	25.2	1.8	61.8	10.9	41.6	2	7.5	1.2	11.2	28.1	48.1	0.9	0.9
Rabat	Hassan	(DT)	7.4	13.1	68.1	11.5	17.2	1.9	60.7	19.7	44.8	2.2	7.9	1.2	4.5	41.4	41	1.1	0.8
Bab	Lamrissa	(DT)	10.1	16.5	65.4	8	25	2	62.7	10.2	40.4	2.1	11.1	2.4	8.9	29.7	42.8	1.5	1.6
	Bettana	(DT)	9.8	15.5	66.7	7.9	23.3	1.9	61.1	13.2	40.5	2.7	9.5	1.2	6.2	34.3	43.4	1.4	1.2
	Layayda	(DT)	12.2	20.8	62.3	4.6	39.5	3	55	2.7	34.9	2.2	10.9	2.2	18.9	13.3	47.1	2.2	3.3
	Tabriquet	(DT)	10.7	16.6	65.9	6.8	26.9	1.9	62.4	8.6	39.2	1.5	11.5	1.7	9.2	27.1	45.7	1.5	1.7
Sidi	Bouknadel	(RC)	13.3	22.1	59.7	4.9	51.9	1.1	46.8	1.1	35.8	0.9	14.8	3.6	4.7	5.9	58.4	10.4	1.4
Sidi	Taibi		16.7	24	55.4	3.9	50.4	2.3	46.8	0.8	32.2	1.1	15	3.2	8.1	7.5	54.5	9.5	1.1
	Kénitra	(MU)	10.4	17.3	64.4	7.9	25.9	1.9	63.3	8.8	37.5	2.6	12.4	2.6	8.5	23.1	47	2	1.9
	Settat	MU	10.6	17.7	63.8	7.9	29.5	1.5	61	8.4	37.7	2.3	13.6	2	10.2	25.7	41.8	1.8	2.5
Ain	Nzagh	RC	13.5	20.3	57	9.2	60.4	0.9	39	1.1	42.7	0.3	31.3	1.4	3.8	4.2	27.2	29.8	1.9
	Lahouaza	RC	12.5	20	56.1	11.4	60.7	2.1	38	0.7	40.3	0.7	38.8	0.4	2.5	2.2	18.6	36.3	0.5
Khemisset	Chaouia	RC	11.5	19.1	57.6	11.8	51.9	3.3	44	1.1	36.2	1.4	37	0.7	2.2	2.6	18.6	36.9	0.7
Sidi Mohd	Ben Rahal	RC	13.2	20.9	56	9.9	63.3	2.5	34	0.8	36.7	2.2	28.6	0.9	3.7	2.8	19.6	41.4	0.9
Machraa	Ben Abbou	RC	14.4	21.8	55.5	8.3	64.9	3.1	33	0.6	37.5	0.5	27.1	0.4	1.1	3	34.1	33.6	0.3
	Toualet	RC	12.8	21.7	55.4	10.1	66.6	5.3	28	0.5	40.2	1.1	33	0.4	6.3	0.9	12.8	44.9	0.6
Oulad	Aafif	RC	12	19	57.3	11.8	60.6	1.4	38	0.5	42.6	1.2	29.5	2.1	7.3	0.7	15.3	42.8	1.1
Sidi	Abdallah	RC	14.5	23.1	54.6	7.7	72.6	3	25	0.3	35.7	0.4	31	0.3	5.7	1	14.7	46.5	0.4
Skoura	Lhadra	RC	13.6	24.2	54.2	8	76	2.5	22	0.5	36.5	0.2	29.9	0.7	4.3	0.8	19.7	44.1	0.3
Skhour	Rhamna	RC	12.5	21.1	57.5	8.9	59.3	1.5	37	2.8	33.1	0.3	36.2	0.7	8.4	8.1	18.8	27.1	0.5
Oulad	Hassoune	RC	13	22.2	57	7.8	59.3	2.5	37	0.8	36.4	0.8	20.4	5.2	9.8	1	27.5	34.6	0.7
Ben	Guerir	MU	12	21.2	61	5.8	35.3	2	58	5	32.3	1.7	16.6	2.7	15.4	24.3	34.8	2.4	2
Sidi Ali	Labrahla	RC	12.7	20.4	58.6	8.3	61.9	2	38	0.9	35.4	1	30.7	0.2	3.7	2.2	27.3	33.8	1
Nzalat	Laadam	RC	14.5	23.4	55.6	6.5	51.6	2.9	44	2.1	29.2	0.3	31.3	0.4	0.5	21	15.3	31.1	0.2
Sidi	Bou Othmane	RC	13.3	20.7	57.9	8.1	55.2	2.6	41	1.6	32.4	0.7	30.6	1.4	3.6	5.5	39.7	17.2	1.4
Oulad	Imloul	RC	13.9	21.8	55.5	8.8	66.4	2.8	34	0.4	31.2	0.8	27	0.3	2	1	39.9	28.5	0.6
Ouahat	Sidi Brahim	RC	14.4	21.2	59.2	5.3	46.3	1.4	51	1.7	32.1	1	14.3	3.3	6.9	3.4	65.9	4.1	1
	Harbil	RC	14.8	21.4	57	6.9	61.6	3	36	0.5	34.9	0.6	27.2	1.9	5.7	1.3	42.5	19.6	1.2
	Menara	DT	11.8	18.1	63.8	6.3	26	2.2	63	8.9	36.5	2.6	12.8	2.3	7.7	19.3	51.7	1.8	1.7
	Gueliz	DT	9.8	16.4	65.5	8.4	22.5	1.8	60	16	39.3	4.2	10.7	2	6.9	24.9	48.2	2	1.1
Marrakech	Medina	DT	9	14.9	65.2	10.9	34.7	2.4	58	5.9	41	1.9	13.1	4.2	13.5	10.2	53.1	1.8	2.3

			Population	Annual PR	Number of Households	Surface Area (Ha)	Density (inhab./ha)	Household Size
Prefecture	**Casablanca**							
Hay	Hassani	(DT)	323 944	3.3	70 801	1 629	198.86	4.58
Ain	Chok	(DT)	253 600	3	50 790	1 741	145.66	4.99
El	Maârif	(DT)	180 394	0.1	44 480	1 235	146.07	4.06
Al	Fida	(DT)	186 754	-1.6	38 939	1 790	104.33	4.80
Assoukhour	Assawda	(DT)	104 310	0.5	23 440	735	141.92	4.45
Mers	Sultan	(DT)	145 928	-1.3	33 305	423	344.98	4.38
Hay	Mohamadi	(DT)	156 501	-1.1	32 627	420	372.62	4.80
Ain	Sebaâ	(DT)	155 489	1.1	30 519	1 595	97.49	5.09
Sidi	Bernoussi	(DT)	165 324	0.8	33 562	1 252	132.05	4.93
Prefecture	**Mohammedia**							
Ain	Harrouda	(MU)	418 530	4.2	84 170	2 596	161.22	4.97
	Mohammedia	(MU)	188 619	1	539 154	3 463	54.47	**0.35**
Bni	Yakhlef	(RC)	29 723	7.1	9 750	5 008	5.94	3.05
Prefecture	**Benslimane**							
El	Mansouria	(RC)	12 955	4.3	2 787	7 626	1.70	4.65
	Bouznika	(MU)	27 028	2.4	5 305	10 943	2.47	5.09
	Charrat	(RC)	8 265	1	1 254	8 126	1.02	6.59
Prefecture	**Skhirat-Temara**							
	Sabbah	(RC)	12 912	2.6	2 229	894	14.44	5.79
	Skhirate	(MU)	4 325	3.8	8 574	4 784	0.90	**0.50**
Ain	Attig	(RC)	17 688	1.3	3 165	3 937	4.49	5.59
	Temara	(MU)	25 497	5.6	4 866	2 348	10.86	5.24
Prefecture	**Rabat**							
Agdal	Riyad	(DT)	90 568	2	23 029	2 423	37.38	3.93
Yacoub	EL Mansour	(DT)	202 301	0.1	43 850	1 193	169.57	4.61
	Touarga	(MU)	6 452	-2.2	832	117	55.15	7.75
El	Youssoufia	(DT)	172 863	0.2	37 434	6 810	25.38	4.62
Rabat	Hassan	(DT)	128 425	-1.3	33 797	840	152.89	3.80
Prefecture	**Salé**							
Bab	Lamrissa	(DT)	140 383	2.1	31 744	954	147.15	4.42
	Bettana	(DT)	103 165	0.1	21 200	1 388	74.33	4.87
	Layayda	(DT)	118 233	3.5	21 238	2 620	45.13	5.57

