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Report No: PAD1051

INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT

PROJECT APPRAISAL DOCUMENT

ON A

PROPOSED LOAN  
IN THE AMOUNT OF EURO 178.7 MILLION (US\$200 MILLION EQUIVALENT)

AND A

PROPOSED GRANT FROM THE  
MIDDLE EAST AND NORTH AFRICA REGION-WIDE TECHNICAL ASSISTANCE  
MULTI-DONOR TRUST FUND  
IN THE AMOUNT OF US\$909 THOUSAND

TO THE

REPUBLIC OF TUNISIA

FOR A

ROAD TRANSPORT CORRIDORS PROJECT

JUNE 16, 2015

*Transport & ICT  
Middle East and North Africa*

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## CURRENCY EQUIVALENTS

(Exchange Rate Effective 30 April 2015)

Currency Unit = Tunisian Dinar (TND)  
 TND 1.91195 = US\$1  
 EUR 0.89342 = US\$1

FISCAL YEAR  
 January 1 – December 31

## ABBREVIATIONS AND ACRONYMS

ADEB	Budgetary Decision Support System (“ <i>Système d’Aide à la Décision Budgétaire</i> ”)		<i>des Ponts et Chaussées</i> ”)
AfDB	African Development Bank	DREH	MEHLP Regional Directorates ( <i>Directions Régionales de l’Équipement et de l’Habitat</i> )
CBT	Central Bank of Tunisia	EIB	European Investment Bank
CETEC	Center for Construction Techniques and Testing (“ <i>Centre d’Essais et des Techniques de la Construction</i> ”)	ESIA	Environmental and Social Impact Assessment
DA	Designated Account	ESMF	Environmental and Social Management Framework
DAF	Administrative and Financial Directorate (“ <i>Direction Administrative et Financière</i> ”)	ESMP	Environmental and Social Management Plan
DEER	Directorate of Road Use and Maintenance (“ <i>Direction de l’Exploitation et de l’Entretien Routier</i> ”)	FADES	Arab Fund for Economic and Social Development (“ <i>Fonds Arabe pour le Développement Économique et Social</i> ”)
DGAFJC	General Directorate for Land and Legal issues (“ <i>Direction Générale des Affaires Foncières, Juridiques et du Contentieux</i> ”)	FM	Financial Management
DGPC	General Directorate of Roads and Bridges (“ <i>Direction Générale</i>	GDP	Gross Domestic Product
		GoT	Government of Tunisia
		GRM	Grievance Redress Mechanism (Project)
		GRS	Grievance Redress Service (World Bank)
		GENDR	Global Practice for

	Environment and Natural Resource Management (World Bank)
GGODR	Global Practice for Governance (World Bank)
GSURR	Global Practice for Social, Urban and Rural Development (World Bank)
GTIDR	Global Practice for Transport and ICT (World Bank)
HDM	Highway Development and Management Model
IBRD	International Bank for Reconstruction and Development
ICB	International Competitive Bidding
IFI	International Financial Institution
IFR	Interim Financial Report
IEG	Independent Evaluation Group
IS	Implementation Support
IRI	International Roughness Index
IRR	Internal Rate of Return
ISR	Implementation Status and Results Report
LEGEN	Environmental and International Law Department (World Bank)
MDEAF	Ministry of State Lands and Real Property (“ <i>Ministère du Domaine de l’État et des Affaires Foncières</i> ”)
MEHLP	Ministry of Equipment, Habitat and Land Planning (“ <i>Ministère de l’Équipement, de</i>

	<i>l’Habitat et de l’Aménagement du Territoire</i> ”)
MDTF	Multi-Donor Trust Fund
MENA	Middle East and North Africa
MNCTN	Tunisia Country Unit (World Bank)
NCB	National Competitive Bidding
NPV	Net Present Value
OP	Operational Policy (of the World Bank)
PAP	Project-Affected People
PEFA	Public Expenditure and Financial Accountability
PIU	Project Implementation Unit
RAP	Resettlement Action Plan
RN	National Road (“ <i>Route Nationale</i> ”)
RPF	Resettlement Policy Framework
RR	Regional Road (“ <i>Route Régionale</i> ”)
SBD	Standard Bidding Documents
SETRA	French roads and highways research agency (“ <i>Service d’études techniques des routes et autoroutes</i> ”)
SORT	Systematic Operations Risk-rating Tool
TND	Tunisian Dinar
TTL	Task Team Leader
TRANSTRAC	Transport Sector Support for Transition Countries
WFALA	Loan Operations Department (World Bank)
WHO	World Health Organization

Regional Vice President:	Hafez Ghanem
Acting Country Director:	Joelle Dehasse Businger
Senior Practice Director:	Pierre Guislain
Acting Practice Manager:	Olivier Le Ber
Task Team Leaders:	Vickram Cuttaree, Andrew Losos



**REPUBLIC OF TUNISIA**  
**Road Transport Corridors Project**

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**PAD DATA SHEET**  
*Republic of Tunisia*  
*Road Transport Corridors (P146502)*  
**PROJECT APPRAISAL DOCUMENT**  
*MIDDLE EAST AND NORTH AFRICA*

Report No.: PAD1051

<b>Basic Information</b>			
Project ID P146502	EA Category B - Partial Assessment	Team Leader(s) Vickram Cuttaree, Andrew Michael Losos	
Lending Instrument Investment Project Financing	Fragile and/or Capacity Constraints [ ]		
	Financial Intermediaries [ ]		
	Series of Projects [ ]		
Project Implementation Start Date 08-Jul-2015	Project Implementation End Date 30-Jun-2020		
Expected Effectiveness Date 30-Sep-2015	Expected Closing Date 31-Dec-2020		
Joint IFC No			
Acting Practice Manager/Manager Olivier P. Le Ber	Senior Global Practice Director Pierre Guislain	Acting Country Director Joelle Dehasse Businger	Regional Vice President Hafez M. H. Ghanem
<b>Borrower: REPUBLIC OF TUNISIA</b>			
Responsible Agency: Ministry of Equipment, Habitat, and Land Planning ( <i>Ministère de l'Équipement, de l'Habitat, et de l'Aménagement du Territoire</i> )			
Contact: Telephone No.:	Slah Zouari 21671252514	Title: Email:	Directeur Général de Ponts et Chaussées dgpc@mehat.gov.tn
<b>Project Financing Data(in USD Million)</b>			
<input checked="" type="checkbox"/> Loan	<input type="checkbox"/> IDA Grant	<input type="checkbox"/> Guarantee	
<input type="checkbox"/> Credit	<input checked="" type="checkbox"/> Grant	<input type="checkbox"/> Other	
Total Project Cost:	231.01	Total Bank Financing:	200.00



Financing Gap:	0.00									
<b>Financing Source</b>							<b>Amount</b>			
Borrower							30.10			
International Bank for Reconstruction and Development (IBRD)							200.00			
Middle East and North Africa Region-wide Technical Assistance Multi-Donor Trust Fund							0.91			
Total							231.01			
<b>Expected Disbursements (in USD Million)</b>										
Fiscal Year	2016	2017	2018	2019	2020	2021	0000	0000	0000	0000
Annual	2.51	35.40	69.00	70.00	20.00	4.00	0.00	0.00	0.00	0.00
Cumulative	2.51	37.91	106.91	176.91	196.91	200.91	0.00	0.00	0.00	0.00
<b>Institutional Data</b>										
<b>Practice Area (Lead)</b>										
Transport & ICT										
<b>Contributing Practice Areas</b>										
<b>Cross Cutting Topics</b>										
[ ] Climate Change										
[ ] Fragile, Conflict & Violence										
[ ] Gender										
[ ] Jobs										
[ ] Public Private Partnership										
<b>Sectors / Climate Change</b>										
Sector (Maximum 5 and total % must equal 100)										
Major Sector				Sector		%	Adaptation Co-benefits %		Mitigation Co-benefits %	
Transportation				Rural and Inter-Urban Roads and Highways		100				
Total						100				
<input checked="" type="checkbox"/> I certify that there is no Adaptation and Mitigation Climate Change Co-benefits information applicable to this project.										
<b>Themes</b>										
Theme (Maximum 5 and total % must equal 100)										

Major theme	Theme	%
Financial and private sector development	Infrastructure services for private sector development	50
Trade and integration	Export development and competitiveness	30
Trade and integration	Regional integration	20
Total		100

### Proposed Development Objective(s)

The objectives of the Project are: (i) to reduce transportation cost and time and improve road safety on select road corridors between lagging regions and more developed areas in the territory of Tunisia; and (ii) to strengthen the capacity of the Ministry of Equipment, Habitat and Land Planning in road asset management.

### Components

Component Name	Cost (USD Millions)
Road Corridor Improvement	228.20
Road Network Management Improvement	2.80

### Systematic Operations Risk-Rating Tool (SORT)

Risk Category	Rating
1. Political and Governance	High
2. Macroeconomic	Substantial
3. Sector Strategies and Policies	Moderate
4. Technical Design of Project or Program	Low
5. Institutional Capacity for Implementation and Sustainability	Moderate
6. Fiduciary	Moderate
7. Environment and Social	Substantial
8. Stakeholders	Moderate
9. Other	
<b>OVERALL</b>	<b>Substantial</b>

### Compliance

#### Policy

Does the project depart from the CAS in content or in other significant respects?	Yes [ ]	No [ X ]
Does the project require any waivers of Bank policies?	Yes [ ]	No [ X ]
Have these been approved by Bank management?	Yes [ ]	No [ ]
Is approval for any policy waiver sought from the Board?	Yes [ ]	No [ ]
Does the project meet the Regional criteria for readiness for implementation?	Yes [ X ]	No [ ]

<b>Safeguard Policies Triggered by the Project</b>	<b>Yes</b>	<b>No</b>	
Environmental Assessment OP/BP 4.01	<b>X</b>		
Natural Habitats OP/BP 4.04		<b>X</b>	
Forests OP/BP 4.36	<b>X</b>		
Pest Management OP 4.09		<b>X</b>	
Physical Cultural Resources OP/BP 4.11		<b>X</b>	
Indigenous Peoples OP/BP 4.10		<b>X</b>	
Involuntary Resettlement OP/BP 4.12	<b>X</b>		
Safety of Dams OP/BP 4.37		<b>X</b>	
Projects on International Waterways OP/BP 7.50		<b>X</b>	
Projects in Disputed Areas OP/BP 7.60		<b>X</b>	
<b>Legal Covenants</b>			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Schedule 2, Section I.A.1: Creation and maintenance of Project Implementation Unit	<b>X</b>		CONTINUOUS
<b>Description of Covenant</b>			
The Borrower, through the MEHLP, shall ensure that the Project is implemented by the DGPC with the assistance of the Project Implementation Unit. The Borrower, through the MEHLP, shall, throughout the implementation of the Project, ensure that the DGPC and the Project Implementation Unit: (i) are at all times maintained with qualified managers and competent staff and adequate resources; and (ii) collaborate closely with all other Ministries or agencies of the Borrower involved in the implementation of the Project, as described in the Project Operations Manual.			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Schedule 2, Section I.C.6: Execution of the Action Plan concerning legacy resettlement issues		Prior to beginning of works on plots affected by the Action Plan or adjacent to plots affected by the Action Plan	ONCE
<b>Description of Covenant</b>			
The Borrower shall implement the Action Plan and any additional measures agreed with the World Bank pursuant to the Action Plan, in a manner satisfactory to the World Bank.			
<b>Name</b>	<b>Recurrent</b>	<b>Due Date</b>	<b>Frequency</b>
Schedule 2, Section II.A.2: Mid-term review		30-Sep-2017	ONCE
<b>Description of Covenant</b>			
Notwithstanding the provisions of paragraph A.1 of this Section II, the Borrower shall:			

- (a) prepare, under terms of reference satisfactory to the Bank, and furnish to the Bank, on or about September 30, 2017, or such later date as the Bank shall request, a mid-term report integrating the results of the monitoring and evaluation activities performed pursuant to paragraph A.1 above, on the progress achieved in the carrying out of the Project during the period preceding the date of said report and setting out the measures recommended to ensure the efficient carrying out of the Project and the achievement of the objectives thereof during the period following such date; and
- (b) review with the Bank, by December 31, 2017, or such later date as the Bank shall request, the report referred to in clause (a) of this paragraph A.2, and, thereafter, take all measures required to ensure the efficient completion of the Project and the achievement of the objectives thereof, based on the conclusions and recommendations of the said report and the Bank's views on the matter.

### Conditions

Source Of Fund	Name	Type

### Description of Condition

### Team Composition

#### Bank Staff

Name	Role	Title	Specialization	Unit
Vickram Cuttaree	Team Leader (ADM Responsible)	Senior Infrastructure Economist	Senior Infrastructure Economist	GTIDR
Andrew Michael Losos	Team Leader	Transport Specialist	Transport Specialist	GTIDR
Walid Dhouibi	Procurement Specialist	Procurement Specialist	Procurement Specialist	GGODR
Shirley Foronda	Financial Management Specialist	Financial Management Specialist	Financial Management Specialist	GGODR
Andrianirina Michel Eric Ranjeva	Team Member	Finance Officer	Finance Officer	WFALA
Besma Saadi Refai	Team Member	Team Assistant	Team Assistant	MNCTN
Franck Bessette	Team Member	Sr Financial Management Specialist	Sr Financial Management Specialist	GGODR
Jean-Charles Marie De Daruvar	Counsel	Senior Counsel	Senior Counsel	LEGAM
John R. Butler	Safeguards Specialist	Lead Social Development Specialist	Lead Social Development Specialist	GSURR
Khalid Boukantar	Team Member	Program Assistant	Program Assistant	GTIDR
Maged Mahmoud Hamed	Safeguards Advisor	Regional Safeguards Adviser	Regional Safeguards Adviser	OPSOR

Maria Marcela Silva	Peer Reviewer	Practice Manager	Practice Manager	GTIDR
Mehdi El Batti	Team Member	Financial Management Analyst	Financial Management Analyst	GGODR
Mohammed Dalil Essakali	Peer Reviewer	Senior Infrastructure Economist	Senior Infrastructure Economist	GTIDR
Mustapha Benmaamar	Peer Reviewer	Sr Transport. Spec.	Sr Transport. Spec.	GTIDR
Narjes Jerbi	Team Member	Program Assistant	Program Assistant	MNCTN
Nathalie S. Munzberg	Counsel	Senior Counsel	Senior Counsel	LEGEN
Nina Chee	Safeguards Advisor	Lead Environmental Specialist	Lead Environmental Specialist	OPSOR
Olivier P. Le Ber	Team Member	Lead Transport Specialist	Lead Transport Specialist	GTIDR
Rebecca Emilie Anne Lacroix	Safeguards Specialist	Social Development Specialist	Social Development Specialist	GSURR
Ruma Tavorath	Safeguards Specialist	Senior Environmental Specialist	Senior Environmental Specialist	GENDR
Said Dahdah	Team Member	Sr Transport. Spec.	Sr Transport. Spec.	GTIDR
Taoufiq Bennouna	Team Member	Sr Natural Resources Mgmt. Spec.	Sr Natural Resources Mgmt. Spec.	GENDR

#### Extended Team

Name	Title	Office Phone	Location
Alexandra Spenol	Transport Economist	+996 (770) 43 53 54	Doha, Qatar
Jacques Espalieu	Road and Highway Engineer	+33 5 (53) 07 66 00	Bordeaux, France
Michel Audige	Transport Policy Specialist	+1 (240) 485-7520	Washington, USA
Mohamed Ghourabi	Environmental Safeguards Specialist	+216 28 60 08 65	Tunis, Tunisia

#### Locations

Country	First Administrative Division	Location	Planned	Actual	Comments
Tunisia	Zaghwan	Gouvernorat de Zaghuan	X		RN4 between El Fahs and Siliana

Tunisia	Zaghwan	Gouvernorat de Zaghouan	X		RR133 between Jebel El Oust and Zaghouan
Tunisia	Susah	Gouvernorat de Sousse	X		RN12 between Sousse and Kairouan
Tunisia	Silyanah	Gouvernorat de Siliana	X		RN4 between El Fahs and Siliana
Tunisia	Al Qayrawan	Gouvernorat de Kairouan	X		RN12 between Sousse and Kairouan
<b>Consultants (Will be disclosed in the Monthly Operational Summary)</b>					
Consultants Required ?		Consulting services to be determined			



## I. STRATEGIC CONTEXT

### A. Country Context

1. **Tunisia is currently facing significant economic challenges.** Tunisia is an upper middle-income country, whose average annual growth of 5 percent (1997 to 2007) placed it among the fastest growing countries of the Middle East and North Africa (MENA) region. Although it was nearly halved between 2000 and 2010, poverty headcount is still at 15.5 percent nationally. Moreover, economic performance deteriorated sharply in 2011, with a gross domestic product (GDP) contraction of 1.9 percent and total unemployment rising to 18 percent that year from 13 percent the year before<sup>1</sup>. After recovering in 2012, growth stagnated at 2.5 percent in 2013, a pace insufficient to improve unemployment and poverty, with the outlook remaining uncertain.

2. **Development in Tunisia is regionally differentiated,** with the three largest cities – Tunis, Sfax and Sousse – accounting for 85 percent of national GDP as well as most of the industry and services and all located on the eastern coast. Poverty rates surpass 30 percent in the most disadvantaged regions, notably the predominantly rural western part of the country. The hinterlands and the inland areas, whose economies center on agriculture and mixed farming, have not benefited from economic growth in the same way as the coast. Public services and economic opportunity lag behind the coastal areas, though the latter do contain pockets of poverty.

3. **These disparities have been growing stronger in the past decade, and the general perception is that coastal regions have been receiving a disproportionate share of public investment (more than 65 percent since 2000).** The extreme poverty headcount in Greater Tunis is currently 1.4 percent compared to 14.3 percent in the Center-West region, the latter being more than three times the national average. Poverty headcount overall in the Center-West approaches 30 percent, the highest in Tunisia. Similarly, the unemployment rate in western regions (about 20 percent versus 16 percent at the national level) is almost double the level in coastal regions. A study on regional development, produced by the Ministry of Regional Development and Planning in 2012, identified Zaghuan, Siliana and Kairouan among the poorest governorates in Tunisia.

4. **The development of lagging regions is considered a high priority objective by the Government.** The Government of Tunisia (GoT) has decided to give more priority to reducing regional inequalities and to invest in regional infrastructure to increase connectivity and development of lagging regions, identified as the North-West, Center-West and South-West regions of Tunisia. Inadequate basic infrastructure such as roads in the Governorates of Sidi Bouzid, Siliana and Kasserine and certain regions of the south, is responsible for the slower rate of socio-economic development, compared to the coastal areas.

5. **The revolution raised expectations among citizens that the Government will make progress against poverty and unemployment.** One of the main points of contention of the

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<sup>1</sup> World Development Indicators (2014). Based on national estimates.



revolution was an expressed popular desire for greater sharing of economic benefits, and for policies aimed at improving the economic prospects of the country's poor. Indeed, poverty, unemployment and the growing inequality between regions are among the factors that contributed to triggering the revolution. Under the conditions prevailing in post-revolutionary Tunisia, improvement of public infrastructure, especially roads connecting lagging regions to growth centers, is considered by the government and the public to be a priority to generate private sector-led growth. The private sector has expressed a willingness to invest in the lagging regions if connectivity can be improved and transportation costs reduced. The recent presidential and parliamentary elections have not changed the pressure to address the imbalance between the more developed and lagging regions and support to private sector-led investment and job creation.

**6. The regions served by the roads to be improved by this project are among those which have shared least in the benefits of Tunisia's past economic growth.** The Center-West and North-West regions are the epicenter of Tunisia's regional disparity problem. Indeed, the Tunisian revolution began in 2010 in Sidi Bouzid governorate, just south of the Siliana governorate, in the Center-West. Since then, the Center-West and North-West have been among the most restive areas of the country, with frequent demonstrations of public frustration. These regions' relative economic hardship has yet to be relieved by the post-revolutionary order. National Road 12 (*Route Nationale* - RN12) links Sousse, one of the country's prime economic centers on the coast along with Tunis and Sfax, with Kairouan in the Center-West region. The latter is the poorest region of Tunisia, with an unemployment rate exceeding 15 percent and a poverty rate of 32 percent in 2013<sup>2</sup> – two years after the revolution. There was a consumption gap of 56 percent between Greater Tunis and the Center-West in 2013. The governorate of Siliana, endpoint of the section of RN4 to be improved by this project, is in the North-West region, second only to the Center-West in unemployment (over 20 percent) and poverty headcount (at 26 percent), with a consumption gap of 27 percent with Greater Tunis. Annex 6 includes a map of Tunisia with specific location of the roads to be improved.

