



PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Full-sized Project

THE GEF TRUST FUND

Submission Date: January 2008

Re-submission Date: July 15, 2008

PART I: PROJECT IDENTIFICATION

GEFSEC PROJECT ID¹: 3669

GEF AGENCY PROJECT ID:

COUNTRY(IES): Tunisia

PROJECT TITLE: Land and Water Optimization Project

GEF AGENCY(IES): World Bank

OTHER EXECUTING PARTNER(S): Ministry of Agriculture and Water Resources (MARH), National Sewerage and Sanitation Agency (ONAS), General Directorate of Rural Engineering (DGGRE) and General Directorate of Environment and Quality of Life (DGEQV)

GEF FOCAL AREA (S): International Waters, Land Degradation, Strategic Priority for Adaptation (SPA)

GEF-4 STRATEGIC PROGRAM(S): IW S1, S2; LD SO 1, 2; SPA

NAME OF PARENT PROGRAM/UMBRELLA PROJECT: WB-GEF Investment Fund for the Mediterranean Sea Large Marine Ecosystem Partnership

INDICATIVE CALENDAR	
Milestones	Expected Dates
Work Program (for FSP)	June 2008
CEO Endorsement/Approval	January 2009
GEF Agency Approval	March 2009
Implementation Start	July 2009
Mid-term Review (if planned)	July 2011
Implementation Completion	Dec. 2013

A. PROJECT FRAMEWORK (Expand table as necessary)

Project Objective: To progress towards the greater objectives of SAP-MED to reduce land-based sources of pollution discharging in the Mediterranean Sea; to optimize the use of Tunisia's water resources and contribute to the reduction of land degradation and climate vulnerability of key productive sectors in arid agricultural lands.								
Project Components	Indicate whether Investment, TA, or STA**	Expected Outcomes	Expected Outputs	Indicative GEF Financing*		Indicative Co-financing*		Total (\$m)
				(\$m)	%	(\$)	%	
Component 1 – Study of wastewater reuse	STA	(i) Wastewater reuse options and specifications identified for investments (ii) Framework and conditions for more efficient reuse of treated wastewater in agriculture included in national strategy (iii) Contribution to meeting key SAP-MED pollution reduction targets for land-based sources of marine pollution reduction (iv) Adaptation and mitigation options identified based on existing information on implications of climate change on water resources for agriculture.	(i) Technical, economical and environmental feasibility studies on water reuse investments (3 scenarios), including estimation of investing and operating costs for each scenario. Scenario 1. Transport to the sea Scenario 2. Transfer to agriculture areas Scenario 3. Complementary treatment and groundwater recharge (ii) Redefinition of pollution abatement benefits in terms of national, regional and global aspects based on SAP-MED (iii) EIA and EMP of preferred option (iv) Recommendations on institutional arrangements for sustainable management of reuse scheme and services (v) Report summarizing areas and crops vulnerable to climate impacts and	1.33	9%	13	91%	14.33

¹ Project ID number will be assigned initially by GEFSEC.

			adaptation options for effective use of water resources, as well as mitigation options.					
Component 2 – Soil and Water Conservation, Sustainable Management and Use	Investment and TA	(i) Larger volume of treated waste water utilized countrywide (In accordance with the recommendations of component 1). (ii) Farmers have better capacity and awareness and adopt new techniques for SLM/NRM and for coping with the effects of climate change (iii) Soil erosion and water runoff are reduced and soil fertility is restored [areas to be specified during preparation] (iv) Higher value added per unit of water used in irrigation . (v) Agriculture productivity is improved (vi) Carbon sequestration is increased	% increase in volume of treated wastewater used countrywide (ii) Training and awareness campaigns on SLM/NRM , including adaptation and mitigation options,conducted (ii) Better and more frequent use of drought resistant species/plants/crops (ii) % of LCDPs (local development plans) incorporate drought and flood projections (iii) Share of target agricultural systems applying anti-erosion techniques, bunds, terraces, mini check dams, agro-forestry plantations, hill-ponds, water recharge works, and reforestation/re-vegetation of barren and eroded sites implemented (%) (iv) Improved irrigation techniques implemented in x% of targeted farms (v) % increase in carbon sequestered	7.0	10%	60.0	90%	67.0
Component 3 – Communication and outreach	Investment and TA	(i) Increased willingness and acceptability among the producers and consumers of using treated wastewater for agricultural purposes (ii) Communities understand and are trained in the use of SLM/NRM tools	(i) Community development guidelines on SLM and sage wastewater reuse published and disseminated (ii) Sensitization workshops targeted to decision makers (iii) Communication campaign on project achievements	1.4	87%	0.2	13%	1.6
4. Project management				0.97	27%	2.5	73%	3.47
Total project costs				10.7		75.7		86.4

* List the \$ by project components. The percentage is the share of GEF and Co-financing respectively to the total amount for the component.