	Tabriquet	(DT)	234 733	1.4	49 107	768	305.64	4.78
Sidi	Bouknadel	(RC)	43 593	3.1	6 933	21 019	2.07	6.29
Prefecture	**Kénitra**							
Sidi	Taibi		20 534	12.3	4 612	11 538	1.78	4.45
	Kénitra	(MU)	359 142	2.1	74 562	6 670	53.84	4.82
Prefecture	**Settat**							
	Settat	(MU)	116 570	1.9	24 303	1 082	107.74	4.80
Ain	Nzagh	(RC)	14 367	1.5	1 813	17 206	0.83	7.92
	Lahouaza	(RC)	7 202	-0.3	1 183	12 802	0.56	6.09
Oulad Aarif	Bni Yagrine	(RC)	7 170	-0.6	1 216	20 876	0.34	5.90
Khemisset	Chaouia	(RC)	5 722	-0.4	1 077	89 029	0.06	5.31
	Toualet	(RC)	815	0.5	1 708	14 912	0.05	0.48
Sidi Mohed	Ben Rahal	(RC)	10 414	0.5	1 631	20 145	0.52	6.39
Machraa	Ben Abbou		752	0.9	1 338	15 136	0.05	0.56
Prefecture	**El Kalâa**							
Sidi	Abdellah	(RC)	10175	0	1488	22616	0.45	6.84
Skoura	Lhadra	(RC)	8942	-0.2	1224	30297	0.30	7.31
Skhour	Rhamna	(RC)	14346	-0.1	2438	29874	0.48	5.88
Oulad	HassouneHamri	(RC)	8554	0.1	1228	33236	0.26	6.97
	Labrikiyne	(RC)	13225	0.4	2104	24173	0.55	6.29
Ben	Guerir	(MU)	62872	2.9	12004	1258	49.98	5.24
Sidi Ali	Labrahla	(RC)	6894	-0.1	1099	22742	0.30	6.27
Nzlat	Laadam	(RC)	14651	2.1	1902	48019	0.31	7.70
Oulad	Imloul	(RC)	9641	0.3	1465	32266	0.30	6.58
Sidi Bou	Othmane	(RC)	17492	1.4	2986	44606	0.39	5.86
Prefecture	**Marrakech**							
	Harbil	(RC)	17007	2.6	2893	29978	0.57	5.88
Ouahat	Sidi Brahim		13686	6	2593	7153	1.91	5.28
	Menara	(DT)	281663	6.6	57403	9436	29.85	4.91
	Gueliz	(DT)	173101	1.6	37030	9436	18.34	4.67
Marrakech	Medina	(PR)	167233	-1.4	35929	609	274.60	4.65

The population targeted by the project is estimated at close to 5 million.

2.5.3 Sensitivity of the Various Environments

Physical environment: The quality of the water will not be significantly altered. Any potential impact will be felt during construction of sanitation infrastructure extensions, transversal bridge extensions and bridges on the by-pass tracks in Mohammedia and Rabat (Akreuch and Bouregreg).

The ambient air quality is poor, especially along the Settat-Casablanca-Rabat and Kenitra routes since the area is highly urbanized and industrialized. The dust and exhaust fumes affecting the local population are very limited and temporary.

Biological environment: All the sites are located at a distance of 15 to 30 km away from the study area and will not be affected by the project. However, the railway passes through the "palm grove marshland" SBEI situated North of Marrakesh station. This site is already affected by the existing railroad right-of-way and the project intends to lay a second track including a transversal extension of the rail bridge at PK243+404 which requires the acquisition of 400m² of land, renewal of the overhead wire and fencing of the right-of-way. For this last activity, a cluster of three big palm trees located on the current right-of-way will have to be removed. These palm trees will be immediately transplanted behind the service track adjoining the fence.

No sensitive species seem to be found on the railroad project area. The homogeneity of the various environments implies that the plant and animal species present are represented in the entire region.

The analysis presented made it possible to define the sensitivity and resistance status of various elements in these environments and to determine the precise level of sensitivity for each of them. Such sensitivity is determined by comparing the assessed impact with the value of the item concerned as shown below:

Section: Kenitra - Casablanca

Environment	Element	Assessed Impact	Value	Sensitivity
Physical	Soil	Low	Low	Low
	Air	Low	Average	Low
	Water	Average	Average	Average
	Landscape	Average	Average	Average
Biological	Wildlife	Low	Low	Low
	Vegetation	Low	Average	Low
	Protected Sites (SBEI)	Low	Average	Low
Human	Population and housing	Average	Average	Average
	Agro-pastoral activity	Low	Average	Low
	Socio-economic activity	Average	Average	Average
	Noise exposure	Average	Average	Average
	Mobility and transport	Average	Average	Average
	Infrastructure and equipment	Average	Average	Average

Section: Settat-Marrakesh

Environment	Element	Assessed impact	Value	Sensitivity
Physical	Soil	Low	Average	Low
	Air	Low	Low	Low
	Water	Low	Average	Average
	Landscape	Low	Average	Average
Biological	Wildlife	Low	Low	Low
	Vegetation	Low	Average	Low
	Protected sites (SBEI)	Average	Average	Average
Human	Population Housing	Low	Average	Average
	Agro-pastoral activities	Low	Average	Low
	Socio-economic activities	**Positive**	**Positive**	**Positive**
	Noise exposure	Low	Average	Average
	Mobility and transport	**Positive**	**Positive**	**Positive**
	Infrastructure and equipment	Average	Average	Average

3. Positive and Negative Impacts

3.1 Interrelations

Impact assessment is based on the eco-sensitivity of the elements within the environment concerned. Such sensitivity analysis makes it possible to determine an element's level of resistance to the project.

Impact assessment is done in three phases:

i. Pre-construction phase: This is the phase during which the project land is cleared, implementation studies conducted and preparatory works carried out on the construction sites (preparation of the right-of-way and access roads, installation of equipment).

ii. Construction phase: This is the phase in which site operations are conducted in execution of the project. It ends with rehabilitation of the construction site.

iii. Operational and maintenance phase: This is the phase for operation and utilization of the constructed infrastructure as well as maintenance and repair of various infrastructure components.

The tables below show the interrelation matrices relating project impact sources to the environmental elements for each railway line.

For the Kenitra – Casablanca Section

Milieu		Sources d'impacts	Phase de pré construction						Phase de réalisation							Phase d'exploitation			
			Dépôts des matériaux	Signalisation	Installation du chantier	Défrichement	Ouverture des pistes daccès	Transport et circulation	Excavation	Passerelles et ouvrages	Bâtiments et équipement de gestion de conduite	Altération du trafic	Pose des railles et des caténaires	Remise en état	Transport et circulation	Présence des ouvrages et équipements	Sécurité des riverains	Entretien et réparation	Flux du trafic
Milieu	Physique	Sol	f		f		f	f	m	f	f		f	f	f				
		Air					f	f							f				
		Eau			f						f				f				
		Paysage	m		f	m	f	f	m	f	f		f	++		f		f	
	Biologique	Flore	f			m	m	f	m		f		f	f	m				
		Faune				m			f	f			f	f	m	f			
		Espaces protégés						f							f				
	Humain	Population et habitats		f			m	f		++	f	m	f	++	f	++	++	++	++
		Activité agropastorale	f			f	f	f					f						
		Ambiance sonore	f		m	f	m	m	m		f		f		f				m
		Activité socio économique								++						++			++
		Mobilité et transport										m				++			++
		Infrastructure et équipements						m		f						++			

