



# PROJECT IDENTIFICATION FORM (PIF)

**PROJECT TYPE: Full-sized Project**  
**THE GEF TRUST FUND**

**Submission Date:** 18 January 2008

**Re-submission Date:**

## PART I: PROJECT IDENTIFICATION

**GEFSEC PROJECT ID:** 2631

**GEF AGENCY PROJECT ID:**

**COUNTRY(IES):** Jordan

**PROJECT TITLE:** Mainstreaming Sustainable Land and Water Management Practices

**GEF AGENCY(IES):** IFAD

**OTHER EXECUTING PARTNER(S):** Ministry of Planning and International Cooperation (MOPIC), Ministry of Environment (MOE), Ministry of Agriculture (MOA), and Ministry of Water and Irrigation (MWI)

**GEF FOCAL AREA (S):** Land Degradation, International Waters

**GEF-4 STRATEGIC PROGRAM(S):** LD (SP1), IW(SP3)

**NAME OF PARENT PROGRAM/UMBRELLA PROJECT:** MENARID

INDICATIVE CALENDAR	
Milestones	Expected Dates
Work Program (for FSP)	April 2008
CEO Endorsement/Approval	July 2008
GEF Agency Approval	July 2008
Implementation Start	June 2009
Mid-term Review (if planned)	January 2012
Implementation Completion	May 2014

## **PROJECT FRAMEWORK** (Expand table as necessary)

**Project Objective:** To reduce land degradation and promote the integration of an ecosystem-based approach into public-supported productive and poverty reduction activities; the latter designed to improve economic productivity of land, increase water use and irrigation efficiency and support communities affected by land degradation and water scarcity, supporting SLM and IWRM best practices at the local level with contributing to SLM and IWRM mainstreaming at all levels.

Project Component	Invest, TA, or STA	Expected Outcomes	Expected Outputs	Indicative GEF Financing		Indicative Co-financing		Total (\$ '000)
				(\$ '000)	%	(\$ '000)	%	
1. Community and Agro-Ecosystem Planning	INV, TA	1. Sustainable land and water management integrated into community-based natural resource planning	a) 13 Community Action Plans (CAPs) for local community development formulated within 3 Project Demonstration Agro-Ecosystems (PDEs) b) 3 Agro-Ecosystem Action Plans (AEPs) formulated and under implementation in 3 PDEs (target areas) c) 3 AEPs supporting implementation of the National Water Strategy (NWS) and the NAPCCD through ecosystem-based planning approaches d) 15 Spring Water User Associations' (WUAs) established/strengthened for improved water management	707	25	2,116	75	2,823
2. Public Awareness and Capacity Building for Scaling up SLM	INV, TA	1. Institutional structures and capacities enhanced at national and local levels to promote awareness, coalition building and scaling-up of SLM and water management 2. integrated ecosystem mgmt approaches and climate-proofing of rural production systems improved	a) Design a strategy for public awareness, community mobilization and Environmental Education b) Disseminate information about SLM and water management practices in target areas c) Provide training to 15 WUAs (for improved IWRM practices (water harvesting, increased spring irrigation efficiency and water reuse for irrigation), d) Develop and finance the implementation of one Action Plan for building capacity of local, sub-national and national stakeholders	2,148	39	3,311	61	5,459