** TA = Technical Assistance; STA = Scientific & technical analysis.

B. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT (\$)

	Project Preparation*	Project	Agency Fee	Total
GEF	0	9,726,000	972,600	10,698,600
Co-financing	0	75,700,000	0.0	75,700,000
Total	0	85,426,000	972,600	86,398,600

* Please include the previously approved PDFs and planned request for new PPG, if any. Indicate the amount already approved as footnote here and if the GEF funding is from GEF-3.

C. INDICATIVE CO-FINANCING FOR THE PROJECT (including project preparation amount) **BY SOURCE and BY NAME** (in parenthesis) if available, (\$)

Sources of Co-financing	Type of Co-financing	Amount
Project Government Contribution	Cash/in kind	20,700,000
GEF Agency(ies)	Cash/in kind	50,000,000
Bilateral Aid Agency(ies)	(select)	
Multilateral Agency(ies)	(select)	
Private Sector	(select)	
NGO	(select)	
Others	In-kind	5,000,000
Total co-financing		75,700,000

D. GEF RESOURCES REQUESTED BY FOCAL AREA(S), AGENCY (IES) SHARE AND COUNTRY(IES)*

GEF Agency	Focal Area	Country Name/ Global	(in \$)			
			Project Preparation	Project	Agency Fee	Total
World Bank	International Waters	Tunisia	0	4,545,000	454,500	4,999,500
World Bank	Land Degradation	Tunisia	0	4,545,000	454,500	4,999,500
World Bank	SPA*	Tunisia	0	636,000	63,600	699,600
(select)	(select)					
(select)	(select)					
(select)	(select)					
Total GEF Resources			0	9,726,000	972,600	10,698,600

* No need to provide information for this table if it is a single focal area, single country and single GEF Agency project.

* Strategic Priority for Adaptation

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

Key development and environmental challenges

Tunisia suffers from three inter-related problems posing serious challenges to the agricultural, water and environment sectors: (i) water scarcity; (ii) land degradation, both aggravated by climate change risk; and (iii) pollution of marine water resources in the Mediterranean Sea. While water scarcity in Tunisia will worsen, according to projections, with population growth and climate change, climate variability already poses a substantial risk to rural livelihoods given the direct effect of weather-related shocks on productive lands. An integrated approach is the recommended way forward for the sustainable management and optimization of Tunisia's water and land resources. This might include (a) improving the value of water used in agriculture through transforming the incentive systems for water conservation (e.g. demand and supply water management, through drip irrigation), (b) water capture (dams and storage reservoirs, dam management (ie maintaining spillways etc) made more effective through reduction of erosion and further intensification of forestation, (c) protecting groundwater resources, (d) using adaptation measures for climate risk in farming systems, and (e) introducing innovative means to increase new sources of water (such as the reuse of treated effluent or desalinated water) and (f) improving water quality. The proposed project will evaluate and test several of these alternatives with the end goal of improving water resources availability, reducing pollution loads in the Mediterranean Sea and the Gulf of Tunis in particular, and increasing the sustainability of agricultural practices and livelihoods in the context of climate change. Field investments will be piloted in a number of target areas to assess the viability of the proposed integrated approach.

The above challenges can be summarized as follows:

(i) Tunisia has highly variable quantities of renewable water at the national level for current levels of population and economic activity. Per-capita renewable water resources were 490 m³/year in 2001, which is defined as extreme scarcity. To make matters worse, Tunisia is one of the few countries in the world where the models concur that there will be significant reduction in available water resources under a changed climate. Projections include 10 to 20% less rainfall; 40% reduction in run off and

severe water stress for human and ecological systems. A driver of this is a projected 4C temperature increase by the end of the century with a 1C increase already observed since the 1960s. As one of the most water-scarce countries in the world, Tunisia is particularly vulnerable to the effects of climate risk. Agriculture utilizes 80% of the country's water resources and employs almost a quarter of the workforce. With 90% percent of arable lands located in arid and semi-arid zones, the predicted and highly negative impacts of climate change on water resources would have devastating ecological and economic consequences.

(ii) Land degradation already puts important stress on agricultural productivity which deepens rural poverty. Drought and poor vegetation cover, most particularly in the central and southern parts, combined with population pressure, unsustainable land use practices, land shortage, and encroachment are the main causes of land degradation. Losses from erosion are estimated at 13,000–23,000 ha, and salinization at 1,000 ha of topsoil/year. Soil degradation and erosion are widely spread causing the silting of dams, floods, and damage to infrastructure. The depletion of the natural base and resulting land degradation is exacerbated by the vulnerability induced by weather-related shocks (e.g. droughts), and perpetuates rural poverty. Some of the poorest farm households are susceptible to crop failure as most households have limited ex-ante strategies to reduce climate related vulnerabilities. In light of climate change, there is an urgent need to improve access to sustainable land management (SLM) practices that protect against soil and land degradation, while providing means to cope with water scarcity and climate change.