Importance de l'Impact : f : Faible, m : Moyen, Ft : Fort ; ++ : Impact positif

For the Settat – Marrakesh Section

Milieu		Sources d'impacts	Phase de pré construction						Phase de réalisation						Phase d'exploitation			
			Dépôts des matériaux	Signalisation	Installation du chantier	Déboisement	Ouverture des pistes d'accès	Transport et circulation	Excavation	Bâtiments et équipement	Altération du trafic (Train)	Matériaux abondonés	Remise en état	Transport et circulation	Présence de la double voie	Disponibilité des trains	Sécurité des riverains	Entretien et réparation
Milieu	Physique	Sol	m		m	f	f	m	m	f		f	f	m	f			
		Air			m		f	m	m				f	m				
		Eau			m					f				m				
		Paysage	m		m		m	m	m	f		f	f	m	f			f
	Biologique	Flore			f	m	f	f	m	f			f	f				
		Faune			f			f	m	f			f	m	f			
		Espaces protégés				m		f	m					f				
	Humain	Population et habitats		f	f			f	f	f	m				f	++	++	++
		Activité agropastorale			f	f	f	f	f	f			f	f				
		Ambiance sonore			f		m	m	m	f				m	m			
		Activité socio économique									f				++	++		++
		Mobilité et transport													++	++		
		Infrastructure et équipements					m								++			

3.2 Negative Impacts

Any potential negative impact would be inconveniences stemming from work site organization and execution of works, such as: (i) materials storage, which will modify the soil structure on the sites through compacting and on the areas through which they transit; (ii) exploitation of borrow pits and existing quarries, which may increase soil erosion; and (iii) air pollution through dust emissions and exhaust fumes from construction machines. The connection tracks to be constructed in Rabat, Boukenadel and Mohammedia will require land acquisition, which may result in damage to farmland, the destruction of fences and hedges, and the displacement of electric and telephone poles, water pipes or wastewater systems.

3.2.1 Construction Phase:

During work site preparation, installation of living quarters and mobilization of construction machines:

(i) Activities carried out in the immediate vicinity of certain routes or crossing points (level or under-track crossings) and walkways will be disrupted. Deviations will be needed.

(ii) The works will require the displacement of networks (electric and telephone networks and water pipes), the displacement of fences, bush-clearing, uprooting of trees and transplanting of palm trees found within the vicinity of existing track segments which have to be tripled or doubled. Such preparation is crucial to ensure that railway traffic is not interrupted.

(iii) The operation of existing quarries could exacerbate the discomfort caused to the riparian population.

(iv) Temporary junkyards (for old catenary scaffolding, old crosspieces and rails, rubble, etc.) will be operated and subsequently removed.

(v) The works will disrupt railway traffic (interruptions/delays, by-passing and overtaking difficulties, etc.).

The construction phase will generate:

(vi) A traffic buildup on certain road bridges, which have to be widened;

(vii) A disruption of pedestrian movements within the train stations to be renovated;

(viii) Obstruction of access with risk of accident due to the movement of construction engines along the deviation routes;

(ix) Loss of vegetation cover resulting from bush-clearing to open up a right-of-way for the connection tracks;

(x) Dust emissions and exhaust fumes from construction machines operating on the project roads and deviations which will be another source of discomfort in urban areas;

(xi) Risks of accidental spillage of dangerous products and leakage of petroleum products or oils and lubricants from construction machines which could also pollute the soil, water resources and wadis;

(xii) An influx of job-seekers from neighboring towns and cities which could disrupt the socio-cultural balance of local urban communities in terms of profanation of customs and proliferation of STIs.

3.2.2 Operational Phase:

(xiii) The increased capacity and speed will generate higher passenger and freight traffic. This could be a risk factor and potential source of accidents for local communities and road users especially at the level crossings on the Settat-Marrakesh line.

(xiv) Noise pollution will increase in urban settlements located near the railroads.

(xv) The project will not affect natural habitats, wildlife and plant life and there is no foreseeable further degradation of the quality of the abiotic environment during operation of the renovated lines.

3.2.3 Project Risks

Depending on the climatic zones and the relief, it would be appropriate to prevent risks of water erosion, rock slides or landslides during extension or widening of the engineering structures (railway bridges, bridges over the wadis, etc…). By their very nature, the projected works will cause only temporary or negligible discomfort:

(i) transportation of materials, traffic deviation, accident risk, noise, vibrations, possible water use disputes, air pollution, etc….;

(ii) risk of pollution for the wadis and/or water table in case of accidental spillage of waste oils and fuels or runoff from stored materials.

(iii) In zones with rugged topography, it is important to prevent erosion risk in areas where the right-of-way has been rectified (rockslides and landslides).

(iv) In the forest regions of Tamesna and Salé, it is necessary to prevent and manage any risk of fire.

(v) In regions with insufficient water resources, there could be additional pressure on water reserves used for local community needs. (However, the works will not affect any water catchment areas and aquifers.)

(vi) Any fuel depots that might be established could pose risks of soil and water pollution in case of accidental spillage of waste oils, fuels or leacheate, as well as fire risks.

3.3 Positive Impacts

The whole project will have a positive impact on passenger traffic within the region of Grand Casablanca, and on its connection lines with Settat and the touristic metropolis of Marrakesh. The partial doubling of the Settat-Marrakesh railway line will increase train frequency on that line and reduce travel time by 37 minutes. Annual passenger traffic would increase from 2.5 to 3.2 million passengers.

Furthermore, implementation of the project will create new jobs, estimated at MAD 1,912 million, during the construction and operational phases. Besides, its execution will generate exogenous benefits (time gains, road safety, air pollution, greenhouse effect, savings on track maintenance, etc…).

The identified positive impacts concern:

(i) Increased railway capacity which will boost intra-regional and inter-regional trade and contribute to the attainment of the Government's economic growth and development objectives;

(ii) Facilitation of access to socio-economic centers (government offices, health centers, schools, Marrakesh the main touristic city, etc…);

(iii) Increased safety through construction of footbridges, underground passages and a fence along the right-of-way;

(iv) Mitigation of flood risk through protection of floodable areas;

(v) Creation of new opportunities in freight transport sectors and trades through the ongoing program for creation of logistical zones;

(vi) Increased number of trips to touristic centers (Marrakesh, Casablanca, Rabat…) and consequently, the promotion of handicraft activity and tourism services;

(vii) Time and mobility gains under the best conditions of travel and comfort for travelers;

(viii) Replacement of road freight transport with rail freight transport which will generate gains for the community in terms of fuel consumption and a reduction of 6.5 million tons of greenhouse gas (CO_2) emissions for the entire life of the project. Apart from these emission gains, the project will generate an annual energy output of 220GW from two wind farms to be used for the operation of ONCF networks.

(ix) The change in mode of transport will also substantially mitigate environmental risk factors caused by road transport such as accidental spillage of dangerous materials, hydrocarbons products, chemicals and organic pollutants.

4. Mitigation and Improvement Program

4.1 Compensatory measures related land requisition for the right-of-way

In order to connect the tracks to the expanded infrastructure and to the by-pass segments in Mohammedia and Rabat, 50 ha of low-value farmland will be requisitioned and 3 households are concerned by such expropriation. The ONCF has set aside MAD 212 million as compensation for the expropriated land. Payment of the compensation will be made prior to the opening of the worksite and will constitute one of the Bank's conditionalities. Electricity, telephone and water systems will have to be displaced. They have been factored into the project and constitute a distinct heading in the DQE.

4.2 Mitigation measures during the construction phase

Mitigation measures have been outlined in the Terms of Reference and are not specifically environmental in nature. For the construction and operational phases, these measures mainly entail adopting principles based on environmental best practices in the terms of reference for enterprises and applying technical civil engineering measures. They concern staff management, the installation and hygienic conditions prevailing worksite living quarters, the organization and management of hydrocarbons depots (managing risks of leakage, explosion or fire), the origin of materials (quarries) and their transportation conditions, the organization of depots needed for the construction work or renewal works, traffic regulation, solid and liquid waste management, site rehabilitation and dismantling of provisional installations upon completion of works and renewal of the revegetation of the right-of-way. Hence, they focus mainly on the organization of works and equipment of living quarters to mitigate any general discomfort which might result from the works:

Installation of worksites: Project work sites will be located in easily accessible areas which are not used for agricultural, archeological or religious purposes. The enterprises responsible for the works will establish their living quarters far from wells and watercourses in order to avoid any risk of water pollution; no materials depot capable of releasing pollutants will be allowed within a defined safety perimeter. All access routes will be safeguarded to limit any interaction between the work sites and the external environment. Working hours will be adjusted to reduce any discomfort to the local population. Construction machinery speed will be limited on work sites located on the highway. They will, in priority, be set up within the railway right-of-way.