3. Best Practices for SLM Demonstration and Up-scaling Areas	INV	1. Land and water users in replicable PDEs adopt sustainable land and water management practices that provide long term livelihood benefits	a) At least 7000 land and water users adopt SLM and IWRM leading to up-scaling of good SLM practices and improved irrigation efficiency b) Increased area under INRM (9,000 ha of soil and water conservation and 5,000 ha of indigenous vegetation cover rehabilitated) c) 35 springs protected and irrigation area of 700 ha rehabilitated and under increased efficiency d) 2 model spring irrigation systems established e) 3,000 water harvesting cisterns (each with capacity of 30 m <sup>3</sup> ) for collection of rainwater and surface runoff into underground wells f) Alternative livelihood activities implemented in areas within PDEs where land use pressures and groundwater overexploitation hinder SLM adoption (70 projects, 400 land-users)	1,770	10	15,866	90	17,636
4. SLM Information Management at Project and National Levels	INV, TA	1. Effective information management to support decision making is developed and implemented from the project to the national levels	a) A National SLM and Env. Info System in place b) Develop and upscale a participatory M&E system	1,049	57	787	43	1,836
5.1. Support to Institutional and Financial Sustainability	INV, TA	1. Directorates of Agriculture, Water and environment. following up and adopting activities beyond the international funding phase 2. Financial resources available to undertake activities and build up a funding mechanism for sustainability purposes 3.	a. A strategy for institutional arrangements and financial support to the long-term implementation of key SLM and water mgmt activities developed, negotiated and tested in the 3 PDEs, with embedded scale-up plans b) Capacity of national actors among Directorates of Agriculture, Water and Environment and communities is strengthened to address and follow-up national issues that affect up-scaling of good practices and long-term sustainability of natural resource use.	220	80	55	20	275
5.2. Project Management				551	53	652	47	1,203
<b>Total costs</b>				6,445	22	22,787	78	29,232

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

	Project Preparation*	Project	Agency Fee	Total**
GEF	350,000	6,445,000	679,500	7,474,500
Co-financing	352,000	22,787,000		23,139,000
<b>Total</b>	702,000	29,232,000	679,500	30,613,500

\* US\$ 350,000 (PDF B) has been previously mobilized

\*\* Please note that the total includes USD 350,000 for a PDF-B that was already provided with its respective fees (US\$ 31 500 received)

**C. INDICATIVE CO-FINANCING FOR THE PROJECT, INCLUDING PDFB COFINANCING, BY SOURCE and BY NAME (\$)**

Sources of Co-financing	Type of Co-financing	Amount
Project Government Contribution	Grant	3,100,000
Project Government Contribution	In-kind(30,000PDF)	130,000
GEF Agency – IFAD (cont. PDF)	In-kind	245,000
GEF Agency - IFAD	Loan	14,769,000
FAO (25,000 PDF)	In-kind	60,000
Others (OPEC Fund)	Loan	4,000,000
Beneficiaries	In-kind	785,000
Others (GM – cont. to PDF)	Grant	50,000
<b>Total co-financing</b>		<b>23,139,000</b>

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

GEF Agency	Focal Area	Country	(in \$)			
			Project Preparation	Project	Agency Fee	Total
IFAD	Land Degradation	Jordan	350,000	5,000,000	535,000	5,885,000
IFAD	International Waters	Jordan		1,445,000	144,500	1,589,500
<b>Total GEF Resources</b>			350,000	6,445,000	679,500	7,474,500

**PART II: PROJECT JUSTIFICATION**

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

Jordan is one of the world's most water-deficit countries with only about 5% of the total land area considered arable. As a consequence it has few natural resources and agricultural productivity is greatly reduced. Therefore, a major challenge for the Government of Jordan (GOJ) is to promote the sustainable use of natural resources for agricultural purposes. This challenge is being made harder by the ongoing processes of degradation, which combine to undermine any social and economic development gains. About 41% (36,000 km<sup>2</sup>) of Jordan's total land area is characterized as degraded, of which 22 percent of the total land mass is classified as moderately degraded.

In general, the land degradation (LD) types that prevail in Jordan are water and wind erosion, the decline of soil fertility and habitat degradation. The main causative factors are overgrazing, unsustainable agricultural and water management practices and overexploitation of vegetative cover. In addition, Jordan's rapid population growth (2.8 percent per year) is exerting considerable pressure upon its lands. The prevailing poverty in the country's arid and semi-arid areas is also a significant factor contributing to the rate of LD. There is considerable evidence that poverty is forcing dryland farmers and herders, in particular, into unsustainable practices to produce more food and meet their material needs, often leading to degradation of their land resources.