(iii) In parallel, pollution of marine water resources in the Mediterranean Sea due to inadequate levels of wastewater treatment, especially in the Gulf of Tunis, poses major economic and environmental challenges (e.g. for resources of biological importance such as the Ramsar site of Sebket Sejoumi, near Tunis) with important transboundary effects. The Tunisian coast has been identified as a pollution “hot spot” for priority investments under the SAP for the Mediterranean basin (SAP MED), the Strategic Action Program of the Mediterranean Action Plan (MAP) under the Mediterranean Sea Large Marine Ecosystem Strategic Partnership, a joint initiative of the countries of the Mediterranean Sea basin to address shared environmental problems that are transboundary in nature. As such, particular attention is required for the diversion of treated effluent from the Gulf of Tunis and other sites on the Mediterranean Sea to more productive uses, including reuse in agriculture, groundwater recharge and natural resource management.

Reuse of treated wastewater as a viable option to reduce Mediterranean pollution, increase water supplies, and protect natural resources

Tunis’ wastewater treatment plants currently produce about 200 million m³/year –one of the highest volumes in the Southern Mediterranean region, most of which is discharged into the sensitive Gulf of Tunis and Mediterranean Sea. The potential volume of treated water in agriculture is estimated to reach about 75 million m³/year in 2011 (about 15,000 ha) escalating to 147 million m³/year in 2020 (while the demand for water reuse in non-irrigation sectors is only 6% of production for the period 2006-2011). Yet despite government tariff incentives and some successful past experiences with reuse, currently only 24% of the treated effluent is reused for agriculture, mainly in the irrigation of arboricultural crops (7,500 ha in 2004) and recreational facilities. Institutional and financial models capable of analyzing and allocating the risks and benefits of the reuse schemes to different stakeholders have not yet been developed. In addition, a number of technical, economical, social and institutional factors currently constrain wastewater reuse, including:

- Risk of bacteriological contamination, increased salinity and crop exposure to concentrations of heavy metals and other toxins.
- Ministry of Agriculture and Water Resources (MARH) restrictions on irrigation with treated wastewater to: industrial crops (cotton, tobacco, etc), cereals, fodder, fruit trees, forest trees and floral plants.
- Irrigation in peri-urban areas is principally devoted to the production of vegetables eaten raw, which cannot be irrigated with treated effluent due to the MARH crop restrictions.
- The reluctance of farmers to reuse treated wastewater.
- Large and costly treatment and storage infrastructures are needed, especially in the Greater Tunis which concentrates the bulk of the country's effluent. (Over the past decade, inadequate maintenance of treatment plants has jeopardized their efficiency resulting in the deteriorated quality of discharged wastewater on the coast and the beaches of the Tunis Gulf.)

Despite these constraints, the transfer and use of treated wastewater in agriculture, notably in Tunisia’s arid zones, has gained momentum in recent years. While diverting the discharge of treated effluents from sensitive environments to more productive uses such as irrigation, it has potential to reduce ground and surface water scarcity, and recharge coastal aquifers. In addition, wastewater reuse could have other important economic and environmental benefits such as the preservation of wetlands; the alleviation of drought-related impacts; and the reduction of the quantity of fertilizers used in agriculture.

Based on the above, the project’s three components are:

Component 1 – Study of wastewater reuse

A feasibility study was initiated in 2006 by the Directorate for Environment and Quality of Life (DGEQV) of the Ministry of Environment and Sustainable Development (MESD) in coordination with the National Sewerage and Sanitation Agency (ONAS),

the General Directorate of Rural Engineering (DGGR) and MARH to evaluate the technical, economic and social aspects of three potential scenarios for effluent reuse in Tunisia, as follows:

Scenario 1. Transport to the sea through outfalls

Scenario 2. Transfer to agriculture areas

Scenario 3. Complementary treatment and groundwater recharge

This component will complete the above feasibility study to prepare strategic water reuse investments. The outcome will be the assessment of the advantages, impacts, investments, and operation costs of each of the three reuse scenarios, and a recommendation on the preferred option given the Tunisian context, as well as the required steps for the timely implementation of a well-optimized national reuse scheme. Eventually, the project will pilot strategic field investments as part of Component 2 as a “test” for scenario 2 in order to demonstrate the economic, technical, social and environmental viability of the use of treated wastewater in productive sectors in arid areas.

A brief outline of the three scenarios is given below.

Scenario 1. Transport to the sea: This scenario will occur when treated water is not reused for agriculture (wet years). Baseline data will be collected on the existing physical milieu in order to define the technical design of infrastructure with a view to protect the highly pollution-vulnerable water of the Gulf of Tunis from effluent discharge.