Traffic and deviation plan: A traffic plan will be prepared for construction machines circulating outside the right-of-way in order to ensure greater mobility and accessibility for the local population. This plan will evolve in tandem with the various phases of the project. The plan will be supplemented with road signs and notices. Works sites will be clearly marked out.

Installation of fuel and lubricant depots: Storage units for hydrocarbons products will be tanks or barrels placed aboveground in the appropriate containment area to avoid any spillage or rupture to the container and prevent the least risk of fire. Equipment for cleaning all types of spillage will be provided. Such equipment will be maintained in a perfect state.

Containment of flammable and dangerous materials: Storage areas for flammable products must have adequate emergency equipment which is kept in good working order. Oxygen, propane and acetylene, used for soldering or cutting of catenary scaffolding or rails will be stored in a specially prepared area which is fenced-off and protected against any risk of

accident with a track motorcar or vehicle. Waste oils will be collected in tanks or barrels for recycling and removal from the site under conditions defined in the environmental rules and charter of the ONCF.

Felling of trees and quickset hedges: Any felling of trees will be subject to prior authorization from the forest authority (HCF). In replacement, trees will be planted on the work sites beyond the drainage units and along the railroad right-of-way (after project completion).

General excavation: Extraction sites (quarries) or excess material disposal sites will be carefully chosen to avoid any negative impact or harm to the landscape and will be rehabilitated after completion of works.

Dust emission: In order to reduce dust emissions from construction machines and materials transport vehicles, the contractors will water the roads adjacent to residential areas. Provisional disposal sites for excavated earth or rubble may also need to be watered.

Effluents, water pollution risk, solid waste: In accordance with the size of the various minor construction sites, effluents from installations will be collected and, depending on their composition, disposed of in watertight septic tanks or through mobile collection systems. Water from the washing and maintenance of construction engines will be treated to separate it from the oils. The water will then be channeled into septic tanks and the oil residue collected. Any depots for oil and petroleum products (used by construction machines) will be carefully designed to avoid any leakage into the soil or wadis. Solid waste from the construction sites – especially wood, metals and organic waste used for composting – will be transported to authorized (ONCF or municipal) dumps for sorting and recycling.

Bridge expansion works and the construction of footbridges, under-track crossings and flood control structures will require that civil engineering works be conducted, while ensuring that traffic continues to flow. Furthermore, water draining from concrete preparation sites will be collected in leek-free settling tanks. The suspended matter, which accumulates in these tanks, will be recovered and the dry residue will be disposed of in controlled or authorized dumps.

Erosion risk and evaluation of soil stability: Contractors will monitor changes in soil stability, especially when setting up access ramps to bridges and footbridges. This will entail locating those areas of their construction/works sites, which are vulnerable to erosion during and after construction. Drainage systems will be set up and physical earth bank stabilization techniques will be applied (booms, gabions, curbs, etc…).

During the operational phase, measures will relate to the safety of neighboring communities and maintenance of the constructed railroads, appurtenances (drainage ditches, road bed, catenary/overhead wire, etc.) and rolling stock.

A matrix summing up the impact mitigation measures for the main phases is presented in Annex 2.

5. Monitoring Program

The environmental surveillance and monitoring program for the works will be an integral part of the environmental and social reports prepared by the consultancy firms conducting implementation studies for the enterprises.

The Project Supervision Office of the ONCF will be responsible for the environmental and social component of the project. The environmental unit attached to the Project Supervision Office of the ONCF will conduct the environmental monitoring of all construction sites and works as part of its supervisory duties, by applying the appropriate environmental measures outlined in the terms of reference and the environmental commitments made by the ONCF with a view to securing an ISO 14001 environmental management certification. These measures will enable it to continually assess the impact of its activities, products and services. Such environmental monitoring will involve inspectors from the Environmental Department, if need be. Periodic reports on surveillance and monitoring of the environmental measures, their efficiency and solutions to unforeseen environmental problems will be submitted to the ONCF (Project Supervisor).

On the initiative of the ONCF Project Supervision Office, the various works execution and supply contracts will contain a description of the penalties that will be applied against enterprises and suppliers in the event of non-compliance with specific environmental and social techniques. The environmental surveillance and monitoring program for the works will form an integral part of the environmental and social reports prepared by the consultancy firms responsible for conducting implementation studies for the enterprises. The latter will rely on such environmental assessments to mitigate or offset any risks to the physical, natural and human environment. The Bank's annual supervision missions will provide an opportunity to assess the project's environmental and social monitoring quality.

Community sensitization measures will be taken by the enterprises and the ONCF, focusing on: (i) rules to be observed to keep the population far from the scope of action of construction machinery and equipment during mechanized construction works; (ii) pollution resulting from the transportation of materials outside the railroad right-of-way; (iii) road safety and observance of the highway code at level crossings.

6. Public Consultations

Morocco's Law No. 7/81 on land expropriation for works of public utility provides for: (i) public information of the parties concerned; (ii) publication in the Official Gazette and in the media of the full text of the public utility declaratory (PUD) order; and (iii) filing of the draft expropriation plan at the land registry office, which records the expropriated lands in the land registry or in a special public register if the lands are undeeded. Publication of the PUD order is followed by an administrative survey which lasts for two months with effect from its publication. During this period, the public can raise observations, questions or objections to the plan which is presented in the public registry. The detailed survey plans of the expropriated land are available to the public in the councils concerned.

Decree No. 2/04/564 of 4 November 2008 which defines the terms for organizing and conducting the public survey on EIA projects allows the involvement of the communities concerned in the assessment of the possible environmental effects of the project and gives them the opportunity to make observations and proposals to the project. To ensure that these instruments are duly implemented, the Environment Department and the Ministry of Home Affairs prepared a joint circular addressed to the Walis of the regions and Governors of the Prefectures and Provinces. Besides, the Secretary of State for Water Resources and the Environment, by Order No. 470/08 of 23 February 2009, has delegated the signing of environmental approval decisions to the Walis of the regions.

By Law No. 52/03, the ONCF is mandated to manage the Kingdom's railway property and, in that capacity, it is responsible for the planning of activities and execution of works to guarantee these transport services for the public in accordance with the strategy defined by the Ministry of Transport. After the adoption of its 2010-2015 program contract, the ONCF organized information and sensitization seminars on its investment program which were attended by the civilian population, local elected representatives, government officials, the General Confederation of Enterprises in Morocco (CGEM), NGOs and other associations.

After these consultations, the civilian population and local elected representatives expressed their approval of the current project and confirmed their availability to help facilitate its implementation. Furthermore, they requested that, during implementation of this project, concomitant consideration be given to the Casablanca RER project for the Kenitra-Casablanca line and the total track doubling project for the Casablanca-Marrakesh line. Such doubling will make it possible for urban trains (TNR) to run between Benguerir and Sidi Ghanem. The Ministry of Home Affairs and Local Government has decided to look for the necessary financing sources and the ONCF could be a partner in implementing these projects.

These meetings were supplemented by opinion surveys conducted in 2010 as part of the environmental and social impact assessment of the various project components. It emerged from the assessment that the expectation of all clients and partners of the ONCF is to see an improvement in passenger comfort, safety and rapid freight processing. These surveys show a very high level of satisfaction with the quality of services provided by the ONCF.

7. Additional Initiatives

In Section 5.1, mention is made of compensation to be paid to affected communities whose land has been appropriated for the railway project. To that end, the ONCF has prepared an expropriations file required for compensation of persons and property affected by the project, in the knowledge that almost all the property does not include residential buildings.

This file targets several objectives, namely: (i) minimize land acquisition as much as possible by studying viable alternatives during project design; (ii) involve affected persons in all the key stages of the compensation process; and (iii) ensure that the compensations provide sufficient investment resources so that persons affected by the project can have the opportunity to share in its benefits. Provision is made for operating costs and the conduct of an external audit. The indicative budget for execution of the Expropriation Plan is presented in the annexes. It will be supported with external service providers such as land and real property experts from land agencies, bailiffs and local councils.

Reforestation will be done in accordance with the provisions of Dahir No. 1/58/382 of 17 April 1959 governing lands which are part of the forest regime and are necessary for the execution of public utility projects, with the signing of an agreement between the ONCF and the High Commission for Water Resources and Forestry.