## **B. Sectoral and Institutional Context**

**7. The road sector in Tunisia plays a vital role in the economy.** It represents about 7 percent of GDP, 15 percent of public and private investment and 4.5 percent of manpower. In Tunisia, the road network accounts for virtually all movement of persons and over 80 percent of goods transportation. The road network consists of 19,440 km of classified roads (*routes classées*) under the responsibility of the Ministry of Equipment, Habitat, and Land Planning (MEHLP), including 356 km of highways, 4,745 km of national roads, 6,495 km of regional roads (*Route Régionale* – RR), and 5,928 km of local roads. An additional 1,915 km of roads are being reclassified and there are 50,000 km of rural (unclassified) roads. The local roads receive the least maintenance and their state reflects this, with only 50 percent of roads in acceptable or satisfactory condition. Dual-lanes represent only 9 percent and 5 percent of the national and

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<sup>2</sup> World Bank. 2014. *The unfinished revolution: bringing opportunity, good jobs and greater wealth to all Tunisians*. Washington, DC: World Bank Group. <http://documents.worldbank.org/curated/en/2014/05/20211980/unfinished-revolution-bringing-opportunity-good-jobs-greater-wealth-all-tunisians>

regional road networks respectively. Over the past decade, traffic recorded an average annual growth rate of 6.1 percent. Heavy duty vehicle traffic has evolved more rapidly than the overall average traffic, resulting in a reduction in road capacity, increased degradation of the carriageways, and increased risks/gravity of accidents.

8. **Tunisia's road infrastructure is managed by the MEHLP.** The General Directorate of Roads and Bridges (*Direction Générale des Ponts et Chaussées, DGPC*) of MEHLP is responsible for managing the classified road network and a portion of the rural road network. The priorities of the DGPC are based on investment programs and structured around five axes: (i) routine and periodic maintenance, (ii) upgrading of select roads, (iii) rehabilitation and upgrade of dedicated structures (such as bridges), (iv) rehabilitation and upgrading of rural roads, and (v) road safety. There is one regional branch (*Directions Régionales de l'Équipement et de l'Habitat - DREH*) of the DGPC in each Governorate, with its own equipment and responsibility for maintenance. The Center for Construction Techniques and Testing (*Centre d'Essais et des Techniques de la Construction - CETEC*) is a non-administrative public entity under the responsibility of the MEHLP, in charge of technical research and norms for material and construction techniques. CETEC plays a central role in monitoring and testing the state of the road network, but suffers from outdated equipment.

9. **Road infrastructure also shows disparities between lagging regions and coastal areas.** Although the national average road density<sup>3</sup> is 12 km per 100 km<sup>2</sup>, it is significantly more developed in the denser eastern coastal regions than in lagging regions. For example, the coastal highway linking the northwestern Mediterranean port of Bizerte to Sfax (the second largest city) through Tunis represents 80 percent of the total highway network. Lagging regions also suffer poor and unsafe road conditions and slow traffic resulting from single-lane roads and heavy trucks carrying agriculture products and raw materials. Conversely, road connectivity is expected to play an important role in improving the economic situation of the poorest regions in Tunisia. Improving road sections to growth centers is seen as a key step to increase private sector investment in these regions. Consultations with private sector groups have shown that there is a willingness to invest if costs can be reduced.

10. **Although Tunisia is doing better on road safety than other countries in the region, it is still losing about 4.5 percent of its GDP to road traffic injuries.** Between 2008 and 2011, the number of accidents with death/injuries decreased each year: -5.7 percent, -8.3 percent, -3.3 percent, and -5.1 percent, respectively. Nonetheless, there were still 1,208 road traffic fatalities reported, while the World Health Organization (WHO) estimated fatalities at 1,974. About 43 percent of deaths are drivers or passengers of four-wheeled vehicles, suggesting that these crashes take place outside cities and highlighting the importance of improving road safety on national and regional roads. Men are disproportionately affected: in 2007, for example, WHO estimated that 82 percent of all traffic-related deaths were male.<sup>4</sup> Though this figure includes pedestrians, women could be disproportionately represented among pedestrian fatalities given their generally lesser access to four-wheeled vehicles. On RN12 alone, the number of fatalities

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<sup>3</sup> World Development Indicators (2014). Latest data for Tunisia: 2011.

<sup>4</sup> WHO (no date). Road Safety Country Profiles. Based on 2007 data. Available online: [http://www.who.int/violence\\_injury\\_prevention/road\\_safety\\_status/country\\_profiles/tunisia.pdf](http://www.who.int/violence_injury_prevention/road_safety_status/country_profiles/tunisia.pdf)

due to road accidents amounted to 64 between 2008 and 2012. The number of injuries in road accidents reported during the same period was 384. There has been tentative progress on road safety at the strategic and institutional level in recent years with the help of other International Financial Institutions (IFIs) and important gaps still need to be addressed. Tunisia could also potentially benefit from an ongoing World Bank regional technical assistance program on road safety.

**11. Since the revolution, Tunisia's priority has been to implement the 12<sup>th</sup> Road Investment Program with the support of IFIs, but maintenance funding has not kept pace with investment.** IFIs involved in the road sector have been the European Investment Bank (EIB), the African Development Bank (AfDB), the Arab Fund for Social and Economic Development (FADES), the Japan International Cooperation Agency, and the Kuwait Fund for Arab Economic Development. Despite a significant level of capital investment in the past few years (an average of US\$ 100-150 million annually), the budget for maintenance (average of US\$ 45 million in the past five years) over the same period increased only gradually, and even saw an 8 percent decrease from 2013 to 2014. According to World Bank scenarios modelled during project preparation, the minimum annual budget that will ensure that the state of the network remains stable is US\$ 125 million. The government agreed to significantly increase the routine and periodic maintenance budget for 2015 (to US\$ 93.3 million from US\$ 32.4 million in 2014)<sup>5</sup>. This increase makes progress on the issue but effort should be maintained to ensure (i) adequate budget allocation to maintenance in the coming years, (ii) continuous support of IFIs to bridge the infrastructure gap, and (iii) improvement in efficiency of public expenditure and management of the road network to maximize value for money.

**12. Budgeting for road asset maintenance and investment is currently done using an outdated system that results in sub-optimal resource allocation.** Allocations are currently based on estimates from technical staff followed by negotiations, but without analytical support from decision making tools such as Highway Development and Management Model (HDM)-4. The absence of a comprehensive road database and analytical instrument for assessing the overall state of the road network results in sub-optimal investment decisions based on subjective assessments, and lagging regions have suffered negative impacts as a result. MEHLP now seeks to address this need, beginning with technical assistance made possible through the proposed project, in order to improve efficiency of public investment in the road sector. However, more efficient management of road assets is dependent on having both recent and reliable data (on traffic and state of roads) and a decision support tool on an information technology platform to make use of the data. Regarding the former, updated traffic counts became available at the end of 2014, so the priority is now to (i) provide MEHLP with a decision support tool appropriate to house the data and support more efficient investment decision making, along with appropriate training; (ii) initiate systematic collection of roughness data for the national and regional road network at least; and (iii) ensure that the MEHLP through its subordinate laboratory CETEC has appropriate equipment to measure the state of the road network and conduct quality control of civil works.

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<sup>5</sup> All maintenance budget figures provided by DGPC and converted to dollars using April 30, 2015, exchange rate.

13. **There is potential for the private sector to play a greater role in maintaining road assets more efficiently and to change the way financial resources are allocated in the road sector.** The current system of maintenance delivery includes private sector participation that is circumscribed and involves little transfer of risk. In practice, periodic maintenance and rehabilitation is sub-contracted to the private sector but with limited risk transfer or use of innovative mechanisms such as performance-based contracts that could result in a lower long-term cost of road asset management through stronger private sector involvement. Increased efficiency in public sector investment can be supported by a stronger role for the private sector. There may be opportunities to employ more efficient, performance-based private sector contracts for rehabilitation and maintenance to improve the efficiency of the maintenance system and reduce the long-term cost of managing road assets.

14. **MEHLP recognizes that there is an enduring need for a national strategy for the road sector.** The last strategic thinking on institutional arrangements, human resources and equipment necessary to support road asset management was done in 1984. There is now a consensus within MEHLP and with other IFIs that a Road Development Strategy should be prepared to support future investment. Accordingly, the MEHLP/DGPC is preparing a draft vision for the road sector to identify high priorities for investment and technical assistance, with support from the World Bank. The MEHLP is engaging with IFIs, Arab Funds, and bilateral donors in 2015 to discuss the financing of infrastructure and technical assistance in areas not currently covered by current projects/grants. A similar approach was taken in the water sector and received strong support from IFIs and donors. The key sectoral issues that still need to be addressed are: (i) complementing the road development strategy with more in-depth review of institutional reforms and role of the private sector, (ii) implementation of road safety recommendations, and (iii) supporting the financing of remaining high priority investment and technical assistance. AfDB is currently supporting the Government through a large grant focused on institutional reforms in road safety.

15. **Tunisia does not borrow for technical assistance, which has traditionally been more focused on support to individual road investments rather than addressing broader sector issues.** However, the policy environment is now more favorable to address institutional issues requiring coordination at the national level, and the MEHLP and DGPC are now looking to take a more active role in defining needs and aligning them with support from IFIs. The EIB financed a study on road safety which was completed in May 2014. The EIB-led Transport Sector Support for Transition Countries (TRANSTRAC), financed by the MENA Transition Fund, focuses on (i) the adaptation and standardization of Requests for Proposals, (ii) preparation of a road safety assessment and action plan (coordinated with the European Union), and (iii) feasibility studies on transversal road corridors. Concerning road safety, the following institutional gaps have been identified as requiring technical assistance: (i) a lack of a central entity in charge of road safety and with sufficient authority over the three ministries involved in road safety; (ii) a lack of any structure in charge of creating a national road safety strategy; and (iii) a lack of a traffic management and information center.

16. **The World Bank's intervention through this project will allow the improvement of key road corridors to strengthen economic conditions in lagging regions in a manner that respects environmental and social integrity and delivers needed technical assistance.** The

World Bank's practical and rigorous approach to social and environmental due diligence is one of the main advantages brought to Tunisia by this project. Furthermore, the ability of the World Bank to provide grant financing through the MENA Multi-Donor Trust Fund (MDTF) for technical assistance to MEHLP/DGPC is an additional benefit to the Government. Indeed, the dialogue with the World Bank included a preliminary sector review and capacity assessment in the context of project preparation, which has been helpful to DGPC in its own strategic stock-taking.

### C. Higher Level Objectives to which the Project Contributes

17. **This project is aligned with advancing the World Bank Group's strategic goals of ending extreme poverty and boosting shared prosperity in a sustainable manner<sup>6</sup>, but the outcomes will likely occur in the medium term.** The project is designed around sharing prosperity by improving economic opportunity for the populations of lagging regions – among the poorest areas in Tunisia – and reducing disparity between the coastal economic core and the hinterlands. In the preparation of this project, the Tunisian private sector has signaled its willingness to invest in lagging regions once connectivity improves. Projects such as this one are expected to bring needed investment capital to these areas, which typically occurs in the years following road improvement and whose effects are felt in the medium term. However, public works financed by this project will conclude in 2019, leaving only approximately 18 months in the project implementation period. This short time is not sufficient to observe meaningful changes in twin goal outcomes. Nevertheless, the improvement of road connectivity between lagging regions and growth centers is expected to support mobility and contribute to a reduction of transportation cost and making these regions more attractive to private sector investment. The agriculture and industrial base would potentially benefit from such investment, contributing to job creation and regional growth. These findings have been confirmed by several studies, including a recent review of the impact of the Golden Quadrilateral Project Highway in India on the location and performance of manufacturing<sup>7</sup>. The research found a positive effect on the manufacturing sector, including the total level of manufacturing activities, within 10 km of the road network and after the upgrades. As such the project is also aligned with MENA's Regional Strategy, supporting the pillars of accelerating private sector-led sustainable growth, ensuring economic and social inclusion, and creating jobs.

18. **This project will contribute substantially through technical assistance to modernizing the management of road assets in Tunisia.** It will help move from the traditional managerial model to an evidence-based one that provides a better perspective on the big picture of the road network and better targets scarce maintenance resources where they are needed most with the intent to improve efficiency. The piloting of performance-based contracting will open the door to the first, innovative application in MENA of a technique that has been very

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<sup>6</sup> The first goal is to end extreme poverty by reducing the share of people living on less than US\$1.25 a day to less than 3 percent of the global population by 2030. The second goal is to boost shared prosperity by improving the living standards of the bottom 40 percent of the population in every country.

<sup>7</sup> *Highway to Success in India: The impact of the Golden Quadrilateral Project for the location and performance of manufacturing*, World Bank Policy Research Paper (2013)

successfully applied in South America and will support a stronger role for the private sector in the management of Tunisia's road assets. This is expected to be a permanent and transformative change which will enhance the sustainability of the sector by increasing the value obtained by Tunisia for each scarce dinar spent on maintenance.

19. **The project is part of the World Bank re-engagement with Tunisia on roads following a ten-year hiatus.** The World Bank has a role to play in helping to shape the strategic direction of the road sector by improving road links that will support investment in lagging regions, which is important to the post-revolutionary social contract in Tunisia. The Bank re-engagement in the road sector is strongly linked to a desire expressed by MEHLP/DGPC to make needed reforms to address long-term policy issues and to benefit from the technical expertise of the World Bank. The Bank engagement during project preparation included an analysis of financing needs for maintenance and identification of immediate needs for technical assistance to improve the efficiency of public investment. It included substantial road safety elements and also significantly contributed to strengthening MEHLP/DGP capacity in social and environmental safeguards.

20. **The project is in line with the World Bank Group's Interim Strategy Note for Tunisia (FY13-14)** (Report 67692-TN discussed by the Board on July 3, 2012). It will support area 1, "*Laying the Foundation for Sustainable Growth and Job Creation*" by improving the quality of the road network and increasing the capacity of road corridors between lagging regions in the center and northwest of the country to the coastal growth poles. The project will also support area 2, "*Promoting Social and Economic Inclusion*" by improving mobility with positive impact on employment opportunities and access to services. Consistent with this, the forthcoming Country Partnership Framework for Tunisia is expected to place heavy emphasis on connecting leading regions with lagging regions.

21. **The project complements the work of other IFIs in Tunisia.** In particular, it will supplement the work of the EIB's TRANSTRAC and LOGISMED initiatives in Tunisia by focusing on the improvement of the national and regional road network. It is also complementary to the work the AfDB is undertaking on key issues in the road sector, in particular the road safety strategy it has financed and which is in its final stages.

## II. PROJECT DEVELOPMENT OBJECTIVES

### A. PDO

22. The objectives of the Project are: (i) to reduce transportation cost and time and improve road safety on select road corridors between lagging regions and more developed areas in the territory of Tunisia; and (ii) to strengthen the capacity of the Ministry of Equipment, Habitat and Land Planning in road asset management.

### Project Beneficiaries

23. The populations of these lagging regions in Kairouan, Siliana and Zaghouan governorates who reside in the areas where they can reasonably use the roads are the direct beneficiaries of the

project. In this context, direct beneficiaries are considered to live within a 2 km buffer of the improved roads. The total number of beneficiaries for this project is estimated at 373,500<sup>8</sup>. They are expected to benefit from:

- a. Improved connectivity and mobility between lagging regions and the economic centers of the coast as well as within the lagging regions, and improved economic opportunities in the lagging regions resulting from these.
- b. Job creation in lagging regions: direct employment on site (construction), indirect employment generated by industries that supply materials and equipment for the initial investment, and induced employment generated by the propensity of the first two groups to consume. In the context of the proposed project, 40,800 person-months of direct employment are expected to be created<sup>9</sup>, benefiting primarily local populations from the lagging regions.
- c. Improved road safety on select road corridors. Road safety measures have been implemented in the road design following an independent review of the three roads in line with European Directive of 2008 on road safety. Road safety considerations will be specified in bidding documents and appropriately monitored.

24. Government institutions will also benefit from the project. The MEHLP and CETEC will both benefit directly from institutional strengthening measures such as: (i) purchase of database and decision making tools that are part of a Road Asset Management Systems and training of staff in utilizing them; (ii) feasibility and identification of pilot performance-based contracts in lagging regions; and (iii) purchase of monitoring equipment to strengthen their capacity to better manage the road network. Moreover, the preparation and supervision of the project will strengthen MEHLP capacity on applying fiduciary and safeguards controls on a major project such as this one. MEHLP will also gain experience in working cooperatively with the World Bank on road projects after a ten-year hiatus in Tunisia.

### **PDO Level Results Indicators**

25. The PDO results indicators for the project are the following:

- a. Reduction of vehicle operating costs on the roads improved by the project (Percentage);
- b. Reduction in travel time on the roads improved by the project (Percentage);
- c. Number of traffic-related fatalities per hundred million vehicle-kilometers travelled (vkt) on the roads improved by the project (Number);

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<sup>8</sup> Based on 2014 census data.

<sup>9</sup> Two Bank reviews (2009 and 2010) found that direct employment (annual jobs) for interurban roads is estimated at 17,000 for US\$ 1 billion of investment: *Crisis in LAC: infrastructure investment and the potential for employment generation*, World Bank, 2009; and *Responding to crisis with investment: the short-term employment and economic growth effects of construction sector investments in Jamaica*, World Bank, 2010. Similar research specific to the Tunisian context is not available.

26. Intermediate Results Indicators include:

- a. Roads constructed, Non-rural (Kilometers) - (Core);
- b. Roads rehabilitated, Non-rural (Kilometers) - (Core);
- c. Direct project beneficiaries (number), of which female (percentage) (Core);
- d. Person-months of employment created during construction (Number);
- e. Available budget for routine maintenance of classified roads (TND/km);
- f. Grievances registered related to delivery of project benefits that are actually addressed within the stipulated timeframe (Percentage), disaggregated by gender of the complainant;
- g. Preparation and execution of a five-year investment and maintenance plan using HDM-4 (Yes/No);
- h. Feasibility Study on performance-based contracting completed and technical specification for a pilot project in lagging regions validated (Yes/No);
- i. Percentage of the national and regional road network (traffic and state of roads) managed using HDM-4 (Percentage); and
- j. Use of road asset management principles by DGPC for maintenance budget assessment (Yes/No).

### III. PROJECT DESCRIPTION

27. The project will improve specific sections of three road corridors (RN12, RN4 and RR133), improve road safety on these sections, and assist MEHLP/DGPC to strengthen and modernize its road asset management practices.

#### A. Project Components

28. **Component 1: Road Corridor Improvement (US\$ 228.2 million total, including US\$ 200 million in IBRD loan financing).** The project will improve about 146 km of existing single-lane national and regional road sections on three road corridors. Civil works will include widening and upgrading of the road sections when necessary, upgrading of 17 bridges and improvement of 230 culverts, 52 road intersections, traffic signs and installation of other road safety devices. This component would include four sub-components:

- (a) Sub-Component 1.1: Widening and upgrading as necessary of about 57 km of National Road 12 between Sousse and Kairouan, including the upgrading of bridges, the improvement of culverts, intersections, and traffic signs, and the installation of road safety devices.
- (b) Sub-Component 1.2: Widening and upgrading as necessary of about 65 km of National Road 4 between El Fahs and Siliana, including the upgrading of bridges, the improvement of culverts, intersections, and traffic signs, and the installation of road safety devices.
- (c) Sub-Component 1.3: Widening and upgrading as necessary of about 24 km of Regional Road 133 between Jebel El Oust and Zaghouan, including the upgrading of



bridges, the improvement of culverts, intersections, and traffic signs, and the installation of road safety devices.

- (d) Sub-Component 1.4: Supervision of the activities to be carried out under Sub-Components 1.1, 1.2, and 1.3 above (financed entirely by the Borrower).

29. **Component 2: Road Network Management Improvement (US\$ 2.8 million total, including US\$ 909,000 in MDTF grant financing)**. Project preparation included a preliminary sector assessment which identified maintenance needs and areas for capacity building. The project will support the transformation in the way the MEHLP manages the road network and plan public investment. This component is divided into two sub-components:

a. Sub-Component 2.1 (US\$ 1.9 million total, financed entirely by the government): Acquisition of: (i) monitoring equipment for the central laboratory of CETEC in Tunis and its regional laboratories at Sousse, Kairouan, Zaghouan and Siliana, in order to improve the management of the national and regional road network; and (ii) vehicles for supervising the civil works on the road network to be carried out under Component 1 above. Equipment will be used primarily to support quality control and supervision of works. The use of the equipment financed by the Borrower will not be limited to the project. Although there are private professional laboratories, their number is considered too small to ensure proper competition, thereby requiring a public institution to fill the gap. The long-term plan is to move to a situation with a stronger role for the private sector in road quality control, but the equipment will support immediate needs to support quality control beyond the project.

b. Sub-Component 2.2 (US\$ 0.9 million total, financed entirely by the MDTF grant): Strengthening the technical capacities of selected staff at MEHLP regarding: (i) the design and implementation of decision-making tools to better plan road maintenance and road public expenditure, including in the lagging regions; and (ii) the review of the role of public and private sectors in the management of the road sector, including the use of performance-based contracts for rehabilitation and maintenance of roads; and strengthening the technical capacities of selected staff at MEHLP, other relevant Ministries and public entities and relevant private sector entities regarding modern road asset management and performance-based contracts for road maintenance; all through the provision of technical advisory services and training, the carrying out of studies, and the acquisition of computer equipment and software.