Scenario 2. Transfer to agriculture areas: This assessment will provide a detailed analysis of the existing constraints to water reuse, and identify (i) potential zones that would be most favorable to water reuse (initially 60-80 km from Greater Tunis); (ii) the nature of reuse; and (iii) the related social, economic, and environmental impacts, based on the location and reuse needs. The outcome will be the identification of the most appropriate crops given the local conditions as well as the monitoring and control activities, training needs, and/or tariff incentives that would be required to encourage reuse. Recommendations will also be made for the treatment and transport works based on factors such as nutrients level, effluent maturation, and health risk, and on coordination with ONAS with regards to ensuring adequate quantity and quality of effluents that are entering and exiting the wastewater treatment plants and water quality for reuse. In addition, in consultation with the MARH’s Dam Directorate, options for inter-seasonal (dam) and/or underground storage (recharge) would be identified with a view to minimize the need to reject water in the receiving inland zones. Finally, short term small-scale reuse actions that would be piloted during the project under Component 2 will be assessed. It is envisaged that the governorate of Jendouba could be identified as one of the first receiving zone.

Scenario 3. Complementary treatment and groundwater recharge: This scenario will look at possible improvement of wastewater treatment processes and regulation—including necessary environmental legislation and supporting institutions in order to implement and enforce the laws related to de-pollution activities—to achieve better quality of treated water discharged to the Gulf; reused in irrigated lands, or used to recharge aquifers. It will focus on soil characteristics and existing groundwater use, excluding any zone where groundwater is used for drinking purpose or where salinity is lower than the treated water.

This component will also include an Environment Impact Assessment (EIA) and Environmental Management Plan (EMP) of the recommended option.

Component 2 – Soil and Water Conservation, Sustainable Management and Use

This project will complement the proposed operation cofinanced by the World Bank, Community Based Integrated Rural Development (CBIRD) Project. It intends to demonstrate the actual feasibility on the ground of scenario 2 above through demonstration activities. These investments will demonstrate how the careful use of treated wastewater for irrigation can contribute to water conservation and decrease the adverse effect of soil erosion and climate change on agricultural productivity, while reducing the risk of pollution in the Mediterranean Sea. Enhanced inter sector coordination and integration and a full scale community driven development (CDD) approach that will recognize community specificities, knowledge and rights will be key aspects.

This component will build on the outcomes of the first Natural Resource Management (NRM) Project (1997-2004). The proposed CBIRD Project is expected, with GEF support, to reduce the adverse effect of soil erosion and climate change on agricultural productivity and, subsequently, to contribute to rural poverty reduction. It intends to demonstrate the actual feasibility on the ground of scenario 2 above through demonstration activities. These investments will demonstrate how the careful use of treated wastewater for irrigation can contribute to water conservation and decrease the adverse effect of soil erosion and climate change on agricultural productivity, while reducing the risk of pollution in the Mediterranean Sea. The project will support (i) NRM investments with environmental impact; and (ii) demonstration activities that will decrease the country’s vulnerability to natural disasters. Enhanced inter sector coordination and integration and a full scale community driven development (CDD) approach that will recognize community specificities, knowledge and rights would be key aspects. The project would maximize productive natural resources and, by focusing on preventative rather than reactive strategies, would provide the most cost-effective way to

minimize the negative impacts of climate change on the government's development and poverty alleviation agenda. To this effect, small scale adaptive measures will be introduced to reduce the risk to agriculture and NRM from climate change, such as the promotion of farming practices and systems that increase agricultural productivity: choice of climate-appropriate crops; introduction of mixed indigenous crop varieties; site selection; integration of drought and flood projections in local development plans (LCDPs); development of local warning systems and drought preparedness tools and market information systems.

Given the current limited experience in climate change planning, this component will also provide capacity building for adaptation, including awareness raising, learning activities, and institutional and skill building among national and local stakeholders to adapt to the adverse impacts of climate change, and explore carbon sequestration opportunities as part of a mitigation strategy. In particular, efforts will be made towards integrating drought and flood projections in local development plans (LCDPs). Such skill building is expected to further reduce communities' vulnerability to weather related shocks, and improve appropriate decision-making at the CRDA level, through a better understanding of the opportunities to anticipate and cope with the consequences of climate risk.

Component 3 – Communication and outreach

Best practices for community-based control and prevention of land degradation will be documented and disseminated at the national level through awareness and sensitization activities in the view to be replicated in other parts of the country. These activities would include, but not be limited to, the development and publication of sectoral community development guidelines on sustainable natural resources management and the organization of cross-fertilization training workshops targeting decision makers at the national and local levels and including all stakeholders. In addition, the project will integrate capacity building and sensitization of farmers in the application and monitoring of treated effluent reuse in irrigation and groundwater recharge in an effort to optimize agricultural production and minimize public health and environmental risks.

This component will seek leveraging additional financing for the up-scaling of the full implementation of component I and the up-scaling of the proposed activities under component 2. Lessons learned from the pilot activities will be shared with potential donors.