Its execution will be the sole responsibility of the ONCF. The plan's expenditure funds come from its budget. An external assessment, in the form of an audit, will be conducted at the end after the land has been requisitioned.

The various expropriation plans were deposited at the land registry office which recorded them in a public register for administrative survey purposes. The PUD orders are to be published according to the table below:

Item	Sections between PKs	Preparation of population surveys and detailed land survey plans	Declaration of public utility	Site inventory prior to commencement of works
Settat /Khemissat	73 to 94	Done	Sept-10	15/06/2010
Skhour /Benguerir	146+591 - 171+880	Done	Nov-10	01/04/2010
Nzalt -Sidi ghanem	173+100 - 189+100	Oct-10	Nov-10	Dec-10
Sidi Ghanem - Marrakech	239+100 to 246+561	Nov-10	Dec-10	Jan-11
Mohammedia - Skhirat	35 to 65	Done	Sept-10	Nov-10
Salé - Kénitra	114+900 to 126+200	Done	Oct-10	Dec-10
By-pass tracks in Rabat and Mohammedia	Plans filed with the lands authority for harmonization with town planning documents and reservation of the corridor	Feb-2009		

The projected land acquisition table is presented in Annex 1.
The public registers and PUD orders can be consulted at the ONCF.

8. Responsibilities and Institutional Arrangements

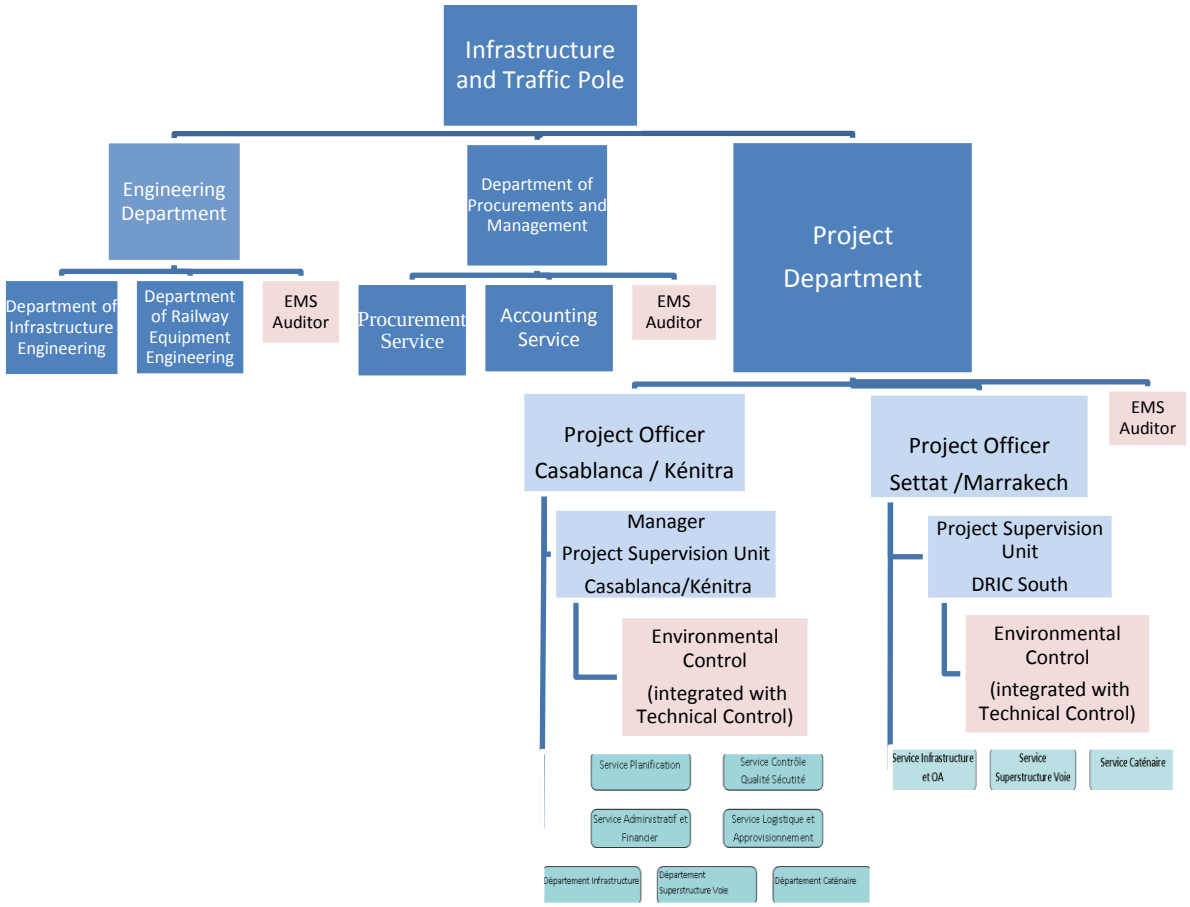
According to Morocco's institutional arrangements, the ONCF will be responsible for organizing and piloting the execution of project components as well as ESMP implementation through its Project Supervision Office. This Office is responsible for works execution and will ensure the smooth conduct of the program by its Project Impact Surveillance and Monitoring Unit (SU), and of the Environmental and Social Management Plan (ESMP) and the Environmental Management System (EMS) ISO 14001. It will rely on ONCF district services and the Regional Inspection Services under the State Secretariat for Water Resources and the Environment. The ONCF Project Supervision Office will pool all observations made by the other ministerial services and project stakeholders and regularly monitor the works right up to project handover.

The project's management team at the ONCF has qualified human resources and adequate technical means in these domains. The assistance of environmental and social experts could be needed for surveillance and verification of the works to ensure that they are in conformity with the general recommendations of the Environmental Department, the High Commission for Forestry, urban and rural councils as well as other stakeholders. They will conduct regular monitoring of the works right up to project handover.

The monitoring unit set up by the ONCF Project Supervision Office to organize the surveillance and monitoring system of the capacity expansion project will be established before the enterprises which won the contract start setting up on the site. Its staff will be on site before the commencement of works to organize and conduct a sensitization and training program for the staff of these enterprises, and to design an Emergency Plan, as well as a Health and Safety Plan for the installation and construction phases. Later on, it will have time

to prepare a sensitization and training program for ONCF staff and design an appropriate action plan.

The hierarchical positions of the monitoring units (one per line) under the Project Supervision Office are illustrated in the organization chart below:



9. Cost Estimates

The mitigation and attendant measures for the installation and construction phases specified in this ESMP will be included in the terms of reference of the bidding documents for implementation by bidding enterprises and suppliers. They comprise forms for best practices taken from the EMS Environment Manual of the ONCF, soil and water conservation and preservation measures and those related to human perception (deviations, noise reduction, work schedules, watering, etc….).

The following community sensitization measures are included in the operating costs of the ONCF: (i) rules to be observed to keep the population far from the scope of action of construction machinery and equipment during mechanized construction works; (ii) transport-related pollution issues; (iii) road safety issues and observance of the Highway Code.

The costs of the environmental and social measures outlined in the ESMP will be included in the total cost of works. They stand at **MAD 62.39 million** or 1.22% of the net project amount. The share of costs relating to surveillance and environmental monitoring activities, amounting to **MAD 1.29 million (net),** will be borne by the Control Mission attached to the ONCF Project Supervision Office.

The security/safety and engineering structures/footbridges components, reckoned as project components, are indeed technical solutions to problems relating to renovation of crossings and safety infrastructure. They stand at **MAD 266.9 million or 0.05%** of the net project amount.