30. Sub-Component 2.2 will be financed by a US\$ 909,000 grant obtained from the Middle East and North Africa Region-wide Technical Assistance MDTF to support transformative changes in the road sector. This Sub-Component is expected to be completed by March 31, 2017.

## **B. Project Financing**

31. The total project cost is US\$ 231 million. Component 1 activities are estimated to cost US\$228.2 million, of which the IBRD loan will finance US\$200 million equivalent. The MDTF grant will finance US\$ 909,000 for Sub-Component 2.2. The remaining US\$ 30.1 million will be financed from the Tunisian budget, including the financing of Sub-Components 1.4 and 2.1.

## Project Cost and Financing

### 32. Financing table:

Project Components	Project cost (US\$ million)	IBRD and MDTF Financing	% Financing
Component 1. Road improvement	228.2	200.0	87%
Component 2. Road network monitoring improvement	2.8	0.9	32%
Sub-component 2.1: Purchase of monitoring equipment	1.9	0.0	0%
Sub-component 2.2: Institutional strengthening (grant financing)	0.9	0.9	100%
<b>Total Baseline Costs</b>	203.0	176.9	87%
Physical contingencies	14.0	12.0	87%
Price contingencies	14.0	12.0	87%
<b>Total Financing Required</b>	231.0	200.9	87%

### C. Lessons Learned and Reflected in the Project Design

33. **Tunisia is still in a transition period following the 2010-11 revolution.** Tunisia is a middle-income country, and while full legislative and presidential elections were held in late 2014, it retains some characteristics of fragility in which consensus on ways forward remains important. For this reason, project design has been kept simple and manageable taking into due consideration both the prevailing sensitive socio-economic environment, the limited experience of the DGPC in working with the World Bank, and the fact that a transition government was in place until February 2015. Project preparation included extensive training on the World Bank's policies (environmental and social safeguards and procurement) and helped identify immediate priorities in capacity building (incorporated in the project design and financed by a grant). The areas chosen for technical assistance supported by the project are intentionally limited to high priority areas where agreement between several ministries is not critical and where other donors are currently not involved.

34. **The World Bank Independent Evaluation Group (IEG) in its 2013 report on sustaining transport outcomes<sup>10</sup>, including for the roads sector, recommended that projects strengthen institutional capacity to sustain transport outcomes.** Of particular relevance to the intercity roads sector, the report stated: "In subsectors that are dominated by the public sector, such as intercity highways and rural roads, mainstream proven models of demand-side governance and commercial principles to ensure that there is a proper accountability and incentive framework in place, such as output- and performance-based maintenance contracting,

<sup>10</sup> IEG. 2013. *Improving Institutional Capability and Financial Viability to Sustain Transport: An Evaluation of World Bank Group Support Since 2002*. Washington, DC: World Bank. License: Creative Commons Attribution CC BY 3.0

second generation road funds, and microenterprise models. In order to strengthen the ability of countries to routinely collect data on, monitor, and assess sustained transport outcomes, support governments to put in place a reliable system to monitor and evaluate such outcomes systematically in all subsectors, particularly for ensuring adequate road maintenance”. The proposed project explicitly includes a number of these elements through its technical assistance activities under Component 2. While Component 2 will not result in having a full Road Asset Management System in place, it will introduce the key elements and build capacity within MEHLP.

35. **Donor coordination and a strategic approach are critical to sector financing and technical assistance.** A recent review of the Tunisia Country Program Evaluation FY05-13 highlighted the importance of coordination with groups with independent views. There has been limited coordination until now between donors and IFIs in the road sector, with each IFI being requested to finance a specific section of the network. The MEHLP/DGPC has recently taken the lead in proactively identifying investment and technical assistance priorities. The World Bank has provided technical assistance on the sector sustainability during project preparation and has been participating in consultations with IFIs. The first meeting took place on February 24, 2015 with representatives of the World Bank, EIB, and AfDB.

36. **The project incorporates lessons learned about procurement in Tunisia.** The World Bank’s experience with Tunisia’s procurement system has been a difficult one, with cumbersome oversight creating bureaucratic delays at a number of problematic bottlenecks. In this case, the project has a counterpart that is strong in procurement, but will be dealing with World Bank procurement procedures for the first time which may result in delays in launching the procurement process at the beginning of the project. This risk has been mitigated by preserving larger individual lots, preparing bidding documents prior to negotiations for those roads whose design is final (RN12 and RR133), and by doing prior review of bidding packages by the Bank. Bidding documents for RN4 will be finalized once the detailed design is finalized in August or September 2015.

#### IV. IMPLEMENTATION

##### A. Institutional and Implementation Arrangements

37. The Road Transport Corridors Project will be implemented by the MEHLP through the DGPC. Overall, the DGPC’s staff comprises:

- a. Engineers: 71
- b. Assistant engineers and technicians: 48
- c. Administrative staff: 44
- d. Laborers: 182

38. The DGPC has established an internal Project Implementation Unit (PIU), which is responsible for all aspects of the overall preparation and implementation of the proposed project as well as potential future World Bank-financed projects. Similar structures have been created for EIB and AfDB funded projects. The Decision of the Minister creating the PIU was issued on December 12, 2014. The PIU is headed by a Director and composed of seven MEHLP staff with

specific responsibilities related to technical, procurement, financial management (FM), and environmental and social safeguards issues. Consultants were recruited by MEHLP to prepare the Environmental and Social Impact Assessments (ESIAs) and Resettlement Action Plans (RAPs) with the support of the Bank. During project preparation the DGPC's main staff specialists for environmental and social/resettlement issues have been assigned to the PIU to handle those issues, and a Grievance Redress Mechanism (GRM) under the overall responsibility of DGPC has been established providing citizens affected by the project with multiple channels to raise their concerns. The Project Operations Manual was adopted by DGPC in February 2015 and is acceptable to the World Bank.

39. MEHLP maintains a DREH in each of the 24 governorates and each includes a maintenance and management service with responsibility for vehicles/equipment and maintenance works. Civil works will be managed by Project Managers (*Chefs de projet*) located within the appropriate DREH. There is one Project Manager for each road in each governorate containing civil works, as follows:

- a. RN 12: One each in DREH Sousse and DREH Kairouan
- b. RR 133: One in DREH Zaghuan
- c. RN 4: One each in DREH Zaghuan and DREH Siliana

40. The detailed design of the works to be undertaken was prepared by a consulting firm hired by DGPC. The World Bank reviewed the preliminary (RN12/RR133/RN4) and final designs (RN12/RR133) and made recommendations that were incorporated. The final design for RN4 is expected to be completed by August-September 2015. Civil works will be carried out by construction contractors hired by the PIU according to the agreed procurement methods (refer to Annex 3). Supervision of civil works remains the responsibility of DGPC, but will be carried out by a supervising engineering contractor hired by the PIU and reporting to the Project Managers. CETEC's regional laboratories will be responsible for quality control of civil works at the actual worksites.

41. A working group at the level of the Presidency of the Government (*Présidence du Gouvernement*) has been mandated to coordinate and resolve cross-cutting issues affecting Government projects, and membership will include representatives of all relevant ministries. This project may refer issues of coordination to this working group if necessary.

## **B. Results Monitoring and Evaluation**

42. The MEHLP through the DGPC will be responsible for monitoring of implementation progress of the Tunisia Road Transport Corridors Project. DGPC staff will directly supervise the physical progress of contracted works which will be overseen by the engineers of the regional directorates.

43. As per standard practice for externally-funded projects, the staff of the PIU will prepare Project Reports showing the progress of all project activities. Each Project Report shall cover the period of one calendar semester, and shall be furnished to the Bank not later than forty-five (45) days after the end of the period covered by such report. The format of these reports has been agreed in the Project Operations Manual and will be a useful management tool for the

Ministry, as well as in reporting project progress to other government agencies and/or IFIs as required. Audit reports for the IBRD loan will be produced annually as required by the World Bank standard loan conditions. For the MDTF grant, a single audit report shall be furnished to the World Bank not later than six months after the grant closing date.

44. In addition to the regular, semiannual implementation support (IS) missions, World Bank and DGPC staff will work together to ensure joint results monitoring. The cost of the PIU is entirely paid by the DGPC budget and is not funded by the proceeds of the loan or the grant.

### **C. Sustainability**

45. This project, like all road projects, depends for its sustainability on the availability of funds to maintain the improved road assets it will provide. In the case of Tunisia at present, the overall annual road maintenance budget for 2015 is TND 251 million, or approximately US\$ 132 million, a major increase over US\$ 35 million in 2014. This is due to the recognition by the Government of the need to put more emphasis on road maintenance and sustainability. According to World Bank scenarios modelled during project preparation, the minimum annual budget that will ensure that the state of the network remains stable is US\$ 125 million. The technical assistance component will further support efficiency in public investment by putting key elements of a modern road asset management system in place, contributing further to the sustainability of the network. Moreover, working in cooperation with the MEHLP, IFIs and other donors, the Bank will support a more strategic approach to the sector and coordination from all external financiers of the road network.

46. The project will strengthen the institutional capacity of MEHLP to manage and address environmental and social issues and impacts. The MEHLP has had experience working with other IFIs, including the AfDB and the EIB, but has less familiarity with World Bank safeguards policies. Extensive support has therefore been offered by the Bank during the preparation of the necessary safeguards documents. The MEHLP has demonstrated strong ownership in responding to Bank requirements, which is evidenced by them preparing the Resettlement Policy Framework (RPF) in-house, and undertaking series of consultations with key stakeholders. The DGPC team, including the designated social and environmental focal points actively participated in briefing and training sessions undertaken by the Bank. The MEHLP will hire full-time environmental and social expertise to support the project team during implementation and supervision to ensure compliance with Environmental and Social Management Plans (ESMPs) and RAPs. Budgetary provision is included in the ESMPs for hiring the Environment and Social specialists and for technical training of the Borrower's project team at both national level and local levels in environmental aspects of road design, implementation, monitoring, reporting and maintenance, as well as for training on implementation, monitoring and reporting on the RAPs. These measures will build the capacity of the MEHLP to manage environmental and social impacts in adherence with international best practice in the future.

## **V. KEY RISKS AND MITIGATION MEASURES**

47. The main risks affecting this project are as follows:

## A. Risk Ratings Summary Table

<b>Risk Category</b>	<b>Rating</b>
Political and Governance	High
Macroeconomic	Substantial
Sector Strategies and Policies	Moderate
Technical design of project	Low
Institutional capacity for implementation and sustainability	Moderate
Fiduciary	Moderate
Environment and Social	Substantial
Stakeholders	Moderate
<b>Overall Implementation Risk</b>	<b>Substantial</b>

## B. Overall Risk Rating Explanation

48. The overall risk rating for implementation is Substantial. Risks to this project flow primarily from:

a. Political and Governance: The main risk for Tunisia is the possibility of renewed political instability due to unmet political and social aspirations and from instability in neighboring Libya. At the level of the project, these risks manifest themselves in uncertainties around the level of government commitment. A weakening of government commitment on this account could lead to delays in implementation and lack of clarity in strategic direction for the road sector as a whole. This risk is being managed through the GoT's willingness to facilitate investments in lagging regions, including with World Bank financing as in this case;

b. Macroeconomic: Tunisia currently faces a lack of economic confidence with a fragile recovery underway. Macroeconomic risk to this project is connected to Tunisia's overall budgetary health. Any further economic downturn could threaten state budgets for both investment and needed maintenance in the road sector, calling into question the sustainability of the improvements brought by the project. World Bank support for governance reform contributes to mitigating this risk; and

c. Environment and Social: Of concern are legacy resettlement issues affecting RR133, RN12 and the Kairouan bypass, lengthy land acquisition procedures in Tunisia, and the DGPC's lack of experience with the World Bank safeguards policies. The legacy resettlement issues and mitigating measures are described in detail in Section VI.E (paragraphs 76 to 81), below. The land issues risk is mitigated through close support by the Bank throughout project preparation and implementation, combined with the support of the working group established by the Presidency of Government as required during implementation. Risks linked to unfamiliarity with

safeguards are mitigated through additional training and close support provided by the Bank throughout preparation and implementation.

49. Risks related to design and delivery monitoring are moderate given DGPC technical expertise and experience with externally financed projects. Fiduciary risks including procurement are moderate, as confirmed by the past experience of other IFIs with DGPC’s superior procurement performance.

## VI. APPRAISAL SUMMARY

### A. Economic and Financial Analysis

50. For the three road sections individually, and the overall project, an economic analysis was performed using HDM-4, the details of which can be found in Annex 5.

51. The project will contribute to the socioeconomic development of Tunisia by lowering transportation costs and transit times and improving safety on roads between certain cities in lagging regions and the more prosperous coastal areas. It will help to provide faster, safer, and cheaper movement of people and goods between these areas, helping to make investment in lagging regions more attractive to the private sector. It will improve the systems used to manage the national road network, which will improve the productivity of road maintenance budgets. In most countries including Tunisia, road construction is done by the private sector and provision of road infrastructure is not generally profitable for the private sector to undertake. Therefore this project is appropriately publicly provided. It does, however, involve private provision of construction services and includes a feasibility study for increased private participation in road maintenance through performance-based contracting. The World Bank adds value by drawing from its substantial experience in assisting other middle-income countries to reform the maintenance of their roads and thus improve the efficiency of maintenance expenditures. World Bank safeguards on environmental and social protection are also of value in the project context.

52. Because of the variety of situations found, the three corridors were broken down into sections, according to traffic and technical characteristics. All three roads include sections with comparatively lower traffic, improved as part of the project to provide homogenous service level on the itinerary.

53. The net present value (NPV) of all investments over the total length of roads is about TND 295 million (approximately US\$ 160 million) on the basis of the evaluation of all three project corridors (see below). The overall vehicle operating costs for the project are reduced by 30 percent. The overall internal rate of return (IRR) of all investments is 29.5 percent.

*Table 1 - Results of the economic analysis*

Road	Section	NPV (TND million)	IRR (%)
RN12	Sousse – Kairouan	188.4	42.4%
RR133	RN3 – Zaghuan	63.6	52.2%

RN4	El Fahs – Siliana	42.9	15.3%
Total		294.9	29.5%

54. The economic analysis shows that all roads included in the project present a positive economic return on investment, though with important differences due to the variety of situations encountered in terms of traffic, present condition and proposed works. Nonetheless, each itinerary studied is economically valid individually, as is the overall project collectively.

55. The analysis is deemed conservative, as no generated traffic has been taken into accounts. The sensitivity shows that the outcome is robust even in case of variation of up to 20 percent of the most important factors: the level of traffic and construction costs. Results remain satisfactory in deteriorated conditions.

## B. Technical

56. The complete technical assessment of the project is found in Annex 2. The technical studies and plans completed for RN 12 and RR 133 are satisfactory in content and quality. Those for RN 4 are underway and will be finalized by the end of 2015.

57. The Project will:

- a. widen RN12 to 4 lanes from km 5 - 50, including the main interchange at km 0 in Sousse and the last sections of the Kairouan bypass.
- b. widen RR133 to 4 lanes from km 0 - 22, including strengthening the Zaghouan bypass.
- c. widen RN4 to 4 lanes, from km 0 - 65.

58. The project aims not only to widen, but to homogenize service levels along each road, with different improvements planned according to the current condition. To this end, the three roads are subdivided into 10 homogenous sections with different characteristics, including one new section to be constructed:

*Table 2 – Technical overview*

Road	Section	Length (km)	Current configuration	Planned works
RN12	Sousse Interchange	1	At-level Junction	Creation of interchange
	km 5-50	45	2 lanes	2*2 lanes
	By-pass Kairouan South	6.8	2 lanes	2*2 lanes
	By-pass Kairouan North	4.2	Non-existent	New section, 2*2 lanes
RR 133	Urban Sections	3.4	2*2 lanes	Strengthening
	Main Section	18.6	2 lanes	2*2 lanes
	By-pass Zaghouan	2.5	2 lanes	Strengthening
RN4	km 0-1.5	1.5	2*2 lanes	Strengthening



	km 1.5 - 63.7	62.2	2 lanes	2*2 lanes
	km 63.7-65	1.3	2*2 lanes	Strengthening
<b>TOTAL</b>		146.5		

59. The project provisions refer to the recommendations of the French roads and highways research agency (SETRA)<sup>11</sup>: technical guidelines for the management of main roads (*aménagement des routes principales* – ARP) and general guidelines on the technical conditions of urban expressways (*voies rapides urbaines* – VRU). Geometrical characteristics are based on reference speeds compatible with a 90 km/h speed limit in any given section, or less depending on local conditions: crossing urban areas or rugged terrain, or crossroads. This is often the case along RN 4.

60. The goal is to bring the targeted corridors up to modern technical specifications and to reinforce the roadway itself. The route taken by each road shall be retained to the extent possible except for a small number of specific modifications to the road geometry to conform to the specified engineering standards. The doubling of the lanes is generally done symmetrically on either side of the axis of the current road, or in a few cases by reusing the existing lane and building a new roadway in parallel. Intersections remain for the most part at level, either roundabout or T-junction types, as opposed to the practice for highways where they are uniformly grade-separated.

61. The main constraint for this type of works is ensuring the treatment of level junctions and the preservation of local access on roads where speed tends to increase after twinning the lanes. The choice of intersection type and their distribution along the route were the subject of a comprehensive study to provide an overview of the management of intersections in the corridor.

62. **Road safety:** At the request of the DGPC as contracting authority for the project, a report on quality control for road safety has been prepared for each of the three road corridors (RN 12, RR 133 and RN 4), with the objective of improving the quality of future studies. It employs the SETRA 2005 methodology required by the European Directive of November 2008 concerning safety management for road infrastructure. The procedure follows an iterative process and the recommendations issued at the preliminary design stage have been taken into account in the calls for tender. A summary sheet ensures the traceability of decisions taken jointly by the Contracting Authority and by the designer. Three reports have thus been produced at the preliminary design stage by two consultants independent of the authors of the quality control report. One consultant prepared the RN 4 report, and the second produced those for RN 12 and RR 133.

63. Detailed technical designs and bidding documents have been finalized for the work on RN 12 and RR 133. For RN 4, bidding documents are expected by August-September 2015.

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<sup>11</sup> Technical agency of the French Government: *Service d'études techniques des routes et autoroutes*.

### C. Financial Management

64. During preparation, the Bank performed a FM assessment to determine adequacy of the FM arrangements of the DGPC to properly manage and account for all project proceeds, and to produce timely, accurate, and reliable financial statements for general and Bank special purposes. The assessment was performed following World Bank Operational Policy (OP) 10.00 and the Financial Management Manual for World Bank-financed investment operations. Overall, the assessment revealed that, while the FM arrangements proposed by the client are generally acceptable, there are areas of improvement and a number of mitigating measures have to be put in place in order to ensure a solid fiduciary environment for a smooth project implementation.

65. The main conclusions of the 2010 Public Expenditure and Financial Accountability (PEFA) report for Tunisia indicate that the legal and administrative framework for public FM is sound and offers a solid level of assurance regarding the reliability of information and a strong control environment; nevertheless there are transparency and accountability failures that still need to be addressed. To the extent possible, the project will make use of existing country systems that have been proven satisfactory to the Bank, such as the single treasury account and the budget country system and laws, strengthening them as needed in order to guarantee its adequacy to ensure project funds are used economically, efficiently and for the intended purposes.

66. The project design is relatively simple and straightforward. The MEHLP through the DGPC, will implement the project and will be responsible for overall fiduciary oversight including FM and disbursement arrangements. Although the DGPC has a sound control environment and adequate capacity to carry out the project FM, the lack of experience with the World Bank's FM and disbursement policies and guidelines may affect its capacity to provide timely and reliable information required to manage and monitor the implementation of the project. Furthermore, the DGPC will not use a computerized system to record project accounting and therefore the project financial reports will be prepared manually which, given the volume of expected project transactions, might delay project compliance with Bank financial reporting requirements.

67. In order to mitigate the identified risks and weaknesses, the DGPC, along with the Bank support, will implement the following mitigating measures: (i) hire a part-time staff specialist to handle project FM matters at the PIU by DGPC; (ii) provide specialized training on World Bank FM and disbursement procedures to build capacity of current administrative and finance staff, within the DGPC, that will handle project financial aspects; (iii) follow a Project Operations Manual satisfactory to the Bank and adopted by the MEHLP that includes detailed accounting, disbursement and financial reporting procedures; (iv) set up segregated project Designated Accounts (DA) in Euros (for the Loan) and in US dollars (for the Grant) held at the Central Bank of Tunisia (CBT) and managed by CBT staff; (v) make wide use of the project financial information gathered through the Budgetary Decision Support System (*Système d'Aide à la Décision Budgétaire – ADEB*), which although it is essentially a budget system, allows for a proper follow up of project commitments and payments; and (vi) ensure timely preparation of project's final financial statements within six months after the fiscal year closure that will allow the external auditor to perform the audit work in a timely manner in order to comply with Bank audit requirements.