The DGEQV in collaboration with ONAS, will be in charge of implementing this component.

The project is expected to generate global environment benefits such as increased vegetation cover of degraded watersheds, increased land productivity, preservation of ecological integrity and functions in agricultural landscapes, conservation of biological diversity, enhanced capacity to undertake adaptation actions, reduction of carbon dioxide emissions and improvement in carbon sequestration, by restoring and sustaining soil fertility in targeted areas, and improving water use efficiency in farming systems. Direct local benefits will include increasing net productivity of targeted agricultural systems, and improving the resilience of farmers to extreme climatic events.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL PRIORITIES/PLANS:

The project will play a vital role in assisting the Tunisian government achieve its development objectives by progressing towards preventing further coastal and land deterioration, determining the conditions for more efficient water reuse for agriculture, and investing in parallel and/or incremental communication activities that will enhance productive activities and increase resilience of investments to extreme climate events.

At the national level, the project is consistent with the government's 11th Plan 2007-2011. The centrality of the agricultural sector to the Plan makes the land degradation's dimension of the project a very critical aspect of long-term success of the 11th Plan that identifies economic growth and agriculture as priorities. The Project also specifically contributes towards meeting some of the main objectives of the sanitation component of the Plan, i.e. the relief of pressure on existing treatment capacity and improvement of the quality of treatment; enhancement of coastal protection; and expansion of the reuse of treated wastewater in irrigation. Given the country's overall stage of development, the importance of tourism for its economy and the requirements of environmental protection, the treatment of all collected water is a major objective of the government. The project will specifically support the government's 2002 National Wastewater Reuse Policy that recommends: (i) the development of additional treatment, less restrictive reuse of treated wastewater in the agricultural sector, increase of reuse options including groundwater recharging, inter-seasonal storage, ecological reuse and inter-regional transfer; (ii) the monitoring of the quality of aquifers, and increase of health control and respect of hygienic specifications; (iii) the coordination between the various water actors, the need to work through an integrated water resource management (IWRM) approach to maximize the value of wastewater reuse; and (iv) the involvement of the private sector in reuse activities, and promotion of wider awareness to overcome reluctance to reuse treated wastewater. In addition, the project is in line with the Sanitation Strategy that promotes the prevention of the pollution of waterways and sea resorts and the augmentation of usable water resources for irrigation.

Regarding natural resources, the Tunisian government has made significant national commitments towards the sustainability of its natural resources and is party to key international conventions including land degradation and desertification (UNCCD), climate

change (UNFCCC), wetlands (Ramsar) and biodiversity (CBD). This project supports Tunisia's national objectives for the agriculture and NRM sectors, fitting (a) the Rural Development Strategy's main principles of protection of natural resources; improvement of the quality of life in the least advantaged areas; and development of agriculture; (b) the Irrigation Policy that delegates management and financing to communities (Collective Interest Groupings-GICs) –the MARH has declared its intention to encourage all *Commissariats régionaux de développement agricole (CRDAs)* at the governorate level to practice the CBIRD approach; (c) the Tunisia's National Action Program (NAP) which is the core strategic framework for implementing the UNCCD; and (d) the Initial National Communication (INC) and Second National Communication (SNC) that reflect the country's rising concerns in respect to climate change.

In the context of the regional MAP, Tunisia has prepared a National Action Plan (NAP) in which it identified point pollution sources and coastal areas which may affect human health, ecosystems, biodiversity, sustainability, or economy, and necessary actions to address pollution from land-based sources under SAP MED which this project will help implement.

Initial discussions with Tunisian officials (notably the visit of the GEF CEO in Tunisia in November 2006) have highlighted the government's strong support to a GEF-World Bank multisector program that would address key rural development sectors (water, environment, agriculture) and GEF-4 (and UN Conventions) strategic priorities in the international waters, land degradation, and climate change focal areas. Subsequent discussions with the GEF Focal Point, the MARH, and ONAS in April 2007 have outlined the main objectives of the project. Finally, the Minister of Development and International Cooperation has transmitted an official request for this project to the Bank on July 30, 2007.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH [GEF STRATEGIES](#) AND STRATEGIC PROGRAMS:

GEF-4 is focusing attention on refined focal area strategies and integrated cross-cutting themes with the overall aim to move beyond single-project interventions towards a more programmatic approach that focuses GEF funding on clearly defined priorities which achieve greater impact and visibility. This project creates strong linkages between the following GEF focal areas and the Special Climate Change Fund (SCCF):

Land Degradation: The project is aligned with the Land Degradation focal area by specifically contributing to LD (1) Strategic Objective 1 that supports the enabling environment to improved SLM, through mainstreaming SLM within agricultural sector policy and practice at national and local level; and (2) Strategic Objective 2 that aims at up scaling SLM investments on the ground through the implementation of NRM/irrigation pilots to generate both global environment benefits as well as increase the income and strengthen the livelihoods of Tunisia agricultural producers and communities.