Project Components	In MAD million		Ratio
	Project Costs	Share of environment-related costs	
1. Kenitra - Casa railway line			
1.1 Consolidation works			
1.1.1 Track	308.70	4.63	0.015
1.1.2 Overhead wire (goods)	179.13	0.90	0.005
1.1.2 Traffic signs (goods)	200.87	-	0
1.1.4 Telecommunications (goods)	170.43	-	0
1.1.5 Security-Safety (works)	200.87	4.02	0.02
1.1.6 Engineering structures and tunnel (works)	66.09	1.32	0.02
1.1.7 Casa port	82.61	0.83	0.01
1.1.8 Casa NN (works)	65.22	0.65	0.01
1.1.9 Small stations (works)	30.43	0.61	0.02
Base Cost 1.1 (Consolidation)	**1 304.35**		
Physical contingencies	130.43		
Financial contingencies	65.22		
Total 1.1	**1 500.00**		
1.2 Tripling of track			
1.2.1 Infrastructure (works)	1 504.35	30.09	0.02
1.2.2 Railway equipment	869.57		
Track (works)	304.35	6.09	0.02
Overhead wire and sub-stations (goods)	130.43	1.30	0.01
Stations (works)	173.91	3.48	0.02
Road signs (goods)	260.87		
1.2.3 Land acquisition	173.91		
1.2.4 Management and monitoring services	60.87	**1.22**	**0.02**
Base Cost 1.2 (track tripling)	**2 608.70**		
Physical contingencies	260.87		
Financial contingencies	130.43		
Total 1.2	**3 000.00**		
Grand Total 1 – Casa-Kenitra line	**4 500.00**	**55.13**	**1.23%**
2. Settat-Marrakesh railway line			
2.1 Upgrading works			
2.1.1 Track	26.09	0.39	0.015
2.1.2 Overhead wires (goods)	147.83	0.74	0.005
Base Cost 2.1	173.91		
Physical contingencies	17.39		
Financial contingencies	8.70		
Total 2.1	**200.00**		

2.2 Partial track doubling			
2.2.1 Infrastructure (works)	195.65	3.91	0.02
2.2.2 Railway equipment	138.26		
Track (works)	81.74	1.63	0.02
Overhead wire and sub-stations (goods)	51.30	0.51	0.01
Road signs (goods)	5.22		
2.2.3 Land acquisition	10.43		
2.2.4 Management and monitoring services	3.48	**0.07**	**0.02**
Base Cost 2.2	**347.83**		
Physical contingencies	34.78		
Financial contingencies	17.39		
Total 2.2	**400.00**		
Grand Total 2 – Settat-Marrakesh line	**600.00**	**7.26**	**1.82%**
Total 1+2	**5 100.00**	**62.39**	
Percentage	**100%**	**1.22% of net amount**	

10. Implementation Schedule and Reporting

In implementing this Environmental and Social Management Plan (ESMP), the monitoring unit attached to the ONCF Project Supervision Office will:

i. prepare a weekly note on the project containing the most relevant information relating to construction site safety for each of the railway lines (Casa-Kenitra and Settat-Marrakesh);

ii. prepare a monthly report on environmental and social monitoring. An assessment of the actions conducted (preventive control, site visits, training) will be presented in a monthly report. This report will be accompanied by all documents which can illustrate and justify the environmental control action: plans, photographs, non-conformity forms, minutes of meetings;

iii. prepare an environmental and social monitoring monthly report. It will be prepared according to the format defined by the EMS of the ONCF;

iv. prepare an environmental and social monitoring final report. At the end of the construction phase, a general environmental monitoring summary report of the project will be prepared. The Control Mission attached to the Project Supervision Office will conduct an assessment of the actions carried out in the field and gauge the efficiency of the measures and methods used on the construction site to prevent the temporary effects of the works.

Activities	Schedule	Reports
Environmental monitoring of the ESMP	Before, during and after the works	Monitoring report
Organization of information sessions on the ESMP	Before commencement of the works	Appraisal report
Information and sensitization for construction workers	Before commencement of the works	Appraisal report
Installation of sanitary facilities, oil-change areas and waste oil recovery tanks	Before commencement of the works	Monitoring report
Installation of construction site road signs, traffic deviations and speed breaks	Before and during the works	Monitoring report
Management of toxic product spillage	During the works	Monitoring report
Priority to the use of local labor	During the works	Appraisal report
Management of liquid and solid waste from the living quarters	Before and after the works	Surveillance report
Waste management	Before and after the works	Surveillance report
Management of the storage and spillage of toxic products	During the works	Surveillance report
Public information and sensitization on safety issues	Before and after the works	Appraisal report
Site rehabilitation (works sites and borrow pits)	After completion of works	Monitoring report
Planting of trees and revegetation	After completion of works	Monitoring report

Annex 1: Table of Projected Land Acquisitions											
line	Pk		Bridges and viaducts over wadis	Road bridges	Rail bridges	Length necessary (m)	Breadth necessary (m)	Net usable acreage (ha)	Nature	value (MAD/Ha)	Amount (MAD)
Casablanca - Kénitra	20+906		W. El Maleh			800	12.5	1.0	Bare land and bush	3 600 000	3 600 000
	23+118				x	500	8	0.4	Bare land and bush	3 400 000	1 360 000
	23+462				x	500	8	0.4	Undergrowth	3 400 000	1 360 000
	25+702				x	500	8	0.4		3 400 000	1 360 000
	26 +010 (on exist track)	Connection to the Mohammedia by-pass				800	12	1.0	Eucalyptus trees	6 800 000	6 528 000
		Start of by-pass									
		End of by-pass				11400	12	13.7	Undergrowth	3 000 000	41 040 000
	29+432		W. Nfifikh			800	12	1.0		3 000 000	2 880 000
	30+131			P S		100	50	0.5		3 000 000	1 500 000
	35+136				x	500	8	0.4		3 000 000	1 200 000
	36+729				x	500	8	0.4	Bare land and bush	3 000 000	1 200 000
	39+058				x	500	8	0.4		3 000 000	1 200 000
	42+128				x	500	8	0.4		3 000 000	1 200 000
	45+800		W. Koubar			800	12	1.0		3 000 000	2 880 000
	49+104				x	500	8	0.4		3 400 000	1 360 000
	51+960				x	500	8	0.4		3 400 000	1 360 000
	53+485		W. Cherrat			800	12	1.0	Bare land and bush	3 400 000	3 264 000
	61+125			PS		100	50	0.5		3 600 000	1 800 000
	65+813			PS		100	50	0.5		3 600 000	1 800 000
	66+317		W. Yquem			800	12	1.0	Bare land and bush	3 600 000	3 456 000

	67+600 (on exist track)	Start of connection to Rabat by-pass				10800	10	10.8		4 600 000	49 680 000
	79	Start of joint motorway and railway by-pass/corridor									
	94		W. Akreuch								
	100		W. Bouregreg								
	102	End of joint corridor									
	104	Start of connection				5200	10	5.2	Eucalyptus trees	6 800 000	35 360 000
	108	End of connection to Rabat by-pass									
	113+200				x	500	8	0.4		3 600 000	1 440 000
	117+094				x	500	8	0.4		3 600 000	1 440 000
	121+019				x	500	8	0.4		3600 000	1 440 000
	127+500			PI		100	10	0.1		3 600 000	360 000
	128			PS		100	50	0.5		3 600 000	1 800 000
	129+054			PS		100	50	0.5		3 600 000	1 800 000
	129+218			PS		100	50	0.5		3 600 000	1 800 000
	129+353			PS		100	50	0.5		3 600 000	1 800 000
Total for Casa-Kénitra line								**42.9**			**177 268 000**
Settat - Marrakech	127+717			PS		100	35	0.4		1 400 000	490 000
	131+096			PS		100	35	0.4		1 400 000	490 000
	135+321		W. Abdalah			600	8	0.5		1 400 000	672 000
	146+792			PS		100	35	0.4		1 400 000	490 000
	147+065			PS		100	35	0.4		1 400 000	490 000
	170+953				S mouton	500	8	0.4		1 000 000	400 000

	174+785		W. Bouchene			600	8	0.5		1 000 000	480 000
	194+175		W. Bourlal			600	8	0.5		1 000 000	480 000
	201+450		W. Bousegana			600	8	0.5	Bare land and bush	1 000 000	480 000
	210+215			PS		100	35	0.4		600 000	210 000
	214+535		wadi			600	8	0.5		600 000	288 000
	216+041			PS		100	35	0.4		600 000	210 000
	225+688		wadi			600	8	0.5		600 000	288 000
	227+559		wadi			600	8	0.5		600 000	288 000
	232+668			PS		100	35	0.4		1 000 000	350 000
	237+240		W. Tensift			600	8	0.5		1 800 000	864 000
	240+934			PS		100	35	0.4		1 800 000	630 000
	243+404				x	500	8	0.4	Oasis swamps	1 800 000	720 000
	244+620			PS		100	35	0.4	Oasis swamps	1 800 000	630 000
Total for Settat – Marrakech line								**7.8**			**8 950 000**
Project Total								**50.7**			**186 218 000**