## **D. Procurement**

68. The Tunisian Public Procurement is regulated by the Decree Number 2014-1039. This new public procurement decree (PPD) that has been prepared with Bank assistance, improves transparency, governance, complaint handling and clarifies consultants' selection methods. It went into effect starting June 1, 2014. The new Tunisian procurement legislation for goods, works and consulting services is, in general, in line with the Bank's guidelines and the country has adequate control organizations. Procurement for the project will be carried out in accordance with the World Bank "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011, revised July 2014 ("Procurement Guidelines"), and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011, revised July 2014 ("Consultant Guidelines"), and the provisions stipulated in the Loan and Grant Agreements. The World Bank "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants" dated October 2006 and revised January 2011 ("Anti-Corruption Guidelines") shall apply to the project.

69. A procurement capacity assessment was carried out for the DGPC. The assessment is based on DGPC's knowledge and procurement experience under other IFI-funded projects (such as AfDB) and on the information provided by the DGPC staff, taking into account the foreseen nature of the expenditures and the likely size of the contracts to be procured by the DGPC. The main objectives of this capacity assessment are to determine whether the implementing agency has the capacity to adequately carry out the procurement function of the project. This evaluation took into account the entire contracting process, which encompasses: (i) planning; (ii) preparation of bidding documents; (iii) receipt and evaluation of bids or proposals; (iv) finalization and signing of the contract or agreement; (v) monitoring the execution; and (vi) filing and archiving of documents for audit and post review.

70. The conclusion of the assessment is that while DGPC has gained extensive experience in AfDB, FADES and other donors' procurement procedures under similar projects, the assessment indicated that DGPC will be dealing, for the first time, with the World Bank procurement procedures. The only key risk for procurement is: DGPC's unfamiliarity with the World Bank Procurement Guidelines which may result in delays in launching the procurement process at the beginning of the project implementation (for more details, see Annex 3).

71. The implementing agency has the capacity to carry out and manage project procurement as it has become familiar through project preparation with the World Bank Procurement Guidelines and Standard Bidding Documents (SBD). (For more details, see Annex 3).

## **E. Social (including Safeguards)**

72. The social impacts of the project are overall considered to be positive in terms of improving connectivity of economically poor and underserved regions. For road users, lowering transport costs, time spent on the roads, as well as improving road safety will have beneficial

social impacts, particularly for men that are disproportionately represented in fatal road traffic accidents.

73. *Gender:* There is sound gender diversity within DGPC and the project will specifically encourage female staff to participate in capacity building exercises. The groups conducting the census and socio-economic studies that form part of the RAPs ensured that they reflect gender sensitive design, having met with women separately from the men and collected gender disaggregated data to identify potential gender impacts. The RAPs propose measures to ensure that groups that may have more difficulties accessing compensation or participating in the consultation process or GRM (such as female land owners, or the elderly) can equally access and participate (by for example, holding consultation sessions at a time and place convenient for people with family responsibilities and/or mobility impairments and talking to both spouses during the census). During implementation, the project will be able to monitor specific impacts by getting beneficiary feedback (disaggregated by gender) through the established GRM.

74. *Resettlement:* The World Bank Policy on Involuntary Resettlement, OP 4.12, applies to this project as the project requires land acquisition for the widening and improvement of several key road sections identified as important to improve national connectivity. World Bank site visits to RN4, RN12 and RR133 identified that the largest social impact will be related to land acquisition and will mostly include: (i) acquisition of narrow strips of farmland along the road and (ii) demolition of small structures and relocation of kiosks a few meters along the road. These impacts are fully mitigated as part of the site-specific RAPs in accordance with OP 4.12. The complete extent of land acquisition, including involuntary land use, and potential physical resettlement is not yet fully known as final design is not available for all roads. However, no physical relocation is expected and impacts upon Project-Affected People (PAP) are expected to be relatively minor. As an indication, for RN12 where the detailed design and topographical survey are available, acquisitions between 1m<sup>2</sup> and 5ha will be necessary, affecting the owners of 587 plots. For RR133, 75 land owners are affected. RN4 is expected to have fewer PAP. The design of RN12 and RR133 reflect an attempt to minimize impact by avoiding residences and social structures such as mosques. In addition, agreement on the compensation of losses at replacement cost and provision of timely compensation (and land purchase), prior to commencement of construction, can greatly reduce the risk of a delayed construction schedule due to disagreements on land value and timely payment.

75. A RPF to guide the development of the RAP within the project has been finalized. Consultations on the RPF were held on December 26, 2014. The RPF was disclosed in country on February 5, 2015, and in the World Bank's Infoshop on February 10, 2015. Site specific draft RAP for RN12 and RR133 have been finalized. Consultations on the RAPs were held on March 16, 17 and 18, 2015; these were published in Tunisia on April 24, 2015, and in the World Bank's Infoshop on April 24, 2015 as well. As the exact design and alignment for RN4 is not yet known at this stage, the RPF will be used to develop the RAP after effectiveness once the exact design becomes known. The RAP for RN4 will have to be approved by the Bank, consulted upon, disclosed and compensation paid prior to commencement of public works on the section.

76. *Legacy issues:* The census and consultations on the RAPs uncovered the existence of some legacy resettlement issues affecting the road corridors included in the project: land

acquisition by the Tunisian government to allow road widening conducted during 2000-2005 without World Bank involvement and for which a number of entitled owners (*ayant-droits*) have still not been compensated. An audit was conducted in April 2015, and its results indicate that a total of 255 plots of land were acquired by the government during 2000-2005 to allow for roadway development in three distinct locations covered by the proposed project: RN12 in Sousse Governorate, the Kairouan bypass (known as RN2D) in Kairouan Governorate, and RR133 in Zaghouan Governorate. The situation in each site is as follows, according to the findings of the audit:

- a. **RN12:** Road widening in 2000-2002 concerned 10.3 km of road with a right-of-way of 20 m on each side, involving expropriation of 206 plots. The Notice of expropriation (*Avis d'Expropriation*), together with the results of the topographic survey and the parceling plan (*Plan Parcellaire*) was posted in 2000, and public consultation was conducted. Works were conducted between 2000 and 2002. Procedures to acquire the plots in question by mutual agreement were completed in 2003. However, no official expropriation decree (*Décret d'Expropriation*)<sup>12</sup> was ever published. Transfer of title comes after signature of a mutually agreed contract of sale out of court, or by court order based on the expropriation decree at a compensation rate set by the judge. Of the 206 plots, 111 have received their cash compensation by amicable agreement and legal title has been transferred to the state, one already belonged to the state, and 94 plots have yet to be compensated. Of the 94 plots, 78 are apparently uncompensated due to problems with land ownership documentation, problems with real property documentation, or unwillingness of owners to sign the contracts offered. The remaining 16 plots were partially compensated, meaning that one or more but not all of the owners accepted their compensation and passed partial title to the State. The total area of the 94 plots to be expropriated comes to 72,722 m<sup>2</sup>, and involves a total compensation of TND 222,546 (equivalent to about US\$ 116,000 at current exchange rates).
- b. **RN2 D (Kairouan bypass south-east, connected to RN12):** Work on the bypass off of the RN12, over a distance of 16 km, took place in 2000 and required the expropriation of 35 plots, after the posting of the *Avis d'Expropriation* and *Plan Parcellaire* in 2000. The expropriation decree (*Décret d'Expropriation*) was published on January 5, 2009. Transfer of title comes after signature of a mutually agreed contract of sale out of court, or by court order based on the expropriation decree at a compensation rate set by the judge. Of those 35 plots, 29 have received cash compensation by amicable agreement and legal title has been transferred to the state either before or after the publication of the expropriation decree, two have not been settled as their legal titles do not reflect their current ownership and are currently before a civil court for that purpose, and four plots were already owned by the state. The total area of the two expropriated plots comes to 21,173 m<sup>2</sup>, for a total

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<sup>12</sup> The expropriation decree is the administrative instrument which requests that the expropriation judge transfer the title of the property to the state and would allow the state to take legal possession after placement of funds in escrow.

compensation of TND 127,038 (equivalent to about US\$ 66,000 at current exchange rates).

- c. **RR133:** For lane twinning works on RR133 in 2002 in the context of an urban plan, the right-of-way was widened to a total of 50 m over a length of 2 km, without the enactment of any prior legal expropriation measures. The preliminary results of a topographic survey show that the road was constructed in a manner that affected a total of 13,702 m<sup>2</sup> of lands belonging to 14 plots. The plot owners are still the legal owners of the lands on which the road was built since no expropriation process was undertaken. Of these 14 plots, six already belonged to the state, and eight belong to owners who possess formal ownership certificates and are willing to accept compensation under an amicable agreement with the state administration. The total compensation value of these lands has not been calculated.

77. The compensation situation of each of the three roads is as follows:

- a. **RN12:** In the 94 cases on RN12 in which the lands have yet to be fully compensated, the state has not yet been granted legal possession of the lands, despite the fact that works have been completed. Funds at 2003 prices have been placed in escrow at the national Treasury, individually assigned at the level of the plot and documented.
- b. **RN2 D (Kairouan bypass south-east, connected to RN12):** The state has been granted legal ownership and possession of the two remaining plots on RN2D because of the publication of the expropriation decree and subsequent order of the expropriation judge to escrow the necessary funds (at 2009 prices). However, the owners have not yet been able to claim the escrowed funds as their cases are in civil court.
- c. **RR133:** In the eight cases on RR133 in which the lands have yet to be fully compensated, the state has not yet been granted legal possession of the lands, despite the fact that works have been completed. No funds have been deposited in an escrow account for RR133.

78. The time-bound Action Plan dated June 3, 2015, agreed upon between the Borrower and the World Bank sets forth the following measures to remedy outstanding compensation issues related to a program of road work undertaken by the Borrower between 2000 and 2005 on parcels adjacent to the project area:

- a. **RN12:** The Action Plan requires the GoT to publish an expropriation decree for RN12, followed by referral by GoT of all 94 plots not yet fully compensated to the tribunals for re-valuation at current market prices and for final resolution. Once the decree of expropriation is published, Tunisian law requires the expropriation judge to set compensation at the prices in effect as of the date of the decree's publication (planned for 2015). While the national compensation process is currently underway for RN12, given the delay in payments to PAP, the Bank and the Borrower have

agreed that the Borrower will take all measures within its power to facilitate the settlement of all outstanding claims as quickly as possible to ensure that all land taken in the past for Government supported works has been legally acquired in a manner that is fair, transparent and equitable.

b. **RN2D (Kairouan bypass south-east, connected to RN12):** The Action Plan requires DGPC, the General Directorate for Land and Legal issues (*Direction Générale des Affaires Foncières, Juridiques et du Contentieux – DGAFJC*), and the Ministry of State Lands and Real Property (*Ministère du Domaine de l'Etat et des Affaires Foncières - MDEAF*) to confirm that the two plots on RN2D are before the courts and that the government has taken all possible steps to expedite their resolution. Though the two remaining plots on RN2D are before the courts due to legal issues with their titles, given the delay in payments to PAP, the Bank and the Borrower have agreed that the Borrower will take all measures within its power to facilitate the settlement of the outstanding claims as quickly as possible to ensure that all land taken in the past has been legally acquired in a manner that is fair, transparent and equitable.

c. **RR133:** The Action Plan will require DGPC, DGAFJC, and MDEAF to integrate the eight parcels affected on RR133 into the RAP for that road and resolve them as a completely new acquisition. Since no valuation had previously been done, the GoT decided to address the legacy issues by compensating the eight expropriated parcels at 2015 market rates pursuant to the RAP.

79. As a general measure, the government will provide the Bank with satisfactory documentation and evidence that all possible measures to support owners in obtaining their due compensation have been taken. For any of the legacy plots which have not been completely compensated prior to beginning works, the government must show that no further government action could expedite their resolution and that the matter is entirely in the hands of the owner or is pending a court decision.

80. The Action Plan will be completed and an independent review of all measures taken and their documented proof will be undertaken before beginning of civil works on or adjacent to the plots affected by legacy issues. Satisfactory implementation of the Action Plan is required under the Loan Agreement. Lack of resolution of these historical issues could pose a significant risk to the implementation of the proposed World Bank-financed project.

81. The implementation of land acquisition is the responsibility of DGPC, DGAFJC and MDEAF. However, DGPC will be supported by the working group established by the Presidency of Government and mandated to ensure proper coordination within government so that procedures and compensation for land acquisition are followed in a timely manner.

82. *Citizen Engagement and GRM:* The primary mechanism for engaging with citizens under the project is through the preparation and implementation of the RAP and GRM that have been developed. Consultations with the targeted population, including representatives from civil society, together with a well implemented social census and survey with impacted households,

are organized as part of the development of the site specific RAPs. Every PAP as well as a number of civil society organizations were informed about the project and the GRM as part of the census, socio-economic study and the consultations on the RAP. A GRM, under the overall responsibility of the PIU, has been designed to appropriately deal with any concerns from PAP or civil society. Questions, comments and complaints can be directly submitted to local authorities, regional representatives and/or to the central administration via email, phone or letter. Brochures detailing the process as well as the contact information have been produced in a format and language readily understandable by PAP. Close supervision by the World Bank team of safeguard implementation will help ensure a well-managed project. To that effect, an indicator on the GRM has been included in the project's Results Framework.

83. Although the Borrower has not worked with the Bank-financed roads sector projects for more than a decade, the MEHLP experience with large infrastructure projects financed by IFIs (including AfDB and EIB), commitment of the PIU to follow the World Bank safeguard policies and their ownership over the process have been demonstrated by them developing the RPF in-house. Two consultants were hired to develop the RAPs to mitigate the lack of practical experience of the PIU in this area. The PIU was closely involved in finalizing the RAPs as well as in the consultations on the RAPs. A focal point for social safeguards (including GRM) implementation has been designated. In addition to repeated briefings, a one-day dedicated training session on OP 4.12 has been organized by the Bank. Further capacity building and targeted training was conducted during preparation and additional training is planned during implementation (see Section V, Key Risks and Mitigation Measures).

#### **F. Environment (including Safeguards)**

84. The project is financing the improvement of three existing road sections. Although there may be some diversion of alignment in some stretches of these roads, in general, the environmental impacts are expected to be well identified and manageable, with well-defined mitigation measures in the Environmental and Social Management Plan (ESMP) specific to each road section. Therefore, in accordance with World Bank OP 4.01, this project has been classified as Category B. Natural habitats are not affected by the project and consequently OP 4.04 has not been triggered. Conversely, a small section of forest, located in the area of RN 4 which will be twinned in the vicinity of Djebel Mansour, will be affected by the project. As a result, World Bank OP 4.36 (Forests) is triggered and the site-specific Environmental and Social Impact Assessments (ESIA) will describe in detail the area of intervention, the areas of forest to be affected, and all procedures associated with the permanent or partial use of forested areas. The possible environmental impacts related to this project are associated with (i) improper management of construction waste, debris, wastewater runoffs and fugitive dust, noise, spills and other emissions from road construction; (ii) insufficient attention to soil erosion, emplacement of dry stone flood defences, stormwater management, slope stability and quarry management; (iii) loss or damage to vegetation due to improper tree cutting and insufficient tree replacement; (iv) inadequate attention to safe and convenient passage and movement for vehicles, pedestrians and livestock and property accesses connecting the project roads; (v) improper protocols for chance finds, if any; and (vi) occupational health and safety issues of labor and workers and safety of pedestrians and communities living in the vicinity of the construction works.



85. The DGPC has undertaken ESIA's of the three roads and has prepared an ESMF for RN4. The latter was the subject of consultations with primary stakeholders in December 2014 and disclosed nationally and in the World Bank's Infoshop on February 13, 2015. ESIA's for RN 12 and RN 133 have been prepared in coordination with the road design team. Each of the ESIA's also contains an ESMP prescribing mitigation measures for the road in question. In addition to the mitigation measures, the ESMPs include institutional arrangements for supervision, reporting and monitoring and training and coordination requirements between the multiple stakeholders. Screening tools for chance finds procedures have been included in the ESMPs to safeguard any cultural resources that may be discovered. A functioning grievance redress system has been put in place for ongoing feedback from PAP. The DGPC has hosted site-specific consultations with all relevant and impacted stakeholders (including communities, land owners and land users, other relevant agencies at national and local levels etc.) in March 2015, and the comments and feedback have been incorporated in the project design and ESIA's. The final ESIA's have been disclosed on the Borrower's website and in project specific areas for easy access by all stakeholders on April 24, 2015. The Bank has disclosed the two ESIA's in the World Bank's Infoshop, also on April 24, 2015. The ESMPs will be included in the bidding documents, and modalities for supervision and oversight of the contractors has been built into the ESMPs. The cost of implementing the mitigation measures required under the ESMPs will be reflected in the construction contracts. It is expected that the final alignment for RN4 will be finalized a few months after project approval, after which a detailed site-specific ESIA (including an ESMP) will be prepared. This ESIA will be sent to the Bank for clearance, and will be consulted and disclosed before start of bidding process.

86. The DGPC has not worked with the World Bank in the last decade and there was initially no designated environmental specialist in the project team who was familiar with World Bank safeguard policies. However, the national Environmental consultant who prepared the ESIA is well qualified and knowledgeable about the World Bank' Operational Policies. During preparation, the Bank team made significant efforts to train the DGPC team on Bank policies and procedures. The MEHLP will hire an environmental focal point in the PIU for supervising the implementation of the two ESMPs and for preparing the ESIA and ESMP for RN4 and managing the consultation and disclosure process. The Environment Specialist will also provide oversight and ensure that the ESMPs are included and being implemented under the construction contracts. Budgetary provision has been included in the ESMPs for hiring the Environmental consultant and also for formal technical training and capacity building during project implementation at national and local levels, in environmental aspects of road design, implementation, monitoring, reporting, maintenance and ongoing management. The World Bank will undertake an independent environmental audit after construction phase to assess compliance with ESMPs.

## **G. World Bank Grievance Redress**

87. Communities and individuals who believe that they are adversely affected by a World Bank supported project may submit complaints to existing project-level grievance redress mechanisms or the WB's Grievance Redress Service (GRS). The GRS ensures that complaints received are promptly reviewed in order to address project-related concerns. Project affected communities and individuals may submit their complaint to the WB's independent Inspection Panel which determines whether harm occurred, or could occur, as a result of WB non-

compliance with its policies and procedures. Complaints may be submitted at any time after concerns have been brought directly to the World Bank's attention, and Bank Management has been given an opportunity to respond. For information on how to submit complaints to the World Bank's corporate GRS, please visit <http://www.worldbank.org/GRS>. For information on how to submit complaints to the World Bank Inspection Panel, please visit [www.inspectionpanel.org](http://www.inspectionpanel.org).

## Annex 1: Results Framework and Monitoring

**Country: Tunisia**

**Project Name: TN-Road Transport Corridors (P146502)**

### Results Framework

#### Project Development Objectives

##### PDO Statement

The objectives of the Project are: (i) to reduce transportation cost and time and improve road safety on select road corridors between lagging regions and more developed areas in the territory of Tunisia; and (ii) to strengthen the capacity of the Ministry of Equipment, Habitat and Land Planning in road asset management.

**These results are at** | Project Level

#### Project Development Objective Indicators

Indicator Name	Baseline	Cumulative Target Values									
		2015	2016	2017	2018	2019	2020				End Target
Reduction of vehicle operating costs on the roads improved by the project (Percentage)											
RN12 corridor	0.00				1.3%	3.3%	6.1%				6.1%
RR133 corridor	0.00				6.1%	15.0%	16.4%				16.4%
RN4 corridor	0.00				1.7%	12.9%	15.1%				15.1%
Reduction in travel time on the roads improved by the project (Percentage)											
RN12 corridor	0.00				15.8%	19.1%	22.1%				22.1%
RR133 corridor	0.00				6.7%	17.1%	25.0%				25.0%
RN4 corridors	0.00				1.1%	27.4%	30.0%				30.0%
Number of traffic-related fatalities per hundred million vehicle-kilometers travelled (vkt) on the roads improved by the project (Number)											

RN12 corridor	5.3						3.7				3.7
RR133 corridor	7.0						4.9				4.9
RN4 corridor	4.3						3.0				3.0

### Intermediate Results Indicators

Indicator Name	Baseline	Cumulative Target Values									
		2015	2016	2017	2018	2019	2020				End Target
Roads constructed, Non-rural (Kilometers) - (Core)	0.00	0.0	7.2	60.3	129.6	137.8	137.8				137.8
Roads rehabilitated, Non-rural (Kilometers) - (Core)	0.00	0.0	2.3	5.7	7.6	8.7	8.7				8.7
Direct project beneficiaries (number), of which female (percentage) (Core)	0 0% female						373,500 50% female				373,500 <sup>13</sup> 50% female
Person-months	0	0	10,800	27,000	36,000	40,800	40,800				40,800 <sup>14</sup>

<sup>13</sup> This target value is calculated using the 2014 census population data for the sub-governorate districts (“délégations”) located on the route of each improved road section as a means of approximating the population located within 2 km of the roads. It includes the following districts: RN 4: el Fahs, Bargou, Siliana Nord, Siliana Sud; RN 12: Kairouan Nord, Kairouan Sud, Sidi el Heni, M’Saken, Sousse Riadh ; RR133: Zaghuan, Bir Mchergua.