Jordan is classified as a *chronically water scarce* country with an annual renewable fresh water supply of only 175 cubic meters per capita. With the increasing growth in population, demand for water has increased rapidly. Scarcity of water is a major constraint on growth and the demand for water already threatens serious depletion and sustainable use of groundwater, with over extraction reaching in some basins more than 200 % of their combined safe yields. Agriculture consumes more than 50% of the country's available water resources. The National Water Strategy (NWS) includes a comprehensive set of guidelines and approaches for supply and demand management, to balance the water deficit by applying new technologies, decreasing consumption and improving resource management. The implementation of this Strategy is a high Government priority.

*Prevailing LD Types in the Southern Highlands.* Specifically, in the Southern Highlands (proposed project area), one of Jordan's poorest regions, LD severity categories fall within the "moderate" to "severe" range, and the dominant features of LD are the high rates of erosion by wind and water; drastic reduction of soil fertility in general and of soil organic matter in particular; and loss of green habitat in terms of vegetation cover recession, low germination rate of plants and low intensity of plant cover. The project area is also affected by soil surface crust and substantial accumulation of calcareous silt on the soil surface that accelerates erosion by water and creates a soil compaction problem. In addition, there is much evidence that the over-exploitation of the water resources is resulting in water-related land degradation types.

*Natural systems in the Southern Highlands.* The highland ecosystems comprise of escarpments and mountains, hills and undulating plateaus with natural vegetation cover (Pinus, evergreen etc) and steppe, the latter consisting of a transition area where desert biota is gradually replaced by “Mediterranean” biota.

*Water Resources in the Southern Highlands.* The proposed project area is drained by three major wadis (Mujib, Karak, Hasa) discharging into the Dead Sea. These catchments are part of the East Dead Sea sub-basin of the Jordan River, which is characterized by water scarcity, variability and uncertainty. More specifically, the project area is located in the upstream of these watersheds, a crucial location for their water yields. The common features of these wadis include intermittent storm runoffs at their upper reach, and groundwater flow, from small springs, in their lower reach. There are a large number of springs located along the wadis (about 90), usually at the higher altitudes. The springs are usually owned and operated by small traditional farmers. Spring water is primarily used for irrigation of tree crops, although a few springs provide water for domestic use as well. Over 90% of the area receives less than 300 mm of rainfall annually, 65% less than 200 mm. This is reflected in poor structural stability of soils and the subsequent vulnerability to excessive erosion following shallow rainstorm events. Groundwater in Jordan occurs in 12 distinct basins, most comprised of several ground water aquifer systems. The project area is covered by four basins; namely: the Dead Sea (72%), the North Wadi Araba (16%), the Azrak (3%) and the Jafr (2%). Each basin covers part of the project area as well as other adjacent areas. These basins have a combined annual safe yield capacity of 93.5 million cubic meters, but are being utilized at rates exceeding their sustainable yields. For the Highlands, the NWS calls for increased sustainability of irrigated agriculture within the limit of available water resources. To this end, the strategy requires a gradual reduction of groundwater extraction for agriculture by about 57% from 198 million cubic meters in 2000 to 86 million cubic meters in 2020. The reduction would be achieved through the implementation of a wide range of measures, including: (i) purchasing and closing some of the agricultural wells by the Government; (ii) continuing the banning on licensing of new wells for agricultural use; (iii) closing down unlicensed wells and complying with the conditions of licensing; (iv) promoting water harvesting measures to partially replace groundwater use with rainwater, and reducing the rate of pumping; and (v) improving water management to increase the efficiency of irrigation; and (vi) promoting the reuse of water. The Government, through MWI, is implementing aforementioned measures (i) to (iii) with its own resources. Pilots to test the implementation of measures (iv) to (vi) are being supported through international financing (see baseline scenario below).