Annex 2: ENVIRONMENTAL AND SOCIAL MANAGEMENT PLAN MATRIX									
Project Phases	**Impact Generating Activities**	**Negative Impacts**	**Mitigation and Consolidation Measures**	**Responsibility**			**Indicator**	**Implementation Period**	**Total Cost (MAD million)**
				Execution	**Monitoring**	**Control**	**Implementation**		
PREPARATION	Vacating the right-of-way	Loss of activities, crops and income in Casablanca-Kenitra (connection tracks in Rabat and Mohammedia)	Compensation of affected persons by the Government prior to implementation	ONCF/enterprise	PSO-ONCF/CS	CS / DE	Appraisal and monitoring reports	**Before the works**	**200**
	Procurement of land from the forest estate	Reduction of forest surface area	The procurement will be in accordance with the provisions of Dahir No. 1/58/382 of 17 April 1959 governing lands which are part of the forest regime and are necessary for the execution of public utility projects, with the signing of an agreement between the ONCF and the HCEF.	enterprise / ONCF	ONCF/HCEF	CS / DE /ONCF	Appraisal and monitoring reports	**Before the works**	
		Loss of activities, crops and income in Settat-Marrakesh	The commencement of construction works will be scheduled after the harvest season	ONCF/enterprise	PSO-ONCF/CS	CS / DE	Appraisal and monitoring reports	**Before the works**	**12**
	Deposit of excavated and quarry material for the connecting track work sites	Risk of land speculation	Initiate negotiations with landowners before the opening of deposit areas	Enterprise	PSO-ONCF	CS / DE /ONCF	Retrospective appraisal report	Before the works	-
			Displacement of networks	ONCF/enterprise	PSO-ONCF	CS / DE		Before works + Establishment of construction site + Construction phase	Included in the cost of works
	Circulation of machinery	Pollution from dust, noise and exhaust fumes	Regular watering of the construction site	Enterprise	PSO-ONCF	CS / DE	Monitoring report	Establishment of works site + Construction phase	Included in the cost of works
	Construction of the platform and deviation tracks	Risk of accident	Construction engine traffic plan + Installation of road signs	Enterprise	PSO-ONCF	ONCF	Community sensitization survey	Establishment of works site + Construction phase	Included in the cost of works
	Installation and commissioning of the living quarters of the enterprise	Risk of accident	Protection during transportation of materials	Enterprise	PSO-ONCF	CS / DE	Monitoring report		Included in the cost of works
		Risk of fire	Firefighting equipment	Enterprise	PSO-ONCF	CS / DE	Monitoring report	Installation + Construction phase	Included in the cost of works
	Vehicle parking and engine oil leakage	Soil destruction through compacting at the living quarters of the enterprise	Rehabilitate the living quarters land through revegetation of the site	Enterprise	PSO-ONCF	CS / DE /ONCF	Population survey and Monitoring report	End of works	Included in the cost of works
		Production of construction site waste and risk of soil and water pollution	Establishment of a waste disposal system on the construction sites	Enterprise/ urban council / rural council/ province	PSO-ONCF	CS / DE	Monitoring report	Establishment of works site + Construction phase	Included in the cost of works

			Establishment of the living quarters of the enterprise far from wells, watercourses and residential areas	Enterprise/ urban council / rural council/ province	PSO-ONCF	CS / DE	Survey on contractors	Establishment of construction site	Included in the cost of works
	Excavation, compacting of soils with vibratory compactors, crushing, asphalting	Dust and gas emissions	Regular watering of the platforms and regulation of the water content of materials during unloading	Enterprise	PSO-ONCF	CS / DE	Surveillance report	Establishment of works site + Construction phase	Included in the cost of works
	Construction of the platform, stripping, excavated material, backfill, excavation		Cover loaded excavated material and rubble with tarpaulin	Enterprise	PSO-ONCF	CS / DE	Surveillance report	Construction phase	Included in the cost of works
	Circulation and parking of construction vehicles and machinery	Noise pollution, gas emissions	Verification of construction machinery	Enterprise	PSO-ONCF	CS / DE	Monitoring report	Establishment of works site + Construction phase	Included in the cost of works
		Respiratory illnesses	Staff protection equipment		PSO-ONCF	CS / DE	Staff survey		Included in the cost of works
	Voluntary or inadvertent discharge of chemical pollutants, hydrocarbons; machine maintenance	Pollution of surface water, groundwater by hydrocarbons and other waste	Collection of waste oils in watertight barrels and recycling	Enterprise	PSO-ONCF	CS / DE	Monitoring report	Establishment of works site + Construction phase	Included in the cost of works
	Dumping of rubble and excess excavated material	Soil pollution by waste	Establishment of a construction waste collection and disposal system	Enterprise	PSO-ONCF	CS / DE	Surveillance report	Establishment of construction site	Included in the cost of works
			Setting up of a mechanical workshop with specific equipment	Enterprise	PSO-ONCF	CS / DE	Surveillance report	Installation + Construction phase	Included in the cost of works
	Functioning of the construction site	Pollution of low-lying areas	Avoid spilling rubble, excess excavated material and hydrocarbons	Enterprise	PSO-ONCF	CS / DE	Surveillance report	Installation + Construction phase	Included in the cost of works
		Soil degradation	Rehabilitation of disposal areas	Enterprise	PSO-ONCF	CS / DE	Surveillance report	End of works	Included in the cost of works
		Destruction or loss of vegetation	Revegetation of disposal areas after grading	Enterprise	PSO-ONCF	CS / DE	Surveillance report	End of works	Included in the cost of works
			Planting of trees	Enterprise	PSO-ONCF	CS / DE	Surveillance report	End of works	0,5
		Discomfort from garbage disposal	Garbage collection and sorting	Enterprise/ urban council / rural council/ province	PSO-ONCF	CS / DE	Surveillance report	Duration of works	Included in the cost of works
			Dangerous waste in water-tight containers collected for treatment and/or disposal		PSO-ONCF	CS / DE			Included in the cost of works
		Disruption from scrap metal disposal (catenary scaffolding, cross ties, rails…)		enterprise / ONCF	PSO-ONCF	CS / DE			Included in the cost of works
		Risk of accident	Community sensitization on the construction phase and rules to be observed; keep the population far from the scope of action of construction machinery and equipment during mechanized construction works	Enterprise/ urban council / rural council/ province	PSO-ONCF	CS / DE	Surveillance report	Before the works	

			Construction of a solid fence	Enterprise	PSO-ONCF	CS / DE		End of works	Included in the cost of works
		Risk of accident and disruption of access to homes and social facilities	Set up works site and speed limit signs near socio-economic and cultural facilities	Enterprise	PSO-ONCF	CS / DE	Surveillance report	Establishment of works site + Construction phase	Included in the cost of works
		Disruption of traffic	Construction deviation routes with road signs and information panels on the various phases	Enterprise	PSO-ONCF	CS / DE	Surveillance report	Before the works	Included in the cost of works
		Spread of STIs	Organize sensitization campaigns on STI prevention	Enterprise	PSO-ONCF	CS / DE	Population survey	Establishment of works site + Construction phase	0,1
OPERATION AND MAINTENANCE	Circulation of trains	Noise pollution and vibrations	Grinding of the railheads and technical inspection of the tracks and railroad cars	ONCF structures responsible for technical inspection	PSO-ONCF	CS / DE	Appraisal report	Operational phase	Included in maintenance costs
			Installation of acoustic protection (solid fences in residential areas)	enterprise / ONCF	PSO-ONCF	CS / DE /ONCF	Appraisal report	End of works	Included in the cost of works
			Limit acoustic pressure to a maximum of 60 decibels between 6:00 and 22:00, and a maximum of 55 decibels between 22:00 and 6:00		PSO-ONCF	CS / DE /ONCF			
	Increase in railway traffic and speed	Increased risk of accident at guarded and unguarded level crossings	Community sensitization on transport safety issues	ONCF	PSO-ONCF	CS /ONCF	Appraisal report	Establishment of works site + Construction phase	Included in operating costs
			Construction of 30 footbridges/underground passages Organization of sensitization and information campaigns on the highway code	ONCF and structure responsible for road safety	ONCF and structure responsible for road safety	CS /ONCF	Population survey	Works and operational phase	Included in operating costs
			Establishment of pedestrian crossings	ONCF	PSO-ONCF	CS /ONCF	Population survey	Construction phase + Operational phase	Included in the cost of works
	Commissioning of tracks	Degradation of constituent elements	Periodic maintenance	ONCF	PSO-ONCF	CS /ONCF	Monitoring report	Operational phase	Included in maintenance costs
		Dirty nature of the track	Regular sweeping (with leaf blowers) and cleaning of the track	ONCF	PSO-ONCF	CS /ONCF	Monitoring report	Operational phase	Included in maintenance costs

Publication of PUD on 13 Oct. 2010

المملكة المغربية

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وزارة التجهيز والنقل

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مديرية الشؤون الإدارية والقانونية

إعلان عن وضع ونشر مشروع مرسوم يعلن أنه من المنفعة العامة القيام بأشغال تثليث السكة الحديدية بين سيدي الطيبي والقنيطرة بين النقطتين الكيلومتريتين 118,750 و120,840 من الخط الحديدي الرابط بين الدارالبيضاء ووفاس حيث سيتم نشره بالجريدة الرسمية عدد 5111 بتاريخ 13 أكتوبر 2010 وتنزع بموجبه ملكية القطعة الأرضية اللازمة لهذا الغرض.