<sup>14</sup> Target value estimated as follows (cf. footnote 9, above): 17,000 annual jobs per billion dollars invested x 0.2 billion dollars x 12 person-months per annual job = 40,800 person-months.

of employment created during construction (Number)											
Available budget for routine maintenance of classified roads (TND/km of classified roads)	1,542	1,542	1,619	1,696	1,773	1,850	1,927				1,927
Grievances registered related to delivery of project benefits that are actually addressed within the stipulated timeframe (percentage) – disaggregated by gender of the complainant	N/A	N/A	80%	80%	90%	100%	100%				100%
Preparation and execution of a five-year investment and maintenance plan using HDM-4 (Yes/No)	No	No	No	No	Yes	Yes	Yes				Yes
Feasibility	No	No	No	Yes	Yes	Yes	Yes				Yes

Study on performance-based contracting completed and technical specification for a pilot project in lagging regions validated (Yes/No)											
Percentage of the national and regional road network (traffic and state of roads) managed using HDM-4 (Percentage)	0%	0%	60%	70%	80%	90%	100%				100%
Use of road asset management principles by DGPC for maintenance budget assessment (Yes/No)	No	No	Yes	Yes	Yes	Yes	Yes				Yes

## Indicator Description

### Project Development Objective Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Reduction of vehicle operating costs on the roads improved by the project (Percentage)	Percentage reduction in transportation costs per passenger-kilometer and per ton-kilometer on the road corridors to be improved.	Annual after completion of civil works	The Vehicle Operating Cost (VOC) targets were calculated using HDM-4 by comparing the annual VOC in the base case (no project) with the project case.  Project performance will be calculated using HDM-4 with updated input data reflecting the state of the roads after civil works.	DGPC/PIU
RN12 corridor	As above.	As above.	As above.	As above.
RR133 corridor	As above.	As above.	As above.	As above.
RN4 corridor	As above.	As above.	As above.	As above.
Reduction in travel time on the roads improved by the project (Percentage)	Number of minutes by which average travel time is decreased on the road corridors improved by this project.	Annual after completion of civil works	Actual travel time as measured by DGPC staff, excluding any stops.	DGPC/PIU
RN12 corridor	As above.	As above.	As above.	As above.
RR133 corridor	As above.	As above.	As above.	As above.
RN4 corridor	As above.	As above.	As above.	As above.
Number of traffic-related fatalities	Traffic-adjusted rate of deaths per year. The indicator is expressed as a ratio of crash fatalities per vehicle-kilometer travelled (VKT) on the road section in	At project completion	Official statistics provided by DGPC and collected by police.	DGPC/PIU

	question, on a five-year rolling average basis. The baseline is calculated using crash fatalities and VKT data for 2008-2012. The targets are calculated as 50 percent of the projected, speed-adjusted fatality rate without the project, which is consistent with the target of the global Decade of Action on Road Safety.			
RN12 corridor	As above.	As above.	As above.	As above.
RR133 corridor	As above.	As above.	As above.	As above.
RN4 corridor	As above.	As above.	As above.	As above.

### Intermediate Results Indicators

Indicator Name	Description (indicator definition etc.)	Frequency	Data Source / Methodology	Responsibility for Data Collection
Roads constructed, Non-rural (Kilometers) - (Core)	Kilometers of non-rural roads constructed under the project. In the context of this project, this involves all roads upgraded to double carriageway configuration, though not roads which are only reinforced. Non-rural roads are roads functionally classified in various countries as Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Typically, non-rural roads connect urban centers/towns/settlements of more than 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers. Urban roads are included in non-rural roads.	Semi-annually	Source: DGPC statistics	DGPC/PIU
Roads rehabilitated, Non-rural (Kilometers) - (Core)	Kilometers of all non-rural roads reopened to motorized traffic, rehabilitated, or upgraded under the project. Under this	Semi-annually	Source: DGPC statistics	DGPC/PIU



	<p>project, this indicator specifically refers to roads reinforced but not upgraded to double carriageway configuration. Non-rural roads are roads functionally classified in various countries as Trunk or Primary, Secondary or Link roads, or sometimes Tertiary roads. Typically, non-rural roads connect urban centers/towns/settlements of more than 5,000 inhabitants to each other or to higher classes of road, market towns and urban centers. Urban roads are included in non-rural roads.</p>			
<p>Direct project beneficiaries (number), of which female (percentage) (Core)</p>	<p>Direct beneficiaries are defined as the population living within 2 km of any of the roads improved by the project. For the purposes of the project, this target value is calculated using the 2014 census population data for the sub-governorate districts (“délégations”) located on the route of each improved road section as a means of approximating the population located within 2 km of the roads. It includes the following districts: RN 4: el Fahs, Bargou, Siliana Nord, Siliana Sud; RN 12: Kairouan Nord, Kairouan Sud, Sidi el Heni, M’Saken, Sousse Riadh ; RR133: Zaghouan, Bir Mchergua.</p>	<p>At project completion</p>	<p>This indicator is best calculated using GIS. A 2 km buffer around the project roads can be joined with a population map layer to calculate the number of direct beneficiaries.</p> <p>Percentage of female direct beneficiaries can be calculated in the same way, as census data are disaggregated by gender.</p>	<p>DGPC/PIU</p>
<p>Person-months of employment created during construction (Number)</p>	<p>Person-month defined as 20 person-days or 1/12 of a person-year.</p>	<p>Semi-annually</p>	<p>The information will be provided by the company responsible for civil works and verified by the supervision consultant.</p>	<p>DGPC/PIU</p>
<p>Available budget for routine maintenance of</p>	<p>Total state annual budget received by MEHLP for routine road maintenance</p>	<p>Annually</p>	<p>MEHLP budget statistics.</p>	<p>DGPC/PIU</p>

classified roads (TND/km of classified roads)	(known as “Titre I” under Tunisian regulation), divided by number of km of roads in the classified network in that year. Calculated as a five-year rolling average.			
Grievances registered related to delivery of project benefits that are actually addressed within the stipulated timeframe (percentage) – disaggregated by gender of the complainant	The percentage of individual grievances registered via the project’s GRM established in accordance with the provisions of the safeguards documents which are addressed (i.e. a final decision is made on the grievance and the complainant is informed of the result). The stipulated timeframe is 30 days after the complaint reaches DGPC. The numbers are to be disaggregated by the gender of the complainant.	Semi-annually	Grievance records to be centralized, addressed and monitored by the social focal point Specialist in PIU	DGPC/PIU
Preparation and execution of a five-year investment and maintenance plan using HDM-4 (Yes/No)	The use of road asset management techniques and data to prepare a viable multi-year investment plan with specific priorities would reflect a fundamental change in the way Tunisia's roads are managed. The use of performance-based contracting will be included as part of road asset management for the purposes of this indicator. The plan must be executed for this indicator to be satisfied.	Semi-annually	Production of the report to be indicated by official adoption of the final investment plan by the MEHLP. Execution to be indicated by signing a contract for the execution of the first priority investment contained in the report.	DGPC/PIU
Feasibility Study on performance-based contracting completed and technical specification for a pilot project in lagging regions validated (Yes/No)		Semi-annually	Existence of report and evidence of validation	DGPC/PIU
Percentage of the national and regional road network (traffic and state of roads)	Proportion of the national secondary road network (“routes nationales”) whose maintenance data have been gathered and	Semi-annually	Comparison of database contents against national road inventory	DGPC/PIU

managed using HDM-4 (Percentage)	entered into the HDM-4 database. The total length of this portion of the national road network is 4,745 km as of 2015.			
Use of road asset management principles by DGPC for maintenance budget assessment (Yes/No)	Preparation of yearly maintenance condition reports of national and regional roads in lagging regions and linking lagging regions to economic centers (coastal areas)	Annually	Examination of yearly maintenance condition reports.	DGPC/PIU

**Annex 2: Detailed Project Description**  
**TUNISIA: Road Transport Corridors Project**

1. **Project area:** The project area consists of three corridors of national and regional roads in the central areas of Tunisia, as follows:

Designation	From	To	Length (km)
Route nationale 12 (RN12)	Sousse	Kairouan	57
Route nationale 4 (RN4)	El Fahs	Siliana	65
Route régionale 133 (RR133)	Zaghouan	Tunis	24.5

2. The targeted corridors are important connections between some of the least-served and economically poorest regions of the country (North-West, Center-West) and the more dense transportation networks located along the eastern coast and in the region of the capital, Tunis. These are priority areas for the government in its efforts to improve transportation service and thereby economic opportunities in poor areas.

3. The project would support a portion of the program of modernization of national and regional road corridors, road safety improvement on these sections and institutional strengthening of the MEHLP.

4. The loan amount is US\$200 million equivalent and the grant amount is US\$ 909,000 out of a total project cost of US\$231.0 million. The project would include the following:

5. **Component 1: Road Improvements (US\$ 228.2 million total, including US\$ 200 million in IBRD loan financing).** The project will improve about 146 km of existing single-lane national and regional road sections on three road corridors. This component would include four sub-components:

- (a) Sub-Component 1.1: Widening and upgrading as necessary of about 57 km of National Road 12 between Sousse and Kairouan, including the upgrading of bridges, the improvement of culverts, intersections, and traffic signs, and the installation of road safety devices.
- (b) Sub-Component 1.2: Widening and upgrading as necessary of about 65 km of National Road 4 between El Fahs and Siliana, including the upgrading of bridges, the improvement of culverts, intersections, and traffic signs, and the installation of road safety devices.

(c) Sub-Component 1.3: Widening and upgrading as necessary of about 24 km of Regional Road 133 between Jebel el Oust and Zaghouan, including the upgrading of bridges, the improvement of culverts, intersections, and traffic signs, and the installation of road safety devices.

(d) Sub-Component 1.4: Supervision of the activities to be carried out under Sub-Components 1.1, 1.2, and 1.3 above (financed entirely by the Borrower).

6. This component will finance the improvement of the three targeted corridors of secondary and tertiary roads from two lanes to a two-by-two lane configuration. Civil works will include widening and upgrading of the road sections when necessary, upgrading of 17 bridges and improvement of 230 culverts, 52 road intersections, traffic signs and installation of other road safety devices (particularly in urban areas).

7. The goal is to bring the targeted corridors up to modern technical specifications and to reinforce the roadway itself. The route taken by each road shall remain unchanged to the extent possible except for a small number of specific modifications to road geometry required in order to conform to the specified engineering standards.

8. The twinning of the lanes will generally be done symmetrically on either side of the axis of the current road, or in a few cases by reusing the existing lane and building a new roadway in parallel. This latter type of arrangement is primarily reserved for use in the vicinity of major hydraulic works, to avoid impinging on existing works or to avoid displacing networks located nearby (particularly fiber optics).

9. The project provisions refer to the recommendations of the French scientific and technical network SETRA: technical guidelines for the management of main roads (*aménagement des routes principales* – ARP) and general guidelines on the technical conditions of urban expressways (*voies rapides urbaines* – VRU). Geometrical characteristics are based on reference speeds compatible with a 90 km/h speed limit in any given section, or less depending on local conditions: crossing urban areas or rugged terrain, or crossroads. This is often the case along RN 4. Intersections remain for the most part at level, either roundabout or T-junction types, as opposed to the practice for highways where they are uniformly grade-separated.

10. In current practice, road corridors are designed with two roadways, each 7m wide, a central median 3m wide (or 5m when approaching intersections equipped with a dedicated left-turn lane), two emergency stopping buffers (shoulders) of 2.5m and berms of 1-1.5m. In the mountainous parts of RN 4, the road features have been adapted to minimize earthworks and reduce impacts on adjacent lands.

11. For major structures such as bridges or overpasses, the cross-section retains the same width characteristics to avoid any narrowing effect. Only the berm is removed and replaced with sidewalks. In urban areas, the cross-section is adapted to the size and characteristics of the urban center. Hydraulic works were sized based on a return period of 50 years for culverts and channels, and 100 years for major structures.

12. The main constraint for this type of works is ensuring the treatment of level junctions and the preservation of local access on roads where speed tends to increase after twinning the lanes. The choice of intersection type and their distribution along the route were the subject of a comprehensive study to provide an overview of the management of intersections in the corridor. In open country, the number of T-junctions that cross the central median was minimized. Parallel lanes have been created where necessary to allow channeling of local traffic towards an interchange or a nearby urban area.

13. Lighting and safety equipment (restraints) are included in the design study of the roadways. It is also expected that all intersections to be refurbished by the project will be lighted for safety reasons.

14. The section of RN 12 between Sousse and Kairouan poses no particular technical problems, either along its existing route or for the diversion around Kairouan (the north-eastern section is included in the development plan in a flat and open environment). The interchange with the Sousse diversion, at the starting point of the corridor, is located in a typical urban environment. The chosen variant fits into the existing footprint without touching the surrounding buildings, and is preferred from the perspective of safety. The decision was made to defer the construction of the Sidi El Heni diversion. Studies of new possible routings will be undertaken and preserved as options for future implementation. During the transition phase, safety precautions are planned for the crossing of this urban area: preservation of the traffic roundabouts at either end in the plan to mark the entrance to the city, improved street lighting, pavement strengthening and drainage, and creation of parking of the situation permits. The project will help to improve road safety on this section where 183 accidents with injuries were recorded by the National Road Safety Observatory between 2008 and 2012, killing 64 people and injuring 384.

15. The section of RR 133 between RN 3 and Zaghouan is in an economic center in full development, with industrial centers being created and numerous quarries nearby. The physical planning does not pose technical difficulties but some points have required particular attention during project design, notably for secure access to working quarries and the service requirements of facilities belonging to the national power utility, STEG. At the end of the works, the Zaghouan diversion will be refitted to two lanes without changing the footprint. The pavement will be strengthened and qualitative improvements will be made (parking, bus stops, etc.)

16. The modernization of RN 4 between El Fahs and Siliana is intended to better serve the city of Siliana and thereby contribute to the economic and social development of this predominantly agrarian region. It is also a road aimed at integrating particularly isolated populations with a strong sense of seclusion, which corresponds to a national planning objective.

17. The first version of the APS provided for a central median of 12m, for a possible future upgrade to 2x3 lanes. The engineering design was later revised to characteristics better suited to this type of road: a 3m median in most places, 1.6m in the central, mountainous section. In this mountainous section, the routing has been optimized to be closer to the current axis while respecting a 200m minimum radius of curvature. These changes help to minimize earthworks and reduce the impact on adjacent lands. They also have the effect of significantly reducing the cost of the works. The layout of RN4 will also resolve major issues related to the various flood

zones located along the route. The construction of the Bargou diversion is deferred, but the study has been conducted and the lands will be reserved. Qualitative improvements will be carried out during a transition phase to ensure safety over the entire crossing through the town.

18. The cost per kilometer of the civil works is calculated as follows for each road section:

- (a) RN12: TND 2.32 million/km (US\$ 1.21 million/km)
- (b) RR133: TND 2.27 million/km (US\$ 1.19 million/km)
- (c) RN4: TND 2.77 million/km (US\$ 1.45 million/km)

19. The higher unit price for RN4 is consistent with the more mountainous terrain in which it is located. For comparison, similar works contracted in the Sousse governorate in May 2014 to improve a 15 km section of road to a 2x2 configuration cost TND 2.3 million/km. The approximate cost of building new 2x2 roadways in Tunisia is in the order of TND 4 to 6 million/km.

20. The DGPC will retain responsibility for the supervision of the works. Supervision will be carried out jointly by the staff of the PIU and of the DREH for the governorates in question. It will further be supported by the hiring of one or more supervision consultant firms who will assist with daily supervision tasks and provide specific technical services (e.g. supervision of application of the ESMPs). The supervision consultant(s) will be financed from the DGPC budget.

**21. Component 2: Road Network Management Improvement (US\$ 2.8 million total, including US\$ 0.9 million in MDTF grant financing).** The project will support the transformation in the way the MEHLP manages the road network and plan public investment. This component is divided in two sub-components:

(a) Sub-Component 2.1 (US\$ 1.9 million, financed entirely by the government): Acquisition of: (i) monitoring equipment for the central laboratory of CETEC in Tunis and its regional laboratories at Sousse, Kairouan, Zaghouan and Siliana, in order to improve the management of the national and regional road network; and (ii) vehicles for supervising the civil works on the road network to be carried out under Component 1 above. Equipment will be used primarily to support quality control and supervision of works. The use of the equipment financed by the Borrower will not be limited to the project. Although there are private professional laboratories, their number is considered too small to ensure proper competition, thereby requiring a public institution to fill the gap. The long-term plan is to move to a situation with a stronger role for the private sector but the equipment will support immediate needs to support quality control beyond the project. In Tunisia's current context, CETEC therefore plays a critical role in the control, monitoring and verification of quality and expertise in the road sector, but is limited by its outdated equipment. CETEC needs support in order to fully assume its central role in driving the continuous updating of norms, regulations and standards in the field of road construction and maintenance.

(b) Sub-Component 2.2 (US\$ 0.9 million, financed entirely by the MDTF grant):

Strengthening the technical capacities of selected staff at MEHLP regarding: (i) the design and implementation of decision-making tools to better plan road maintenance and road public expenditure, including in the lagging regions; and (ii) the review of the role of public and private sectors in the management of the road sector, including the use of performance-based contracts for rehabilitation and maintenance of roads; and strengthening the technical capacities of selected staff at MEHLP, other relevant Ministries and public entities and relevant private sector entities regarding modern road asset management and performance-based contracts for road maintenance; all through the provision of technical advisory services and training, the carrying out of studies, and the acquisition of computer equipment and software. This Sub-Component will involve action in three areas:

(i) Design and implementation of decision-making tools to better plan maintenance and public expenditure, including lagging regions (US\$ 606,000). This will finance the purchase and implementation of a road asset management information system (e.g. HDM-4) for the national network. This will provide a unified asset database as well as decision-making tools for planning maintenance and other interventions concerning road assets. The system will provide a consolidated scorecard of the state of national and regional roads (including in lagging regions), and decision making tools will allow to better plan expenditure in order to maximize the economic benefits of public expenditure in the road sector. This will, in turn, contribute to improving the state of the road network and allow the MEHLP to better respond to the needs of lagging regions. The DGPC will be responsible for funding data collection. Capacity-building for the above-mentioned activities is included, primarily to take the form of training, but including any other capacity building activities, including designing courses to be taught by local universities, necessary to support the technical work.

(ii) Review of the role of public and private sector in the management of the sector, including the use of performance-based contracts for rehabilitation and maintenance of roads (US\$303,000). This will increase the role of the private sector in the road sector, with a focus on the use of performance-based contracts for rehabilitation and maintenance of national and regional roads in lagging regions. The suggestion to use performance-based contracts in Tunisia is based on international experience and adapted to the national context. It represents a significant change from the current role of the private sector in maintaining Tunisia's road assets. A study will review the capacity of the Ministry of Transport, local contracting industry, financial sector, and all other relevant stakeholders to support the introduction of this concept in Tunisia. It will also identify at least two potential pilot road sections in lagging regions and will prepare detailed performance-based specifications (not technical specifications or road design) that would be used in a pilot project to be contracted by the DGPC. The scope, duration and location of the pilot interventions will be established by the study. Capacity building for the abovementioned



activities is included, primarily to take the form of training, but including any other capacity building activities, including designing courses to be taught by local universities, necessary to support the technical work.

22. Sub-Component 2.1 will finance the purchase of equipment for quality control and testing of civil works and vehicles for road supervision. Total equipment cost is TND 3.6 million, equivalent to US\$ 1.9 million. These funds will be drawn entirely from the Borrower contribution.

23. Sub-Component 2.2 will be funded by a US\$ 909,000 grant from a MDTF to support the sector transformation. This Sub-Component is expected to be completed by March 31, 2017.

## **Annex 3: Implementation Arrangements TUNISIA: Road Transport Corridors Project**

### **A. Project Institutional and Implementation Arrangements**

1. The Road Transport Corridor Project will be implemented by the MEHLP through the DGPC. The DGPC is responsible for the management of the classified road network, except the 360 km of highways under the responsibility of Tunis Autoroute. In line with Government decentralization policy, a regional directorate of MEHLP was created in each Governorate (a total of 24) with a maintenance and management service with responsibility for vehicle/equipment and maintenance works.

2. The CETEC is a public administrative entity, under the responsibility of the MEHLP. It is responsible for: (i) undertaking necessary testing of soils in situ, the different constituent materials of roadways (bitumen, gravel, clay, concrete, etc.); (ii) carrying out studies and tests on structures of particular types or making use of new materials under static or dynamic loads with respect to their use in construction; (iii) undertaking all studies on themes concerning the sector, and particularly on fouling of roads in arid regions, protection of cities against flooding, roadway fatigue, pathologies of road works, and earthquake-resistant construction; (iv) contributing to the development of standards for construction materials and techniques; (v) promoting relationships between the department and universities and research institutes; (vi) participating in international technical cooperation related to the CETEC's mandate; (vii) disseminating scientific knowledge relating to the sector via publications or any other appropriate means; (viii) formulating technical advice on the suitability for use of new processes, materials or equipment; (ix) developing technical regulations concerning the calculation and employment of road works as well as standards for their maintenance through applied research and quality control on materials and civil engineering works; (x) controlling bituminous products imported or manufactured in Tunisia; (xi) maintaining the Chair of the national commission for the monitoring of bituminous products imported or manufactured in Tunisia.