This project will be the first in a series of projects identified by the MNA Region at the Bank for inclusion in the proposed GEF / MENARID program, jointly implemented by the World Bank and IFAD. The development objective of the project is aligned with MENARID's objective which is twofold: to promote integrated SLM (ISLM) in the drylands of the MENA region while improving the economic and social well-being of the targeted communities through the restoration and maintenance of ecosystem functions and productivity. The project, following MENARID's approach, will work towards further mainstreaming ISLM, improving the governance of natural and water resources (ground water and trans-boundary water systems), and coordinating investments that will: (i) promote enabling environments to mainstream the ISLM agenda at national and regional scales, and (ii) generate mutual benefits for the global environment and local livelihoods through catalyzing ISLM investments for large-scale impact.

Climate Change: The project is consistent with the SPA that aims to assist developing countries in addressing the adverse impacts of climate change by supporting projects that build adaptive capacity. It will combine technical assistance to local and national stakeholders and institutional capacity building. This will allow stakeholders to assess vulnerability and identify and implement concrete, suitable adaptation actions, in order to increase the ecosystem resilience to the adverse impacts of climate change, the three key goals of the SPA.. Specifically, it will target improved water resources management and assist in building adaptive capacity in an effort to reduce the vulnerability to climate risks. Through the Bank financed blended operations, the project will also support planning and preparedness and management of disasters, including planning for droughts and floods.

International Waters: Finally the project adheres to the GEF-4 International Waters focal area strategy that supports projects related to coastal and marine fisheries (Strategic Program 1) and nutrient over-enrichment from land-based pollution (Strategic Program 2) by identifying wastewater reuse investments, necessary policy changes and multi-agency partnerships affecting pollution reduction and coastal fisheries (providing additional linkage with the Biodiversity focal area).

The project will be submitted to the World Bank-GEF Mediterranean Investment Fund of the Mediterranean Sea Large Marine Ecosystem Partnership for partial co-financing. The GEF Strategic Partnership for the Mediterranean Sea Large Marine Ecosystem brings together the World Bank, UNEP and a variety of agencies and donors active in the Mediterranean

region, including FAO, UNESCO, WWF, UNIDO, Mediterranean Environmental Technical Assistance Program (METAP)², GWP, Horizon 2020, and the EU. The project will benefit from coordination and consultation with Partners and countries through the same coordination mechanism set up for the Partnership under the UNEP Regional component. The Investment Fund supports domestic and industrial wastewater treatment; wetland restoration and/or construction; improved management of watershed and aquifers for habitat conservation and pollution reduction; and protection of endangered natural habitats and sensitive areas. The project will assist the government of Tunisia towards meeting several pollution reduction targets agreed under the Strategic Action Program to Address Pollution from Land-Based Activities (SAP MED), that are aiming at reducing land-based sources of marine pollution of the hot spots along the Tunisian Mediterranean coast. The specific contribution of the project to meeting these targets will be established during the preparation process.

D. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

The proposed project will be blended with two Bank financed operations in Tunisia: the Community-Based Integrated Rural Development (CBIRD - P086660), and the Second Water Sector Investment (PISEAU II - P095847). The GEF intervention will specifically complement the CBIRD project in order to (1) maximize the global environmental benefits of the NRM investments that are proposed, and (2) incorporate adaptation to climate change risk measures.

In terms of linkage with water sector investments, the project will directly contribute to achieving the PISEAU II objectives concerning: (i) the integrated approach for water resource management; and (ii) the conservation of water resources and protection of the environment. This will be achieved through Components 1 and 2 technical assistance and investments, and to its IWRM sub-objective of increasing the capacity of water sector actors, including rural communities, through Component 3's training activities. PISEAU II is not yet designed, but total project cost is estimated at US\$ 250 million, and will fund irrigation intensification, groundwater management, rural water supply and environmental protection. The project will be co-financed by the AFD, the ADB, KfW and the GEF.

Finally, the project will ensure synergies with other initiatives and key national and international players involved in NRM, environment, and climate change. For climate change, GTZ has established a framework plan with the Tunisian government which specifies "Adaptation to Climate Change" as the main area of intervention, and UNDP is supporting the Tunisia Adaptation Policy Framework for Climate Change (APF). Linkage with the UNDP-supported National Capacity Self Assessment (NCSA) launched in March 2004 and which identified the institutional constraints for adaptation to climate change in Tunisia will be promoted at the design stage. It will also be critical for the project to build on the results of the project on adaptation in the coastal zones recently submitted to the GEF by UNDP. In the land degradation sector, the project will establish operational linkages with the new IFAD-led GEF Strategic Partnership on Sustainable Dryland Management in the MENA Region (MENARID).

E. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :

Baseline Scenario: First, under the baseline scenario, efforts to address to Tunisia's need for increased volumes of water and improved water and land services for household and agricultural purposes would continue to be small, fragmented, and uncoordinated, leading to only localized impacts. Notably, local stakeholders including poor communities would continue to focus largely on agricultural productivity and poverty reduction, with very little attention to the ecological aspect of land degradation. Furthermore, given the current limited experience in climate change planning, the MARH and the CRDAs would be inclined to support LCDPs responding to community priorities and paying less attention to the rising climate risks. During the first NRM project, the country experienced a long drought (1998 to 2002) that caused considerable damage to the project's agricultural and pastoral production activities. Without GEF involvement, climate variability would continue to limit the scope for sustainable benefits from this project. Second, without the catalytic effect of the GEF financing, investments for pollution reduction would have less transboundary impact, and the government may give only marginal attention to the implementation of the SAP

GEF Alternative: The added-value of the proposed GEF's involvement is to build on the above "business-as-usual scenario" by helping to catalyze a paradigm shift to approaches that complement the economic and social dimensions of land degradation with the ecological aspects and the water resource scarcity problems, particularly the global environmental benefits, in a coordinated way. Through an integrated and holistic approach, it will provide a strong mechanism for more operational linkages across the concerned ministries and their decentralized representation. This long-term approach will strengthen the government, donors and

² The METAP program was established in 1990 and initially designed to identify fundable actions to halt environmental deterioration. In time, the focus shifted to defining sustainable development indicators for the region, to assessing the impact of policies, programs and projects on the state of the environment, and to reinforcing the technical capabilities and resources of both public and private entities. METAP's four operational phases have kept the spotlight on the regional dimension, building the capacity of national and local institutions, whilst fostering support between nations to limit transboundary environmental impacts, disseminate knowledge and nurture best practice. Today, METAP projects and activities focus on water quality, solid waste, cost of environmental degradation, trade and environment, banking and environment, environmental impact assessment and knowledge management. METAP covers projects in Tunisia.

stakeholders' (including farmers and civil society organizations) commitments to a common NRM, environmental, and water management agenda. The GEF resources will result in a number of important incremental outcomes. First, support to increase farmers' uptake of conservation farming technologies, such as soil and water conservation that will slow down water runoff, reducing water and wind erosion, flood and/or silting and salinization and increasing groundwater storage; sound pasture management; and protection of the habitat for fauna and flora will result in short-term productivity increases while at the same time building up the natural soil capital for long-term productivity. Second, the short-term productivity gains in the targeted areas, will in turn lead to a demonstration effect that will draw many farmers to engage in conservation farming. Third, the increased uptake of conservation farming technologies will form the basis for broader and more sustainable farmer-driven sustainable land management in Tunisia. Fourth, based on the lessons from the first NRM project (1997-2004), and given the challenges of increased climate variability for Tunisia, proactive consideration to climate change will be factored in the process. Under the GEF alternative, the risk from climate change will be reduced by introducing several adaptive measures such as the promotion of farming practices and systems that increase agricultural productivity. These actions will both address local adaptation needs and consolidate the global environmental benefits for biodiversity and ecosystem productivity. Finally, as part of the Mediterranean Investment Fund, the project will initiate pollution reduction and biodiversity conservation investments and in-country replication, thus accelerating the implementation by the country for transboundary pollution reduction and biodiversity conservation in the Tunis Gulf. Such outcomes are unlikely to be realized without the co-financing provided by GEF which provides catalyzing support in contributing to the proposed programmatic approach.

F. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MEASURES THAT WILL BE TAKEN:

Decentralization. Despite efforts to give more responsibility for O&M to the GICs, water management has been so far constrained by a top-down, centralized, and sub-sectoral approach, focusing on technical solutions and undermining opportunities for cost-efficient use in agriculture. The project will continue to use the CDD approach of the NRM I project which demonstrated that strengthening the capacity of CRDA staff to apply participatory approaches (that fully involve and empower communities through the preparation of LCDPs –an approach also applied by the ongoing GEF-co funded Protected Areas Management Project) yields positive results. CRDAs have demonstrated flexibility to integrate CDD and more multi-disciplinary approaches. The involvement of the MESD has also been especially successful in promoting environmental awareness among local communities. These results have prompted, according to the recent IEG Country Assistance Evaluation, both the government and donors to allocate more funds to NRM over the past years. However, the integration of sectors at the CRDA level still needs support.

Extreme climatic events: The project will finance measures to support sustainable land management in agricultural landscapes. There is a medium to high probability that many of these measures, including farmland under sustainable land management and associated infrastructure developed may suffer from more frequent extreme climatic events. Tunisia is already prone to cycles of drought, which are expected to become more frequent because of climate change. The project intends to include a number of activities that promotes farmers' adaptation to climate change.