*Drivers and Pressures in the Southern Highlands.* Unsuitable land and water management, recurrent droughts and climate change are the main causes of LD in the project area. Several unsustainable land and water use practices are aggravating degradation. These include improper ploughing, the cultivation of rangeland with field crops, inadequate management of plant residues, overgrazing, vegetation cutting, land fragmentation and over-extraction of groundwater. In addition, the demand for water in the project area has increased substantially in recent years. The average annual abstraction from the three groundwater basins located in the project area currently stands at 180% of their combined safe yield, the use of groundwater for domestic, industrial and agricultural purposes in each basin. Agricultural wells are operated by better off large private farmers. Many of the springs are very small and some have dried up in recent years partly due to drought and partly due to over pumping of the aquifers. The springs are usually owned and operated by small traditional farmers. Moreover, scarcity of water associated with high poverty and population growth put more pressure on the natural resources to meet increased food and income demands. An increasing, albeit limited, trend is the growing area that is being put under permanent crops, which can be considered as a positive development in support of SLM. This shows how, at times, land users’ economic strategies may have a beneficial influence in terms of SLM adoption. There are, however, issues of household food security and investment capacity of the poorer smallholders that require attention. Those that are not able to diversify, due to lack of information on feasible sustainable land and water management practices, land size or inaccessibility to capital, may be left behind and by default be obliged to continue practicing unsustainable agricultural ventures. Hence, appropriate support to poorer smallholders would require mainstreaming access to knowledge on technologies and best practices as well as appropriate land and water management planning and economic incentives, which would enable them to invest in more sustainable land and water management practices. On the contrary, these are all lacking or are widely insufficient.

*Baseline Scenario.* In response to these issues, the GOJ has established a strong policy agenda which reflects national priorities that address the development-related dimension of land degradation and water resource issues, during the last ten years establishing a number of key strategies, national policies and a legislative framework, covering the themes of poverty reduction, environment, water/NWS, land degradation/NAPCCD, gender and agricultural development/NSAD, respectively. Currently, to complement the enabling policy environment, a Forest Policy and Strategy for Sector Development is being formulated by the GOJ with FAO assistance. Hence, the national policy, institutional and regulatory framework to control land degradation, water scarcity and to promote the inclusion of ecological principles to the management of natural resources is already in place. Moreover, the GOJ is supporting various important projects aimed primarily at promoting sustainable development and poverty alleviation. One of these key interventions is the IFAD-financed Agricultural Resource Management Project Phase II (ARMP-II), focused on increasing food security and income levels of 22,300 resource-poor rural households of the country’s Southern Highlands, through promoting community development, improving agricultural production and management of land and water resources, working to strengthen the capacity of local institutions, and providing rural micro-finance for on and off-farm

activities, mostly for women. The ARMP-II, implemented through a decentralized approach by the Ministry of Agriculture (MOA) in cooperation with the Ministry of Water and Irrigation (MWRI), covers an area of approximately 6,450 km<sup>2</sup> of the Southern Highlands. Administratively, it covers the Governorates of Karak and Tafila and three Districts of the Ma'an Governorate. In addition to the ARMP-II, the following initiatives are being implemented to specifically address water issues by piloting improved practices in the Highlands: the GTZ-financed Management of Water Resources in Irrigated Agriculture; the Community-Based Optimization of the Management of Scarce Water Resources in Agriculture in West Asia and North Africa Project; and the Greywater Reuse research programme funded by the International Development Research Centre (IDRC) of Canada for treatment of wastewater of rural households for supplementary irrigation of backyard orchards.

*Gaps and Barriers.* Despite these efforts, there are key barriers or constraints which hinder progress leading to the adoption of improved approaches that address the above mentioned LD and water issues and lead to the scaling up of SLM and improved water conservation and management and irrigation efficiency, while addressing rural poverty. These barriers can be grouped into three main categories: (i) *knowledge and technological*, including the lack of effective knowledge management, dissemination and networking among various stakeholder sectors and institutions and the absence of integrated land use planning approaches which also impedes the synergies that would be possible through the application of the UNCCD with other UN Conventions; (ii) *institutional and governance*, with lack of concrete experiences that integrate the sustainable management of resources and poverty alleviation efforts, hence leading to the application of the existing policy and legislative framework. Greater effort is required to fine-tune and provide effectiveness to the inter/intra-institutional coordination framework, within a fully integrated and multi-sectoral land use planning approach to sustainable land and water management; and (iii) *economic and financial barriers*, with insufficient and financial resources. On one hand, there is the lack of compensation mechanisms to cover costs in switching to the SLM practices, and on the other, incentives that allow for alternative livelihoods and exit strategies are also missing. Financing fiscal leverages may also raise the private sector's interest and solve the issue of the weakness of their activities in the field of combating LD and desertification.