3. CETEC has six sections: (i) a soils section in which Proctor, CBR, and Atterberg limit testing is conducted to assess "sand equivalency" to determine materials' granularity. Testing to determine the mechanical and physical characteristics of granulates: for the "Los Angeles" fracture resistance test and for the "Micro Deval" abrasion resistance test; (ii) a section for the testing of black products (Marshall, PCG, binder content, Duriez, Los Angeles, granularity, etc.); (iii) a concrete section which tests cement, and mortar and concrete sand; (iv) a foundations section which conducts direct shear testing, triaxial testing, odometer testing; (v) a chemistry section which conducts methylene blue testing as well as gypsum content; and (vi) the control section responsible for conducting control tests at the worksite (Proctor, probing, membrane densitometer, etc.).

4. CETEC's stock of measure and testing instrumentation dates from the 1960s to 1980s and much of it is neither suitable to modern use nor up to current standards. Although there are private laboratories, the CETEC plays a very important role in control and measurement for the road sector.

5. The DGPC has much experience in the design and execution of externally funded road projects, including with the EIB and AfDB. Given this experience, the risk of technical or contract-related problems related to the capacity of the implementation agency is considered to be moderate. However, the DGPC has not worked with the Bank on a road project for more than 10 years and there was limited understanding of Bank policies, including in procurement, FM, environmental and social safeguards. Most project preparation activities for the RN12 and RR133, including bidding documents, RAPs, and ESIA's were prepared before appraisal. For the RN4, where the final alignment is still not fully defined, a RPF and ESMF have been prepared, reviewed and published/consulted before appraisal.

6. The DGPC has established within its own internal structure a specific PIU which is responsible for all aspects of the overall preparation and implementation of the Road Transport Corridors and potential future World Bank-financed projects. Similar structures have been created for EIB and AfDB funded projects. The PIU has a dedicated staff and shares resources, including on technical, procurement, and safeguards issues with the structures created for EIB and AfDB projects. Consultants were recruited to prepare the ESMP and RAP (for RN12 and RR133), and the RPF and ESMF (for RN4) prior to appraisal.

7. The staff of DGPC comprises the following:

- a. Engineers: 71
- b. Assistant engineers and technicians: 48
- c. Administrative personnel: 44
- d. Laborers: 182

8. The PIU is a Directorate composed of one Sub-directorate which includes the following Services:

- a. Service charged to monitor the twinning of the RN4 and RR133 roadways;
- b. Service charged with monitoring the execution of the twinning of the RN12 roadway;
- c. Administrative and Financial Service;
- d. Service charged with land acquisition, and environmental protection including monitoring and evaluation of ESMP application; and
- e. Technical study and Procurement Service.

9. During project preparation, the MEHLP/DGPC received extensive training from the Bank staff on the World Bank policies, including in procurement, FM, environmental and social safeguards. As the MEHLP was already working on large road projects with EIB and AfDB, more emphasis was put on environmental and social safeguards. MEHLP has recruited a consultant on environmental safeguards for the World Bank-financed projects, as well as social

safeguards consultants for the preparation of the RAPs. The Bank organized a seminar on environmental and social safeguards in December 2013 and had several working sessions on preparing framework and investment-specific safeguards documents (ESMF, ESMP, RPF, and RAP). Despite the improved capacity, the environmental and social risk was kept as substantial to take into consideration the risk of delays in completing the land acquisition process. In order to mitigate this risk, the existing working group under the Presidency of Government would help coordinate between ministries in order to ensure that proper procedures are followed and compensation for land acquisition occurs in a timely manner. The PIU will hire or designate Environmental and Social specialists during implementation phase of the project for dedicated oversight and monitoring of the ESMPs and RAPs.

## **B. Financial Management, Disbursements and Procurement**

### **Introduction & Project Background**

10. The proposed operation would support a portion of a program of modernization of national and regional road corridors, road safety improvement and institutional strengthening.

11. Following World Bank's OP 10.00, the Bank carried out a FM assessment of the DGPC within the MEHLP in June 2014. The main objective of this assessment was to determine whether the FM arrangements proposed for the project provide reasonable assurance that the loan and grant proceeds will be used for the purposes intended and with due attention to considerations of economy and efficiency.

12. The FM assessment concluded that, while the proposed FM arrangements are generally acceptable, there are areas for improvement and several mitigating measures have to be put in place to ensure smooth implementation.

### **Executive Summary**

13. The project design is relatively simple and straightforward. The MEHLP through DGPC will implement the project and will be responsible for overall fiduciary oversight including FM and disbursement arrangements. The assessment revealed that the FM arrangements proposed by the borrower are acceptable because generally they are capable of: i) recording correctly all transactions and balances; ii) supporting the preparation of regular and reliable financial statements; iii) safeguarding the entity's assets; and iv) being subject to auditing arrangements acceptable to the Bank. However, there are a few significant weaknesses and risks that need to be addressed in order to ensure a solid fiduciary environment for a smooth project implementation, namely: i) the DGPC lacks recent experience handling World Bank-financed operations, ii) the project accounting will not use a computerized accounting system, iii) DGPC does not have an internal audit department, iv) the DGPC financial staff is not familiar with the World Bank disbursement procedures, v) the project financial reporting will be prepared manually, and vi) the project's annual audit reports might be submitted with considerable delay.

14. In order to mitigate the identified risks and weaknesses, the DGPC, along with the Bank support, will implement the following mitigating measures: (i) hire a part-time staff specialist to handle project FM matters to the PIU by DGPC; (ii) provide specialized training on World Bank FM and disbursement procedures to build capacity of current administrative and finance staff, within the DGPC, that will handle project financial aspects; (iii) follow a Project Operations Manual satisfactory to the Bank and adopted by the MEHLP that includes detailed accounting, disbursement and financial reporting procedures; (iv) set up segregated project DAs in Euros (for the Loan) and in US dollars (for the Grant) held at the Central Bank of Tunisia (CBT) and managed by CBT staff; (v) make wide use of the project financial information gathered through the ADEB, which although it is essentially a budget system, allows for a proper follow up of project commitments and payments; and (vi) ensure timely preparation of project's final financial statements within six months after the fiscal year closure that will allow the external auditor to perform the audit work in a timely manner in order to comply with Bank audit requirements. Once these mitigating measures are implemented, the overall FM residual risk of the project is Moderate.

### **Risk Assessment & Mitigating Measures**

15. The table below summarizes significant FM risks identified during the assessment and the mitigating measures agreed with the Borrower to address them.

<b>Risk type<sup>15</sup></b>	<b>Risk Rating</b>	<b>Comments/risk mitigating measures incorporated into Project design</b>	<b>Residual Risk Rating</b>
<b>Inherent risk</b>	<b>S</b>		<b>M</b>
Country level	M	The main conclusions of the 2010 PEFA concluded that the legal and administrative framework for public FM is sound and offers a solid level of assurance regarding the reliability of information and a strong control environment; nevertheless there are transparency and accountability failures that still need to be addressed.	M
Entity	S	The DGPC has not recent experience handling World Bank-financed operations; therefore there is a risk that the project might face problems coping with Bank fiduciary requirements, including disbursement and FM matters, during implementation. To mitigate this risk, specialized training on Bank's FM and disbursement procedures will be delivered to current administrative and finance staff that will handle project's FM within the DGPC.	M
Project	L	Project design is relatively simple and straightforward. The project FM function will be centralized at the DGPC level.	L
<b>Control risk</b>	<b>S</b>		<b>M</b>
Budgeting	L	The project's budget will be embedded in the standard budgetary procedures of MEHLP and will be registered under the country's budgetary system ADEB which offers an acceptable framework for budget control and follow-up purposes. Additionally, the annual project budget will be prepared on the basis of the procurement plan which will have Bank's no objection.	L
Accounting	S	As the entity does not have a computerized accounting system, the accounting information for the project will be kept on Excel spreadsheets. Manual accounting poses a major control risk since data is more sensitive to structural errors, such as improperly written formulas; data errors, such as incorrect inputs of figures; and administrative errors, such as lack of password protection or improper sharing. To mitigate this risk the project will make wide use of the project financial information gathered through ADEB, which although it is essentially a budget system, allows for a proper follow up of project commitments and payments.	M
Internal Control	M	DGPC doesn't have an internal audit department; however, it has a wide range of	L

<sup>15</sup> The **inherent FM risk** is that which arises from the environment in which the project is situated. The **FM control risk** is the risk that the project's FM system is inadequate to ensure that project funds are used economically and efficiently and for the intended purpose. The **overall FM risk** is the combination of the inherent and control risks as mitigated by the client control frameworks.

		adequate internal control practices that are defined in the institution's policies and procedures which are well known by its staff. Additionally there is a clear segregation of duties for authorization, recording, payment, and reception of project goods/services. Finally, the Project Operations Manual describes and formalizes internal control activities	
Funds Flow	M	Funds flow arrangements for the project are not complex. The loan proceeds will flow from the loan account to the project DA opened at the CBT and from there to the services providers and suppliers. The CBT, which has wide experience and knowledge of Bank disbursement policies, will manage the project DA on behalf of the borrower.	L
Fin. Reporting	S	Although the DGPC has no experience preparing project reports for Bank-financed operations, they do have wide experience with other IFIs, which to certain extent, have similar Bank requirements. Project financial reporting arrangements are not complex, however some delays to produce and transmit them timely to the Bank may occur mainly because they will have to prepare manually. To mitigate this risk, the Project Operations Manual of the project clearly defines FM reporting responsibilities specifying what reports are to be prepared, by whom, their due date and content.	M
Auditing	S	As in most WB-financed projects in Tunisia, it is highly probable that project's external verification be entrusted to the "Contrôle General des Finances (CGF)". The CGF has been delivering audit reports with considerable delay mostly due to work overload. To mitigate this risk, the project will assure a timely fiscal year end accounting closure and a timely preparation of project's final financial statements so that they can address its request for audit to the CGF within six months after the fiscal year closure. This would allow the CGF to plan its work ahead on time in order to have a final audit report before June 30.	M
<b>Overall FM risk</b>	<b>S</b>		<b>M</b>

H: High; S: Substantial; M: Moderate; L: Low

## **Project Financial Management Arrangements**

16. The FM arrangements proposed by the Borrower are acceptable because generally they are capable of: i) recording correctly all transactions and balances; ii) supporting the preparation of regular and reliable financial statements; iii) safeguarding the entity's assets; and iv) being subject to auditing arrangements acceptable to the Bank.

**17. Implementation Entity (Including Staffing arrangements).** The MEHLP through the DGPC will implement the project. This unit will be responsible for technical and overall fiduciary oversight, including the project's FM arrangements. Although DGPC does not have specific experience working with the Bank-financed projects, they have demonstrated wide experience handling development projects financed by internationally recognized organizations such as the EIB and AfDB. For this operation, a part-time dedicated staff member has been assigned by the MEHLP in order to handle project FM matters. Additionally, DGPC will have the support of the Administrative and Financial Directorate (*Direction Administrative et Financière* – DAF) which will also help handle and consolidate all FM matters related to the project. The DGPC, with the support of the World Bank, will continue to train its staff on specific World Bank FM and disbursement policies in order to strengthen their fiduciary skills.

**18. Budgeting.** The MEHLP will follow local regulations established by the Ministry of Finance (*Loi Organique du Budget*) to prepare the annual budget for the project. The project budget will be embedded into the MEHLP's budget and will be published in the annual Budget Law (*Loi de Finances*). Additionally, the DGPC will record the approved project budget in the national system ADEB which not only allows for the proper record of commitments, payments and accruals, but also for adequate budget monitoring and control. This automated information is the pillar for the preparation of consolidated budget information and offers a sound control environment and an adequate segregation of duties. Government cash contributions will be also assured under the line ministry's annual budget.

**19. Accounting.** The MEHLP will primarily use ADEB to gather, record, classify, analyze, summarize, and present project's financial transactions and information. However, as ADEB is essentially a budget system, the project will also use a set of supplementary manual accounting procedures and controls. Thus the project will create customized Excel spreadsheets to appropriately record every transaction on a periodic basis (daily or weekly) and subsidiary ledgers with more detailed information to follow up on the project's commitments accounts. To ensure the continuous accuracy of financial records, the DGPC will reconcile project data recorded through ADEB with the one recorded through excel spreadsheets and subsidiary ledgers. Both, ADEB and manual accounting records will be the base to produce the project's Interim Financial Reports (IFR).

**20. Internal Controls and Internal Audit.** The project will use the existing internal control system in place within the MEHLP. This system conforms to the Government system and is deemed satisfactory by the Bank. It encompasses the following: i) appropriate guidelines for annual budget preparation and implementation; ii) clear segregation of duties; iii) different layers of approvals; iv) regular reconciliations of bank accounts that provide reasonable assurance of the accuracy of financial records; and v) acceptable procedures for documentation and record retention. Additionally, the DGPC has developed a detailed payment manual (*Procédure de traitement des décomptes*) that outlines the procedures for the processing of all invoices and payment requests, including the ones related to eligible expenditures financed by external funds. This control activity is applied to the entire institution including projects. Finally, the Project Operations Manual supplements existing internal controls by putting in place specific and detailed processes and procedures, key controls, instruments and monitoring tools for project implementation.

**21. Funds Flow.** The primary disbursement method for both the Loan and the Grant will be the "Advance to the DA method" which allows for providing funds to the project well in advance so that it may finance expected project expenditures as they are incurred. The loan will be disbursed in Euros, the Grant in US Dollars. In the event that the Bank determines that an ineligible expenditure has been financed by loan proceeds, the Bank may require MEHLP to either refund the amount to the DA, or in exceptional circumstances, as provided in the Bank disbursement policies, provide substitute documentation.

22. Following the country-specific approach for the management of external funds, the CBT will manage the DAs on behalf of the project and thus will be the one in charge of processing disbursement requirements, however, the responsibility to use the funds advanced by the Bank to finance eligible project expenditures remains with the project. The description of the funds flow is presented in the following diagram, where the solid lines represent the flow of money and the dotted lines represent the flow of information:

**Figure 1: Funds flow**

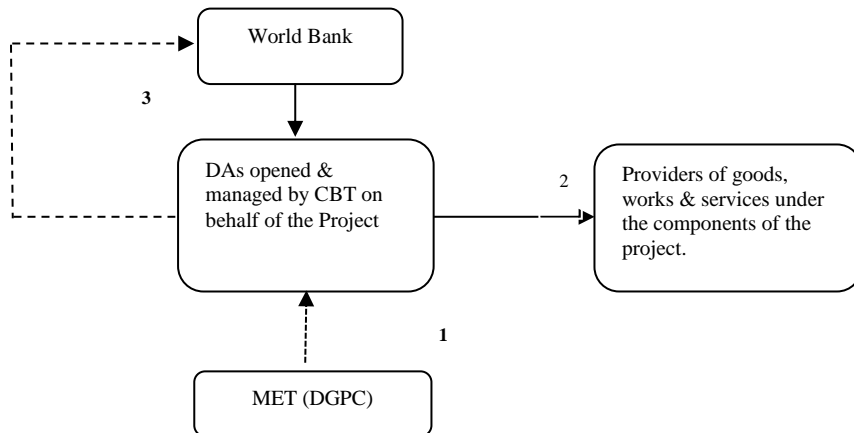


Diagram key:

1. Upon DGPC instruction, advances from the World Bank will be deposited into the appropriate project DAs opened at the CBT.
2. Following national practice, whenever there is a need to pay to suppliers of goods, works and services under any component of the operation, DGPC will instruct the CBT to make such payments directly to the supplier or consultant from the appropriate DA.
3. Further advances to the project's DA accounts will be made upon reporting on the use of a prior advance. DGPC (through the CBT) will monthly report on the use of loan proceeds advanced to the project's DAs in accordance with the Disbursement Letters. Total project's eligible expenditure will be summarized in the Statements of Expenditures (SOE) prepared by CBT and will be submitted to the Bank for processing.

**23. Project financial reports.** The DGPC, with the support of the DAF, will prepare the IFR every six months and will submit it to the World Bank within 45 days of the agreed reporting period. The report will reflect all project activities, financing and expenditures as described in the PAD and in the legal agreements, including counterpart funds, funds from other donors and in kind contributions if any. Specifically, the IFR will include: (i) a sources and uses of funds statement showing for the period and cumulatively (year to date) actual receipts and payments by main income and expenditure classifications; (ii) beginning and ending cash balances of the project; (iii) supporting schedules comparing actual and planned expenditures by component and by category of disbursements; (iv) a bank account reconciliation statement; and (v) the bank statement. The DGPC will use the cumulative IFR over the project year as the project's annual financial statements and will complement the information with a statement on the accounting policies adopted, explanatory notes and a management assertion.

24. The DGPC will use financial information generated from the public debt management system (SIADE), the government budgetary system (ADEB), and from subsidiary accounting information held in spreadsheets in excel to prepare the project financial reports. The IFR template has been discussed and agreed between the World Bank team and the DGPC.



25. **External Audit.** An external independent auditor, acceptable to the World Bank, will audit the project's financial statements, including the DA pertaining to the IBRD loan. The financial statements should be prepared in accordance with acceptable accounting standards and audited in accordance with acceptable auditing standards. To that end, the DGPC will prepare the terms of reference (TOR) for the audit work and will submit it to the Bank for its acceptance. The TORs should encompass both the audit of the financial transactions and an assessment of the internal control and should cover all the operations implemented under the project as well as all sources of financing including in kind contributions if any. As a minimum requirement, the auditor will produce (a) an annual audit report including his/her opinion on the project annual financial statements and (b) a management letter on internal controls. The project implementing unit should submit the audit report to the Bank within six months after the end of the fiscal year audited. For the MDTF grant, in lieu of the above procedure, a single audit report shall be furnished to the World Bank not later than six months after the grant closing date.

26. Following the country-specific approach for the audit of World Bank-financed projects, it has been agreed with the GoT that the annual project audit will be conducted by an independent auditing body acceptable to the Bank.

### **Project Disbursement Arrangements**

27. After considering the results of the assessment, the Bank will disburse proceeds from the Loan Account to the project using four disbursement methods: i) direct payments, ii) reimbursements; iii) advances to the DA; and iv) special commitments. The DA method will prevail over the others to ensure timely funding of project eligible expenditures. To that end, the project will open a segregated DA in Euros at the CBT where loan proceeds will be deposited. These funds cannot be commingled with other funds. Matters related to eligible project expenditures, disbursement percentage, withdrawal and reporting on the use of the loan proceeds, minimum value of withdrawal applications, supporting documentation, frequency of reporting eligible expenditures under the DA, and other important disbursement information are described in the project Disbursement Letter.

28. The Bank will disburse proceeds from the Grant Account to the project using three disbursement methods: i) direct payments; ii) reimbursements; and iii) advances to the DA. The DA method will prevail over the others to ensure timely funding of project eligible expenditures. To that end, the project will open a segregated DA in US Dollars at the CBT where Grant proceeds will be deposited. These funds cannot be commingled with other funds. Matters related to eligible project expenditures, disbursement percentage, withdrawal and reporting on the use of the loan proceeds, minimum value of withdrawal applications, supporting documentation, frequency of reporting eligible expenditures under the DA, and other important disbursement information are described in the project Disbursement Letter.

### **Implementation Support Plan**

29. Given the overall residual FM risk of Moderate, the project IS strategy will include the following: i) bi-annual on-site supervision missions to monitor project FM risk and to ensure continue adequacy of agreed FM arrangements, (ii) desk review of IFRs; (iii) desk review of the

auditors' reports and follow-up of any issues raised by auditors in the management letter, as appropriate; (d) update of the project FM performance and risk through the Implementation Status and Results Report (ISR). A mid-term review shall be furnished to the Bank on or about September 30, 2017, or such later date as the Bank shall request.

## **Procurement**

30. Procurement for the project will be carried out in accordance with the World Bank "Guidelines: Procurement of Goods, Works and Non-Consulting Services under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011, revised July 2014 ("Procurement Guidelines"), and "Guidelines: Selection and Employment of Consultants under IBRD Loans and IDA Credits and Grants by World Bank Borrowers" dated January 2011, revised July 2014 ("Consultant Guidelines"), and the provisions stipulated in the Loan and Grant Agreements. National Competitive Bidding (NCB) will be carried out following procedures acceptable to the Bank. The World Bank "Guidelines on Preventing and Combating Fraud and Corruption in Projects Financed by IBRD Loans and IDA Credits and Grants" dated October 2006 and revised January 2011("Anti-Corruption Guidelines") shall apply to the project.

31. The DGPC will have primary responsibility for project implementation and ensuring that the project development objectives are met. A PIU has been established under the DGPC, to assume overall responsibility for day to day project management, coordination and monitoring of the project. The PIU will be supported by a number of advisers with specific expertise, e.g. procurement, FM and monitoring and evaluation. In terms of procurement, DGPC will ensure, through the procurement specialist within the PIU, that procedures are consistent with the provisions of the legal agreements for the whole project.