Inter-agency collaboration. Coordination is weak between the regional offices of ONAS and the CRDAs that are responsible for water distribution to farmers. The project will promote greater collaboration between the ONAS regional offices and the CRDAs as part of project preparation, notably through local level workshops for jointly designing the components and activities of the project. In addition, the project's institutional building activities will attract the interest of the various agencies and provide incentives to collaborate during project implementation.

Minimization of public health risks. A preventive health program specifically targeted to farmers and water distributors will begin during preparation to mitigate the risk of infectious diseases that may be caught through the utilization of treated wastewater. This program will be implemented by the CRDAs with support from the Ministry of Public Health and will include exercises for hygiene control on treated wastewater and respect of regulations.

G. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

The project's programmatic and integrated approach of linking ongoing national activities and setting a longer term vision to ensure sustainability is in line with the GEF strategic priorities and Business Plan and provides an excellent opportunity for their implementation. A strategic approach is a more cost-effective vehicle to demonstrate benefits than a series of individual projects: the project will save substantial costs that would have been required to set up and run new activities involving international waters, climate change and natural resource management interventions. First, being submitted under the Strategic Mediterranean Partnership, the project will benefit from the catalyst role the partnership is intended to play in leveraging additional investments for reversing degradation and conserving coastal-marine ecosystems. Second, the choice of the proposed programmatic approach is a response to the need for integration between sectors for more efficient water management in Tunisia. By supporting on-going initiatives, there will be a reduction in transaction costs for the government, the Bank and GEF to implement activities as economies of scale will be harnessed and results and knowledge disseminated. Finally, the project will be implemented by a Project Implementation Team within ONAS and MARH (the two co-executing agencies for Component 1 and Component 2

respectively, with support from the DGEQV for capacity building activities). ONAS has relatively strong institutional and technical capacity, and long familiarity with the Bank's procedures and requirements. This team will be an integral program of these institutions which will save the costs for establishing an independent project implementation unit.

H. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

Successful interventions to prevent or control land degradation and enhance water resource require integrated and cross-sectoral approaches to sustainable land and water management. The Bank is in a unique position to catalyze the adoption of such approaches in Tunisia because of its strong policy dialogue with the government and development partners, its long-term engagement in water management with investments targeting policy, technical and governance aspects of agricultural water, its broader experience in ARD, NRM, and CDD, its access to country-level information, and new internal synergies within the new Sustainable Development Network (SDN). The project is consistent with the conclusions of the recent MNA flagship development report *Making the Most of Scarcity - Accountability for Better Water Management in the Middle East and North Africa* that stresses the importance of "beyond the sector" strategies to making best use of scarce water resources and expensive infrastructure investments. Reflecting on the Bank's comparative advantage for this kind of programmatic operation, the government has formally requested the Bank to be the lead donor agency for this project.

Also, as the lead agency for the Mediterranean Investment Fund, the Bank is in a unique position to promote the coordination of programming and implementation of pollution reduction investment in the Tunisian coast.

Finally, project interventions will be mainstreamed into the Bank's work in relevant sectors in Tunisia. The Bank's past involvement in rural development, transport, human resources development, and community participation in Tunisia has focused on strengthening policy formulation and management. The Agriculture Support Services project (2001-2007) piloted an approach to improve the institutional services provided to farmers, promote participation by producers, and facilitate information flow. The Bank is currently providing important financial and technical support to the MARH to promote agricultural development, and is supporting the preparation and implementation of water and land conservation projects, totaling about US\$200 million. Also, the Bank has supported the development of ONAS since its creation in 1974 and helped it implement six projects which have been largely satisfactory. In addition, the Bank's long-term support and partnership with ONAS goes beyond funding and involves technical and institutional assistance. The Bank has also global experience in assisting developing countries to protect critical ecological systems and adapt to climate change. Its involvement in the proposed project would help to focus attention and assistance not only on promoting sustainable land management to improve agricultural productivity, but also on helping farmers to adapt to extreme climatic events. The project will specifically benefit from strategic lessons drawn from previous projects implemented with ONAS, the MARH, and the MESD, specifically, recommendations from the study for the national water reuse policy, and lessons from the Greater Tunis Sewerage and Water Reuse Project and ongoing PISEAU II, the Tunis West Sewerage Project, and the first NRM project.

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

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):


(Please attach the [country endorsement letter\(s\)](#) or [regional endorsement letter\(s\)](#) with this template).

Mr. Najeh Dali General Director, Environment and Quality of Life Department, Ministry of Environment and Sustainable Development & GEF Focal Point	Date: July 30, 2007
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(Enter Name, Position, Ministry)	Date: (Month, day, year)
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B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.
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 Steve Gorman, GEF Executive Coordinator	Kanta Kumari Rigaud Project Contact Person
Date: <i>July 15, 2008</i>	Tel. and Email: 202-473-4269 kkumari@worldbank.org
<i>Name & Signature</i> GEF Agency Coordinator	Project Contact Person
Date: <i>(Month, Day, Year)</i>	Tel. and Email:

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