يوجد الملف وكذا الدفتر المعد لتدوين ملاحظات من يهمهم الأمر بمكتب جماعة سيدي الطيبي أثناء أوقات العمل، وذلك لمدة شهرين ابتداء من تاريخ نشر مشروع المرسوم الآتي نصه بالجريدة الرسمية:

*****

مشروع مرسوم يعلن أنه من المنفعة العامة القيام بأشغال تثليث السكة الحديدية بين سيدي الطيبي والقنيطرة بين النقطتين الكيلومتريتين 118,750 و120,840 من الخط الحديدي الرابط بين الدارالبيضاء ووفاس

المادة الأولى: يعلن أنه من المنفعة العامة القيام بأشغال تثليث السكة الحديدية بين سيدي الطيبي والقنيطرة بين النقطتين الكيلومتريتين 118,750 و120,840 من الخط الحديدي الرابط بين الدارالبيضاء ووفاس ؛

المادة الثانية: تنزع بناء على ما ذكر، ملكية القطعة الأرضية المعلم عليها باللون الأحمر في التصميم التجزيئي ذي المقياس 1/1000 المضاف إلى أصل هذا المرسوم والمبينة في الجدول التالي:

رقم القطعة الأرضية بالتصميم	مراجعها العقارية وأسماؤها	أسماء وعناوين الملاك أو المفروض أنهم الملاك	مساحتها			ملاحظات
			س	ار	ه	
1	الملك المسمى "ضاية الحركة II" الرسم العقاري عدد R /9546	الجماعة السلالية : اولاد امبارك – مغايتة – اولاد موسى- الحنشة	49	29	02	

المادة الثالثة :

يخول حق نزع الملكية إلى المكتب الوطني للسكك الحديدية؛

المادة الرابعة :

يعهد بتنفيذ هذا المرسوم الذي ينشر بالجريدة الرسمية إلى وزير التجهيز والنقل والمدير العام للمكتب الوطني للسكك الحديدية كل واحد منهما فيما يخصه.

Summary presentation of EMS to secure ISO 14001 certification

ONCF

Fiche Projet SME

Projet : Mise en place d'un Système de Management Environnemental et certification ISO 14001 de 4 sites

1- Objectifs du projet

- Renforcer l'image de marque de l'ONCF par la mise en œuvre d'un système de management environnemental dans une perspective de développement durable et d'amélioration continue
- Intégrer l'environnement comme l'un des facteurs de progrès de l'ONCF
- Viser à terme la conformité réglementaire
- Avoir un encadrement et un personnel soudé et impliqué dans la prévention et l'amélioration des performances environnementales
- Une maîtrise de la dimension économique (investissements nécessaires, optimisation des consommations et ressources, ...)
- Pouvoir répondre aux demandes et sollicitations des partenaires (administrations, collectivités, clients, ...)

2- Consistance du Projet

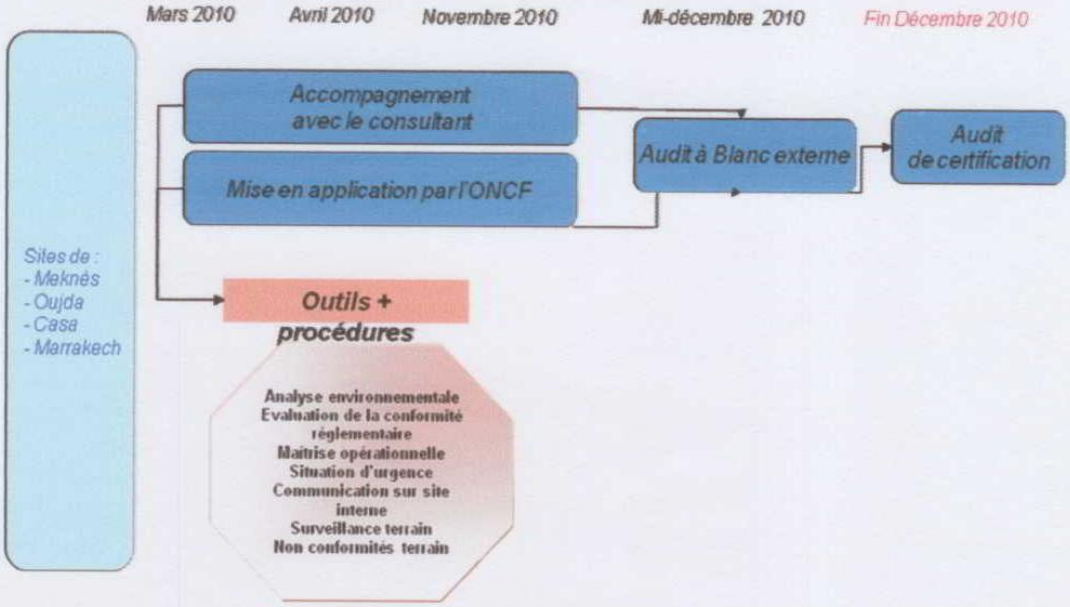
- Mettre en évidence les principales actions à mener dans le cadre de la protection de l'environnement, en cohérence avec la stratégie définie ;
- Planifier la mise en conformité réglementaire ;
- Donner les moyens aux acteurs de l'ONCF d'estimer les investissements nécessaires pour atteindre les objectifs de développement environnemental ;
- Mise en place du SME : certification ISO 14001 de 4 sites.
- Déploiement du projet : Déploiement de la démarche environnementale à l'ensemble des sites ONCF 2011-2013.

3- Principales étapes du projet

- Diagnostic environnemental
- Schéma Directeur de mise en Œuvre d'un SME au sein de l'ONCF
- Réalisation de fiches de bonnes pratiques pour 4 thèmes
  - Gestion des entreprises,
  - Gestion des déchets,
  - Gestion des produits dangereux,
  - Transport des Matières dangereuses.
- Elaboration d'une Politique environnementale de l'ONCF
- Certification de 4 sites pilotes à fin 2010
  - Processus MAD matériel roulant (RV4, RF4, RP4) : Ateliers Grands Entretiens Oujda
  - Processus FRET (Maintenance, conduite, formation des trains) : Casa Roches noires
  - Processus Voyageurs (RV) : Gare Marrakech
  - Processus MAD Infrastructure (R3) : DRIC Meknès
- Déploiement de la démarche environnementale à l'ensemble des sites ONCF 2011-2013.

ONCF

4- Déroulement de la Démarche SME au niveau des sites pilotes



5- Echéancier de certification ISO14001 des sites pilotes à Fin Décembre 2010

- Entre mars et mai: Analyse environnementale (aspects et impacts) + évaluation de la conformité à la réglementation applicable + établissement du programme de management environnemental – démarrer dès cette période la détection et le traitement des non-conformités environnementales (incidents et accidents environnements, plaintes, ...)
- Entre juin et Octobre : Création des documents manquants et complément des documents existants, avec mise en place des procédures de maîtrise opérationnelle et de situations d'urgence adaptées aux sites pilotes et activités associées, avec mise en place des plans de formation nécessaires et des moyens de surveillance et mesurage
- Novembre : Revue de direction
- Mi-décembre : Audit à blanc
- Fin décembre : Audit initial de certification