### ***Procurement capacity assessment***

32. A procurement capacity assessment was carried out for the DGPC. The evaluation undertaken covered: (i) the procurement institutional architecture and procedures under DGPC, (ii) the qualifications and experience of staff that will potentially be in charge or involved in procurement, and (iii) the flows of information between DGPC and other services of the MEHLP. Overall, if the measures indicated in the action plan are enforced, the DGPC will have the capability to implement procurement procedures within the framework of the project, as described in the legal agreements. The diagnostic includes all the procurement process (planning; preparation of tender and consultation documents; reception and evaluation of bids; finalization and signature of contracts; archival of all documentation in order to check the compliance of procedures with the legal agreements). The assessment conclusion is that the implementing agency (DGPC) has the capacity to carry out and manage project procurement provided they mobilize adequate capacity and that the recommended actions are taken. A satisfactory Procurement Plan for the first 18 months of implementation has been received by the World Bank. The overall risk has been rated as **Moderate**.

33. The summary assessment and recommendations are shown in the table below.

Analysis of Procurement Capacity	Issues/Risks	Mitigation Measures
<b>1. Accountability for Procurement Decision in the Implementing Agencies</b>	While the procurement decisions, within public institutions, are clearly defined in the Tunisian public procurement decree, the procurement responsibilities within DGPC and coordination with other key stakeholders are detailed in the Project Operations Manual	The Project Operations Manual clearly defines the role of each procurement stakeholder (technical Departments, regional directorates, DAF of the MEHLP, etc...).
<b>2. Internal manuals and clarity of the Procurement Process</b>	While procurement process is well mastered within DGPC, DGPC does not have previous experience in implementation of Bank-funded projects	It is recommended to train the DGPC PIU on new procurement and consultants guidelines (Edition January 2011) <b>(within 3 months from Project's effectiveness)</b>
<b>3. Record Keeping and Document Management System</b> Procurement records will be kept under the custody of the units responsible within DGPC.	<b>There is no concern</b> about DGPC's record keeping and Document Management System	Ensure that training is given to DGPC to ensure that project specific files are kept for all procurement and related transactions and recorded contract by contract. <b>(within 3 months from Project's effectiveness)</b>
<b>4. Staffing</b>	<b>While there is no concern</b> about DGPC's staffing (based on DGPC's experience with other MDBs and IFIs funded projects), a procurement specialist should be fully assigned to the PIU	DGPC has assigned a procurement specialist to the project.
<b>5. Procurement Planning</b>	<b>While there is no concern</b> about DGPC's experience in procurement planning (based on DGPC's experience with other MDBs and IFIs funded projects), there are specific needs about procurement planning in compliance with the Bank procurement guidelines	The Bank will provide DGPC with the required TA on procurement planning <b>(Throughout project implementation)</b>
<b>6. Bidding Document, Short-listing and Evaluation criteria</b>	<b>There is no concern</b> about DGPC's familiarity with the use of standard documents	Procurement standard documents are provided in the Project Operations Manual.
<b>7. Advertisement, Pre-bid/proposal conference and Bid/Proposal submission</b>	<b>There is no concern</b> about transparent advertisement of procurement opportunities by DGPC	Make sure that DGPC staff involved in project's procurement are trained on how to advertise procurement notices on clientconnection <b>(by project effectiveness )</b>
<b>8. Evaluation and award Contract.</b>	The assessment could not ascertain whether DGPC would be able to award the contract, within the period of the validity of bids, to relevant bidder	Make sure that DGPC staff involved in project's procurement are trained on the Bank's Bid Evaluation Manual <b>(by project effectiveness/ Throughout project implementation )</b>

<b>9. Review of procurement Decision.</b>	Review of procurement decision by Ministerial committee and/or Control Commission could be too slow, cumbersome and bureaucratic resulting in bottlenecks.	Sensitize the relevant procurement committees and controllers on procurement rules that apply to the project and make sure that procurement will be expedited <b>(Throughout project implementation)</b>
<b>10. Contract management and administration.</b>	DGPC is quite experienced in this field.	Make sure that required assistance is timely provided to DGPC, if needed <b>(Throughout project implementation)</b>
<b>11. Procurement oversight</b> For DGPC, procurement oversight is the responsibility of the Procurement control commission and the expenditure controllers. The process may be slow, cumbersome and bureaucratic resulting in bottlenecks.	Excessive prior control by competent procurement committees will slow down the project implementation	Sensitize the DGPC Controller and involved procurement committees on the need for simplification of prior review control <b>(Throughout project implementation)</b>

34. The applicable Thresholds by methods and for prior review are detailed in the Table below. These thresholds are meant to be used for the procurement planning at the beginning of the project implementation. They could be revised after each Procurement Post Review depending on the findings and recommendations of the reviewer in view of the improvement (or otherwise) of the procurement implementation and the subsequent risk assessment.

<b>Prior Review Thresholds (in US Dollars)</b>						
<b>Procurement Type</b>			<b>Moderate Risk Implementing Agency</b>			
Works, Turnkey and S&I of Plant and Equipment			15 million			
Goods			3 million			
IT Systems and Non-consulting Services			3 million			
Consulting Firms			1 million			
Individual Consultants			0.3 million			
<b>Procurement Method Thresholds (in US Dollars)</b>						
	<b>Goods</b>			<b>Works</b>		
	<b>ICB *</b>	<b>NCB</b>	<b>Shopping</b>	<b>ICB *</b>	<b>NCB</b>	<b>Shopping</b>
Tunisia	> 3 million	≤ 3 million	≤ 200,000	> 10 million	≤ 10 million	≤ 300,000

*\* Could be used irrespective of the contract value upon Bank's agreement with Borrower's recommendation*

35. Financing under the project would cover activities under the two project components and include: **(i) Works** (improvement of about 146.5 km of existing single-lane national and regional road sections on three road corridors) to be financed by the IBRD loan only, as the MDTF grant will not finance works; **(ii) Goods and IT system** (purchase of monitoring equipment to assist MEHLP to better manage the national and regional road network); **(iii) Consulting Services** (implementation of a Road Asset Management System; and **(iv) Training/capacity building** (capacity building of Government staff and the private sector on modern asset management and performance-based contracts).

36. A detailed list of procurement by category is given in the table below:

<b>Category</b>	<b>Activities</b>
<b>(i) Works</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Improvement of 57 km of National Road 12 between Sousse and Kairouan</li> <li><input type="checkbox"/> Improvement of about 65 km of National Road 4 between El Fahs and Silian</li> <li><input type="checkbox"/> Improvement of 24.5 km of Regional Road 133 between Zaghouan and Tunis</li> </ul> <p><i>Civil works will include widening and upgrading of the road sections when necessary, upgrading of bridges and improvement of road intersections, traffic signs and implementation of other road safety measures. The expected selection methods to be used are : International Competitive Bidding (ICB) and NCB</i></p>
<b>(ii) Goods and IT System</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Purchase of monitoring equipment to assist MEHLP to better manage the national and regional road network. Equipment will be used primarily to support quality control and supervision of works</li> <li><input type="checkbox"/> Purchase of vehicles for supervision of the civil works on the road network.</li> </ul> <p><i>The expected selection methods to be used are : ICB and NCB</i></p>
<b>(iii) Consulting Services</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> Study on the implementation of a decision making tools (Road Asset Management System) for better planning of intervention in the road sector and allocation of resources</li> <li><input type="checkbox"/> Study on the increasing of public expenditure efficiency and modernizing of the management of the road sector through the introduction of performance-based contracts in the road sector</li> </ul> <p><i>Except as otherwise provided below, consultants' services shall be procured under contracts awarded on the basis of Quality and Cost-based Selection. The following methods, other than Quality and Cost-based Selection, may be used for procurement of consultants' services for those contracts which are specified in the Procurement Plan: (a) Quality-based Selection; (b) Selection under a Fixed Budget; (c) Least Cost Selection; (d) Selection based on Consultants' Qualifications; (e) Single-source Selection of consulting firms; (f) Procedures set forth in paragraphs 5.2 and 5.3 of the Consultant Guidelines for the Selection of Individual Consultants; and (g) Single-source procedures for the Selection of Individual Consultants.</i></p>
<b>(iv) Training/ Capacity Building</b>	<ul style="list-style-type: none"> <li><input type="checkbox"/> building the capacity of Government staff and the private sector (contracting industry) on modern asset management and performance-based contracts.</li> </ul>

37. The procurement of works, goods, IT systems and non-consulting services (if any) will be carried out using the Bank's Standard Bidding Documents (SBD) for all ICB and National SBD agreed with and satisfactory to the Bank for NCB. To ensure broad consistency with the

Procurement Guidelines, the following provisions would be applied when using NCB under the Project:

- (i) The eligibility of bidders shall be as defined under Section I of the Procurement Guidelines; accordingly, no bidder or potential bidder shall be declared ineligible for reasons other than those provided in Section I of the Procurement Guidelines.
- (ii) No foreign bidder shall be required to submit a bid in association with domestic firms as a condition for bidding.
- (iii) The bidding documents shall clearly set out the bid evaluation process, the award criteria and the bidders' qualification criteria.
- (iv) Bidding opportunities shall be advertised with not less than thirty (30) days for bid preparation.
- (v) Technical and financial bids are always publicly and simultaneously opened, and such public bid opening shall take place immediately or closely after the deadline for submission of bids. No evaluation of bids shall take place at the bid public opening session.
- (vi) Prior to issuing the first call for bids, a draft standard bidding document to be used under NCB must be submitted to, and found acceptable by the Bank.
- (vii) The procedures shall include publication of evaluation results and of the details of the contract awarded.
- (viii) Bids shall be evaluated based on price and on other criteria disclosed in the bidding documents and quantified in monetary terms, and no domestic preference or any other kind of preferential treatment for national companies or for goods of national origin shall be applied. The verification of the compliance of bids to the technical requirements set forth in the bidding documents shall not be limited to the technical offer of the bidder which has offered the lowest price;
- (ix) The contract shall be awarded to the qualified bidder having submitted the lowest evaluated responsive bid, and no negotiation shall take place.
- (x) Each bidding document and contract shall include provisions stating the World Bank's policy to sanction firms or individuals which have engaged in fraud and corruption as set forth in the Procurement Guidelines as well as the Bank's right to inspection and audit.

38. For consulting services, short lists of consultants for services estimated to cost less than US\$ 300,000 equivalent per contract may be composed entirely of national consultants in accordance with the provisions of paragraph 2.5 of the Consultant Guidelines.

### C. Environmental and Social (including safeguards)

39. **Environmental safeguards:** The project has identified three stretches of road which are to be widened and rehabilitated; however, the exact alignments of RN4 have not yet been defined keeping in mind, maximum vehicular speed and security. The roads pass through diverse stretches of terrain and one of them (RN4) touches the fringes surrounding forested land. It also passes through stretches of rocky terrain and ravines, over which bridge expansions are being considered. Natural habitats are not affected by the project and consequently OP 4.04 has not been triggered. Conversely, a small section of forest, located in the area of RN4 which will be twinned in the vicinity of Djebel Mansour, will be affected by the project. As a result, World Bank OP 4.36 (Forests) is triggered and the ESIA will describe in detail the area of intervention, the areas of forest to be affected, and all procedures associated with the permanent or partial use of forested areas. The impacts of this road widening project are, as of now, manageable and have well-defined mitigating measures, and therefore this project has been classified as Category B, as per World Bank OP 4.01. These include issues related to (i) soil erosion, slope stability, stormwater management and sediment control; (ii) quarry management; (iii) vegetation and tree management (iv) drainage, water flows and bridge construction; (v) chance finds; (vi) construction related issues such as site waste, debris, stormwater and wastewater runoffs fugitive dust, noise, spills and other emissions; (vii) safe and convenient passage and movement for vehicles, pedestrians and livestock and property accesses connecting the project roads; and (viii) occupational health and safety issues of road construction workers and labor and safety aspects of pedestrians and surrounding communities.

40. The DGPC has undertaken ESIA's of the three identified roads and Environmental and Social Management Plans (ESMPs) for RN133 and RN12 have been prepared, discussed with key stakeholders during consultations and disclosed. The ESMPs will be incorporated in designs and bidding documents of contractors and implementation documents and will be supervised to ensure due diligence measures are being strictly followed. An ESMF for RN4 has been prepared and was also subject to consultations with stakeholders and disclosed. It is expected that the final alignment for RN4 will be finalized a few months after project approval, after which detailed site-specific ESIA (including an ESMP) will be prepared. The ESIA will be sent to the Bank for clearance, and will be consulted and disclosed before start of the bidding process.

41. In addition to the mitigation measures, the ESMPs include institutional arrangements for supervision, reporting and monitoring and training and coordination requirements among the multiple stakeholders. Screening tools for chance finds procedures will be described in the ESMP to safeguard any cultural resources that may be discovered. The Borrower has included social issues (e.g., compensation for loss of trees on private land, waste disposal nearby private lands, displacement and reconstruction of public infrastructure etc.) in the ESMPs. A functioning GRM has been put in place for ongoing feedback from PAP.

42. The DGPC has had experience working with other IFIs, including the AfDB and the EIB, but has not worked with the World Bank in the last decades and is not sufficiently knowledgeable about World Bank safeguards policies. There is no environmental specialist within the Borrower's team, but the environmental consultant preparing the ESMPs is well versed in World Bank Operational Policies. The Bank also provided guidance and training prior to appraisal, but there is need to improve the coordination between the Environmental consultant and the road

design team for a clear understanding of the environmental impacts of each type of landscape and ecological zone (plains, farmland, mountain areas and forests) associated with each road section. The DGPC will hire full-time environmental experts to support the project team during implementation and supervision to ensure ongoing compliance with ESMPs and provide oversight and coordination to ensure that the ESIA findings and mitigation measures are incorporated into design documents. Budgetary provision has been included in the ESMPs for technical training of the Borrower's project team at both national level and local levels in environmental aspects of road design, implementation, monitoring, reporting and ongoing maintenance. The Bank will undertake an independent environmental audit after construction phase to assess compliance with ESMPs.

**43. Social safeguards:** This project will support the widening and improvement of several key road sections identified as important to improve national connectivity. The complete extent of land acquisition, including involuntary land use, and potential physical resettlement is not yet fully known as final engineering design of specific roads has not been fully defined. However, as with many projects that support mainly road widening and improvement, it is possible through careful planning and consultation that involuntary land use (and especially physical relocation) can be minimized. In addition, agreement on the compensation of losses at replacement cost and provision of timely compensation (and land purchase), prior to commencement of construction, can greatly reduce the risk of a delayed construction schedule due to disagreements on land value and timely payment. While the Borrower expressed willingness to follow the World Bank safeguard policy, the lack of social expertise among the Borrower's team has delayed proposing a process to achieve the outcomes intended by OP 4.12 compliance. Although the Borrower has budgeted for such social expertise, they have not yet retained such qualified assistance. The Ministry's recent experience of working with other IFIs, especially the EIB, also has provided some experience but this still needs to be further enhanced. Appropriate capacity building and targeted training will be important and the project should plan accordingly (see Section V, Key Risks and Mitigation Measures). Formal capacity building activities will be included before effectiveness and during implementation. Consultations, with the targeted population including wide range of stakeholders from civil society, together with a well implemented social census and survey with impacted households, have been conducted and relevant input has been built into the project. A GRM has been developed to appropriately deal with any concerns from civil society in a timely fashion. In addition, close supervision of safeguard implementation will help ensure a well-managed project. A RAP has been prepared for each of RN12 and RR133 and a RPF for RN4 as the exact design and alignment is unknown, have all been disclosed prior to Appraisal. A RAP will be prepared for RN4 as soon as the exact alignment and design are known, and will be disclosed prior to construction.

44. World Bank site visits RN4, RN12 and RR133 identified the largest social impact will be related to land acquisition and will mostly include: (i) relocation of squatters from state and private land to alternative sites, (ii) acquisition of a narrow strips of farmland along the road, and (iii) demolition of small structures and kiosks along the road. An existing working group under the Presidency of Government was mandated in December 2014 to help coordinate between ministries in order to ensure proper procedures and compensation for land acquisition.

## **Monitoring and Evaluation**



45. The DGPC will be responsible for monitoring of implementation progress of the Tunisia Road Transport Corridors Project. DGPC staff will directly supervise the physical progress of contracted works which will be overseen by the engineers of the regional directorates.

46. As per standard practice for externally-funded projects, the staff of the PIU will prepare regular monitoring reports showing the progress of all project activities. These reports will be communicated quarterly to the World Bank, and may be useful in reporting project progress to other government agencies and/or IFIs as required. Audit reports will be produced annually as required by the World Bank standard loan conditions. A mid-term review shall be furnished to the Bank on or about September 30, 2017, or such later date as the Bank shall request.

47. In addition to the regular, semiannual IS missions, World Bank and DGPC staff will work together to ensure joint results monitoring. The cost of the PIU is entirely paid by the DGPC budget and is not funded by the proceeds of the loan or grant.

48. Monitoring of the results of the MENA MDTF grant which finances Sub-component 2.2 will be included as part of the monitoring responsibilities of the project.

**Annex 4: Implementation Support Plan**  
**TUNISIA: TN-Road Transport Corridors (P146502)**

**Strategy and Approach for Implementation Support**

1. The strategy for IS has been developed based on the nature of the project and its risk profile. It aims at making IS to the client more flexible and efficient, and will focus on implementation of the risk mitigation measures defined in Section V, Key Risks and Mitigation Measures.
2. **Procurement:** Implementation support will include: (a) Providing sufficient training to members of the PIU who are involved in procurement; (b) Reviewing procurement documents and providing timely feedback to the PIU; (c) Providing detailed guidance on Bank Procurement Guidelines to the PIU; and (d) Monitoring procurement progress against the detailed Procurement Plan.
3. **Financial management.** Given the identified FM risks, the project IS strategy will include the following: (i) bi-annual on-site supervision missions to monitor project FM risk and to ensure continue adequacy of agreed FM arrangements, (ii) desk review of IFRs; (iii) desk review of the auditors' reports and follow-up of any issues raised by auditors in the management letter, as appropriate; (iv) update of the project FM performance and risk through the ISRs.
4. **Environmental and Social Safeguards.** A workshop will be organized on supervision of social and environmental safeguards soon after effectiveness. The Bank team will closely supervise the implementation of the agreed-upon Environmental and Social Management Plans, RAPs for RN12, RR 133 and RN4 (once the latter is approved and disclosed), as well as any future ESMPs or RAPs developed in accordance with the provisions of the ESMF as well as the RPF established for RN4. The Action Plan for dealing with legacy issues related to incomplete land acquisition between 2000 and 2005 will be monitored separately. Through that monitoring, the Bank will also provide guidance to the PIU to address any issues. The PIU has appointed one environmental and one social focal point for the project to act as single point of contact for environmental issues and for social safeguards, including GRM, issues.
5. **Other Issues.** Sector-level risks, such as proper coordination, will be addressed through dialogue with the Government and PIU.

**Implementation Support Plan**

6. Most of the Bank team members are based in the headquarters office in Washington, DC and in the country offices in the region (Rabat, Tunis) to ensure timely, efficient, and effective IS to the client. Formal supervision and field visits will be carried out semiannually.
7. Detailed inputs from the Bank team are outlined below:
  - (a) **Technical inputs.** Road engineering inputs are required to review the progress of work on improving the three targeted road segments. Technical supervision is

required to ensure technical contractual obligations are met. The Bank’s road engineer will conduct site visits on a semi-annual basis throughout project implementation.

(b) **Fiduciary requirements and inputs.** Training will be provided by the Bank’s FM Specialist and the Procurement Specialist before the commencement of project implementation. The team will also help the DGPC/PIU identify capacity building needs to strengthen its FM capacity and to improve procurement management efficiency. Both the FM and the Procurement Specialist are based in Tunis to provide timely support. Formal supervision of FM will be carried out semiannually, while procurement supervision will be carried out on a timely basis as required by the client.

(c) **Safeguards.** The PIU lacks familiarity with World Bank safeguards. Training is required on environment and social safeguards-related monitoring and reporting. Field visits are required on a semi-annual basis. Inputs from an Environment Specialist and a Social Specialist will be provided, along with support from consultants based in Tunis. The World Bank team will retain the option of procuring additional consulting services to reinforce PIU safeguards capacity if required during implementation.

(d) **Operation.** The Task Team Leader (TTL) will provide day-to-day supervision of all operational aspects, as well as coordination with the client and among IBRD team members.

8. The main focus of IS is summarized below.

<i>Time</i>	<i>Focus</i>	<i>Skills Needed</i>	<i>Resource Estimate (US\$)</i>	<i>Partner Role (DGPC)</i>
September 2015	Project launch	TTL, Procurement, FM, Social and Environmental Safeguards	25,000	
Quarterly	Safeguards site visits	Safeguards Specialists/Consultants	8,000	Responsible for safeguards
Semi-annual	Implementation support mission	TTL, Procurement, FM, Social Safeguards, Environmental Safeguards, Engineering Expert	35,000 per mission	Receive and accompany mission
December 2017	Mid-term review mission	TTL, Procurement, FM, Social Safeguards, Environmental Safeguards, Engineering Expert, Transport Economist,	50,000	Receive mission, provide input to mid-term review

		Mid-term reviewer		
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*Skills Mix Required*

<i>Skills Needed</i>	<i>Number of Staff Weeks</i>	<i>Number of Trips</i>	<i>Comments</i>
Task Team Leader	8	4	Based in Morocco
Co-Task Team Leader	6	2	Based in HQ
Highway Engineer	4	2	Based in Europe
Environmental Safeguards Specialist	6	2	Based in HQ
Social Safeguards Specialist	6	2	Based in HQ
Procurement Specialist	4	2	Based in Tunis
Financial Management Specialist	4	2	Based in Tunis
Road Asset Management Specialist	4	2	Based in Europe

**Annex 5: Economic Analysis**  
**TUNISIA: TN-Road Transport Corridors (P146502)**

**INTRODUCTION**

1. The structural network of Tunisia accounts for 19,440 km of main roads, of which 77 percent, meaning about 15,000 km are paved.

2. The network is classified into national roads, regional roads and local roads. Paving of roads, as well as widening to a standard width of 7m minimum is taking place in the framework policy for progressive improvement of the network, defined and implemented since over 20 years. From the paved roads, 53 percent are with surface dressing, compared to 47 percent with asphalt concrete, but also in this field, a systematic strengthening policy aims to replace progressively the sections with surface dressing with asphalt concrete, starting from the roads within the highest category. Above the structural network (or "classified network"), Tunisia has a very important network of rural roads or "tracks", about 50,000 km, from which 15,000 km are paved. These tracks are not part of the structural network, but are still part of the network administrated and maintained by the DGPC, under MEHLP.

3. As part of the progressive improvement policy, Tunisia develops and implements five-year plans, describing the priorities in terms of development, improvement but also strengthening of the network of structural roads and tracks. Currently, DGPC is completing the 12th plan, and will start soon development of the 13th plan.

4. The proposed project will cover part of the remaining sections of the structural network, included into the 12th plan, but which have not yet been addressed.

These include:

- widening to 4 lanes of the RN12, from km 5 - 50, integrating the main interchange at km 0 in Sousse, but also the last sections of the Kairouan by-pass.
- widening to 4 lanes of the RR 133, from km 0 - 22, including the strengthening of the Zaghouan bypass.
- widening of the RN4 to 4 lanes, from km 0 - 65.

5. Economic evaluation and the cost-benefit analysis covers the three roads of the project. Each sub-project has been analyzed by evaluating the flow of benefit for the users and the economies in terms of maintenance (when compared to the scenario without works) and deducting the initial investment costs. The results of the evaluations are summarized below:

*Table 3 - Summarized results of the economic evaluation*

Decrease in User Costs (TND million)	Road 1: RN12	253.7
	Road 2: RR133	80.9
	Road3: RN4	151.5
	Total	517.3
Increase in Agency Costs (TND million)	Road 1: RN12	65.35
	Road 2: RR133	17.22

	Road 3: RN4	108.4
	Total	208.2
Net Benefits (TND million)	Road 1: RN12	188.4
	Road 2: RR133	63.6
	Road 3: RN4	42.9
	<b>Total</b>	<b>294.9</b>
IRR (%)	Road 1: RN12	42.4%
	Road 2: RR133	52.2%
	Road 3: RN4	15.2%
	Total	29.5%

## METHODOLOGY OF ECONOMIC EVALUATION

### Introduction

6. Economic evaluation of the projects measures their costs and benefits for the Tunisian State and the society, to assess if the net benefits generated are at least as high as benefits that could have been obtained with other investments.

7. The economic evaluation of the projects has been done here using the HDM-4 model. The evaluation has been modeled over a 20 years period starting with the base year 2014. In the model, it has been assumed that works would start in 2016 for an opening in 2018, where the RN4 would be implemented with 6 month delay. Depending on the progress on the loan agreement discussions, those dates may need adjustments. The analysis period enables to integrate a first maintenance cycle after initial construction works, and to compare evolution of road and transport conditions for the scenarios with and without project.

8. The discount rate was fixed at 10 percent, which remains are relatively high rate. As a result, costs and benefits above the 10th year of analysis do not affect significantly the economic results. The duration of analysis enables to demonstrate the pertinence of technical solutions and to compare the maintenance and future investment needs, in the case with or without project.

### INPUT DATA

9. The economic analysis was mainly based on:
- the three Preliminary Designs for RN12, RR133, and RN4
  - the traffic count data received additionally from DGPC's Directorate of Road Use and Maintenance (*Direction de l'Exploitation et de l'Entretien Routier* - DEER) based on the national census of 2012
  - the vehicle fleet for Tunisia prepared by the local Consultant
  - maintenance costs ratios proposed by DGPC and in particular DEER

### The project roads

10. For the economic study, the three roads have been sub-divided into sub-sections, mainly based on the level of traffic and current transverse profile - already at four lanes or to be

widened. The visual condition was estimated from the surveys carried out as part of the preliminary design and the site visits.

11. The project thus not only includes widening, but aims at creation of itineraries with homogenous service levels, with different improvements according to the current condition. Overall, the three roads are described with 10 homogenous sections with different characteristics, including one new section to be constructed.

*Table 4–Project Sections*

Road	Section	Length (km)	Actual Profile	Works
RN12	Sousse Interchange	1	At-level Junction with traffic light	Creation of interchange
	PK 5-50	45	2 lanes	2*2 lanes
	By-pass Kairouan South	6.8	2 lanes	2*2 lanes
	By-pass Kairouan North	4.2	Not existing	New section
RR 133	Urban Sections	3.4	2*2 lanes	Strengthening
	Main Section	18.6	2 lanes	2*2 lanes
	By-pass Zaghouan	2.5	2 lanes	Strengthening
RN4	PK 0-1.5	1.5	2*2 lanes	Strengthening
	PK 1.5 - 63.7	62.2	2 lanes	2*2 lanes
	PK 63.7-65	1.3	2*2 lanes	Strengthening
<b>TOTAL</b>				146.5

## Vehicle Fleet

12. To be in coherence with the counts from MEHLP and those of the preliminary design, the following vehicle fleet has been adopted, with six types of vehicles. The absence of medium and heavy trucks is surprising, and those also don't appear in the statistics and the classification of MEHLP. The following table presents costs and main characteristics of each vehicle. All costs are in TND.

*Table 5 - Vehicle Fleet*

	Car	Van	Small Truck	2-axle Truck	Articulated Truck	Bus
<b><u>Economic Unit costs</u></b>						
New vehicle price (TND/veh)	27000	33000	70000	115000	192000	144000
New tire price (TND/tire)	153	190	375	450	850	800
Cost of fuel (TND/l)	0.9	0.6	0.6	0.6	0.6	0.6
Cost of lubricant (TND/l)	7.3	7.3	7.3	7.3	7.3	7.3
Cost of maintenance (TND/h)	15	15	15	15	17	17
Crew Cost (TND/h)	0	7	7	6.7	8	9.5
Overheads (TND)	0	800	800	1300	2000	2000
Interest Rate (%)	10	10	10	10	10	10
Working time cost (TND/h)	6.4	6.4	0	0	0	2.2

Cargo time cost (TND/h)	0	0.05	0.2	0.3	0.5	0
<b>Usage and Loads</b>						
Annual kilometer driven (km)	23000	40000	45000	70000	86000	75000
Annual hours driven (h)	600	1200	1300	1500	2350	1750
Service life (years)	10	8	10	10	12	10
Percentage in private use (%)	100	0	0	0	0	0
Number of Passengers	2	1	0	0	0	30
Work-related Trips (%)	75	40	0	0	0	75
Operating Load (t)	1.2	1.5	2	7.5	28	6
ESAL factor	0	0.01	0.1	1.25	4.63	0.7

Source: Local Consultant and estimates

13. The following table shows typical vehicle operating costs, in TND/km for a road in good condition on flat terrain:

Table 6 - Share of operating costs (TND/km) for a road in good condition

	Car	Van	Small Truck	2-axle Truck	Articulated Truck	Bus
Fuel and lubricant	0.108	0.081	0.101	0.142	0.401	0.135
Tires	0.009	0.009	0.029	0.027	0.145	0.050
Maintenance and spare parts	0.093	0.115	0.238	0.427	0.822	0.287
Capital	0.119	0.099	0.160	0.181	0.193	0.205
Crew & overheads	0.000	0.074	0.086	0.089	0.102	0.122
Cost of time	0.103	0.041	0.011	0.012	0.017	0.619
<b>Total</b>	<b>0.432</b>	<b>0.419</b>	<b>0.624</b>	<b>0.878</b>	<b>1.680</b>	<b>1.419</b>

14. The following table presents the sensibility of vehicle operation costs to the road quality in terms of roughness (IRI<sup>16</sup>):

Table 7 - Evolution of vehicle operating costs (TND/km) with the quality of the road surface

(IRI)	Car	Van	Small Truck	2-axle Truck	Articulated Truck	Bus	Average
2.0	0.43	0.42	0.62	0.88	1.68	1.42	0.91
3.0	0.43	0.42	0.63	0.89	1.70	1.43	0.92
4.0	0.44	0.43	0.66	0.94	1.79	1.49	0.96
5.0	0.45	0.45	0.70	0.99	1.88	1.55	1.00
6.0	0.47	0.47	0.73	1.04	1.96	1.64	1.05
7.0	0.48	0.49	0.77	1.09	2.03	1.73	1.10
8.0	0.50	0.52	0.81	1.14	2.11	1.85	1.16

15. The Tunisian vehicle fleet is characterized by a very high vehicle purchase price when related to the average salary, as well as the fuel price. The fuel price, on the other side, is very low, as illegal sale of fuel from Libya is the reason to keep fuel excise taxes low.

## Value of time

<sup>16</sup> International Roughness Index. An analytical measure of the roughness of a road's surface and thereby of its maintenance state.



### *User time costs*

16. The value of time is a key element for the evaluation of benefits associated to the improvement and widening, but always difficult to define. The value of working time is linked to the mean hourly wages. For this analysis, the value of time has been estimated based on an average salary of 500 TND/month, meaning an hourly salary of TND 2.7. This base salary has been adjusted by a coefficient taking into account the differences of revenue between car owners and users of public transports. The non-working time was estimated at 25 percent of the value of working time. The values proposed are the following:

- car user - working time 6.4 TND/h
- car user - non working time 1.9 TND/h
- bus user - working time 2.2 TND/h
- bus user - non working time 0.6 TND/h

17. These values of time may seem high, but the value of time is in constant progression in the world, and countries as different as Brazil, Kazakhstan or Romania have adopted values of respectively US\$ 8.3 , US\$4.1 or US\$ 11.16, meaning value all far above the proposed values for Tunisia.

### **Cargo value**

18. The cargo value by vehicle-hour depends of the load, and for this reason, this value is often excluded from the analysis. In practice, the value by ton of the cargo depends of the size of the truck, and values between 0.01 and 1 TND/h can be set as usual values. On the roads included in the project, the main cargo are agricultural goods of lower added value, therefore, rather low values have been proposed.

*Table 8- hourly cargo costs*

<b>Vehicle</b>	<b>Cargo Cost per hour (TND/h)</b>
Van	0.05
Small truck	0.2
2-axle truck	0.3
3-axle truck	0.5

### **Traffic volumes**

19. Traffic data has been compiled from the manual traffic counts part of the preliminary design and the national traffic census from 2012 carried out by MEHLP/DEER. The data are categorized according to the vehicle categories used by MEHLP in those five-yearly counts.

*Table 9 - AADT by section in 2013*

		<b>Car</b>	<b>Van</b>	<b>Small Truck</b>	<b>2-axle Truck</b>	<b>Articulated Truck</b>	<b>Bus</b>	<b>Total</b>
RN12	Sousse I/C	16617	6659	929	379	553	335	25473

	PK 5-17	7131	2120	350	203	430	67	10301
	PK 17-50	9674	2046	633	692	805	123	13972
	Kairouan Center	3559	4174	459	28	390	124	8735
	Kairouan South	1546	1748	263	47	155	17	3776
	Kairouan North*	3049	3575	393	24	335	106	7483
RR133	Urban Section	5059	2230	510	806	1390	228	10223
	PK 0-22	4839	2922	793	761	741	215	10273
	Zaghouan	5650	2161	930	583	913	123	10360
RN4	PK 0-7.5	3071	2908	248	205	350	84	6865
	PK 7.5 - 63.7	2603	2402	139	139	185	113	5582
	PK 63.7-65	4532	4344	281	310	348	119	9936

Source: APS, Jan-April 2014

\* North by-pass of Kairouan to be built, traffic data estimated for 2016.

20. All roads include sections with high traffic, as well as sections with comparatively lower traffic, that would not necessarily be justified for an improvement with the present condition, but which have to be improved as part of the itinerary to provide homogenous service level.

### Traffic growth

21. The preliminary design presents traffic growth projections, based on the estimated growth of GDP and population.

Table 10–Traffic growth for light / heavy vehicles by project and period

Period↓	Road→	Vehicles	RN12	RN4 (%)	RR133 (%)
2007-2012		Average Historical Growth	6.35	5.62	3.15
2013-2016		Cars and Vans	4.0	4.0	5.5
		Trucks and Bus	4.8	4.8	5
2016-2026		Cars and Vans	4.6	4.6	5
		Trucks and Bus	5.5	5.5	4.5
2026-2036		Cars and Vans	4.1	4.1	4.5
		Trucks and Bus	5	5	4

Source: APS- Jan-April 2014

The general projected traffic growth seems high, but is consistent with the average growth rates measured on the sections between 2007 and 2012, despite the economic and political crisis. During the period 2007-2012, the growth rate was very variable between sections, with growth rates registered between 0 percent on some rural sections and 29 percent near the city centers. Only for RR133, the average growth was lower than the projections. The local consultants estimated however that the traffic would most likely grow fast with the ongoing economic development, with particular emphasis on RR133. Their estimates, generally confirmed by the historical data, have been used for the analysis.

## Accident costs and ratios

22. Accident data has been provided by MEHLP DEER from the national statistics over the period 2008-2012. The accident ratio are extremely high, are shown in the following table, for all three road sections.

Table 11– Accidents on the Project Sections for the period 2008-2012

Type of accident	RN12	RN4	RR133
Fatal Accident	64	27	24
Injury Accident	384	155	37

The average accident costs for Tunisia are given in the following table:

Table 12– Accident Unit Costs

Type of accident	Average Unit Cost (TND)
Fatal Accident	70,000
Injury Accident	14,000
Damage Only Accident	5,000

## Project Investment and maintenance costs

23. The project costs used for the evaluation is the financial cost of the whole project, by sections, as established in the cost estimates of the preliminary designs.

Table 13 – Project Costs (estimate "APS")

Road	Length (km)	Financial Cost (Millions TND)
<b>RN4</b>		<b>180</b>
Section 1: PK0-7.5	7.5	17
Section 2: PK 7.5-63.7	56.2	158.8
Section 3: PK 63.7-65	1.3	4.2
<b>RN12</b>		<b>121</b>
Sousse I/C	-	11
By-pass Kairouan (North)	4.2	12
By-pass Kairouan (South)	6.8	11
Main Section	45	105
<b>RR133</b>		<b>50</b>
Main Section	22	46.9
By-pass Zaghouan	2.5	3.1
<b>TOTAL</b>		<b>351</b>

Source: APS and updates, DAO

24. The average maintenance costs are used for the maintenance scenarios, in the case "without project", but also for the maintenance after the improvements for the "with-project" case. The average unit costs per works types are rather low compared to other countries.

*Table 14 – average unit costs for maintenance*

Works item	Unit	Economic Cost (TND)	Financial Cost (TND)
Improvement / Width Calibration	km	480,000	600,000
Strengthening	km	240,000	300,000
Overlay Asphalt concrete	t	100	120
Mill and Replace 5 cm	m <sup>2</sup>	6.4	8
SBST	m <sup>2</sup>	4.8	6
DBST	m <sup>2</sup>	6.4	8
Pothole Patching	m <sup>2</sup>	13	16
Crack Sealing	m <sup>2</sup>	2	2.5
Routine Maintenance*	km	2,400	3,000

Source: DGPC, for routine maintenance, costs vary according to road class

## RESULTS OF THE ECONOMIC ANALYSIS

25. Knowing that the sections and proposed works are varying greatly between sections, the IRR are equally variable on the individual project sections. In all cases, the pavement surface will be renewed and the surface quality, in terms of roughness brought to a new level of about 2, compared to the deteriorated level of 4 - 5 currently observed. Vehicle operating costs are reduced by up to 30 percent of their value before works. On semi-urban sections, in particularly at the exit of Sousse, currently under congestion with very high traffic, the works enable to reduce and/or eliminate congestion.

26. The NPV of all investments, on the 150 km of roads is about TND 295 million on the basis of the evaluation of all three project roads (see below). The IRR of all investments is 29.5 percent.

*Table 15 - Results of the economic analysis*

Road	Section	NPV (TND million)	IRR (%)
RN12	Sousse - Kairouan	188.4	42.4%
RR133	RN3 - Zaghouan	63.6	52.2%
RN4	El Fahs - Siliana	42.9	15.3%
Total		294.9	29.5%

27. The RR133 presents the highest IRR as this section is the most homogenous in terms of traffic and works required. The RN12, which currently carries the highest traffic has significantly higher construction costs per km, from which the high cost of the interchange in Sousse. This project also includes two sections of the Kairouan by-pass, where traffic is more modest. The RN4 presents the lowest results. Overall traffic is lower, over a long section of 50 km, whilst construction costs are relatively high due to the remote location of the project, a far distance

away from material production centers. All the sections benefit from important reduction in accident costs due to safety improvement with the dual carriageways.

The results detailed by the project roads are given below:

*Table 16 - Economic Results by Road Section*

Road	Length (km)	Difference in Investment (TND million)	Benefits of VOC (TND million)	Benefits of Time (TND million)	Benefits of Accident Reduction (TND million)	Total NPV (TND million)	NPV/C	IRR
RN12	56	77.5	180.71	66.54	42.22	212.0	2.245	41.1
RR133	24.5	26.3	57.6	28.57	2.54	62.5	1.886	43.6
RN4	65	108.6	87.3	48.2	15.8	42.9	0.35	15.2

## Sensitivity Studies

28. Sensitivity studies have been carried out with the following variations:

- Construction costs, +/- 20 percent
- Total Traffic in AADT<sup>17</sup>, +/- 20 percent

Some tests have also been done on traffic growth, but this factor had no significant influence on the results. The sensitivity test results are given in the following table:

*Table 17 –Project Sensitivity*

Road	Sensitivity scenario	IRR (%)	NPV / C	Difference in Investment (TND million)	Total Benefits (TND million)	Total NPV (TND million)
RN12	Cost – 20%	51.6	2.4	52.3	253.7	201.4
	Cost + 20%	35.9	2.13	78.4	253.7	175.3
	AADT – 20%	30.9	1.25	65.3	170.4	105.1
	AADT + 20%	60.5	4.0	65.5	398.9	333.4
RR133	Cost – 20%	61.8	2.79	13.78	80.87	67.085
	Cost + 20%	45.2	2.50	20.66	80.87	60.20
	AADT – 20%	40.1	1.66	17.04	56.73	39.69
	AADT + 20%	63.2	3.72	17.46	107.78	90.324
RN4	Cost – 20%	19.4	0.53	86.7	151.4	64.6
	Cost + 20%	12.2	0.17	130.2	151.4	21.2
	AADT – 20%	10.1	0.01	108.5	108.8	0.5
	AADT + 20%	20.7	0.75	108.5	201.4	92.8

## CONCLUSION

<sup>17</sup> Annual Average Daily Traffic. Calculated as the total traffic on a given road over a full year, divided by 365 days.

29. The result of the economic analysis shows that all roads of the project present a positive economic return on investment, with however important differences due to the variety of situations encountered in terms of traffic, present condition and proposed works. Each itinerary studied and the overall project are validated economically.

30. Most sections present very high rates of return as the vehicle operating costs are important in particular for the heavy goods vehicles. Important benefits are also generated by accident reduction. These sections compensate the investments with lower benefits, that have been integrated to provide continuity of service level along the road, this is in particular the case for Kairouan by-pass.

31. The analysis is deemed conservative, as no generated traffic has been taken into accounts. The sensitivity shows that the analysis is not very sensitive on the input data, even for the most important input: the level of traffic and construction costs. Results remain satisfactory in deteriorated conditions. The most important factor remains the traffic volume at the opening, which is predominant compared to axle loads of traffic growth. It is also reminded that RN12 and RN133 have been modeled with a start of works beginning 2016, for an opening end of 2018, and that only RN4 is scheduled for a start of work mid-2016 for an opening mid-2018.

## Annex 6: Map TUNISIA: Road Transport Corridors Project