*The project Approach.* Implementation of the proposed project would contribute to a system-wide change to remove these barriers to the scaling up of sustainable land and water management, hence addressing the direct drivers for the Southern Highlands ecosystems' degradation. Experience has shown that many successful technologies commonly associated with sustainable land and water management in arid/semi-arid lands are already well known and in some cases successfully adapted to local conditions in Jordan. These include best practices for land, surface- and ground-water use, as well as water reuse practices, with the latter under experimental phase. The rationale of the proposed project is to build on the existing knowledge base, using an IEM approach as an integrating framework to identify and scale-up relevant SLM technologies in response to specific local LD issues and characteristics. The proposed project would focus on mitigating the causes and effects of land degradation on the structure and functional integrity of key ecosystems of the country's Southern Highlands. It will achieve this goal through integrating an ecosystem-based approach into public-supported productive and poverty reduction activities supported under the ARMP-II; the latter designed to promote the quality of life of rural communities, consistent with the country's national priorities, including the NAP. Moreover, it would enhance integrated water resource management and application in the project area.

The proposed project would contribute to implement existing policies and complement ongoing baseline activities in the Southern Highlands, which are funded and implemented by the GOJ and various donors. In particular, it would add to the ongoing IFAD-supported ARMP-II project, by providing a more holistic ecosystem approach for pursuing adoption and up-scaling of sustainable land and water management practices at both the local, governorate and national levels. The view would be long-term, seeking to foster better stewardship of land resources and encourage the adoption of sustainable and beneficial resource management practices. Additional benefits would cascade from this project and contribute to biodiversity conservation through the enhancement of ecosystem functions, and carbon sequestration through the promotion of increased tree and vegetative cover through better ecosystem NPP.

*Project target area.* The project would be implemented through five components and would support planning and on-the-ground activities at two geographical levels: (i) a larger area at the sub-national level (three Governorates: Karak, Tafila, and Ma'an), termed the *broadier project area*, overlapping with ARMP-II/IFAD's project area in the country's Southern Highlands; and (ii) a smaller *agro-ecosystem defined area* (Project Demonstration Agro-Ecosystems - PDEs) located within the former area. In addition to these local and sub-national levels, the project would support key national level activities such as the development of the project monitoring and knowledge management and dissemination system (SLM & Env MIS) that would be designed for use at different administrative levels. In order to facilitate a bottom-up approach with significant stakeholder participation, while at the same time addressing LD and NWS concerns that are relevant and manageable at a smaller scale, the project would concentrate on-the-ground investments in three PDEs located within the broader project area. The total area covered by these PDEs would not exceed 160 km<sup>2</sup> or around 5,500 rural families or households, covering about 13 "local communities".

The project will cover the following components: (i) **Component 1: Community and Agro-Ecosystem Planning:** The project will assist the government to integrate SLM and irrigation efficiency principles into community-driven natural resources planning and to prioritize investments between agro-ecosystems and types of intervention. This would be achieved through the development and implementation of Community (CAP) and Agro-Ecosystem (AEP) Action Plans for sustainable land and water management in 3 PDEs. Component 1 will entail Local Community Development Planning, Agro-Ecosystem Planning and Management with AEPs formulated and implemented in 3 PDEs, building on around 13 CAPs (local community development planning) and including an embedded scale-up strategy to support replication throughout the PDE and from the PDE to the sub-national level. **Component 2: Public Awareness and Capacity Building for Scaling up SLM:** The project will support the enhancement of institutional structures and capacities at national and local levels to promote awareness, coalition building and scaling-up of sustainable land and water management for integrated ecosystem management and climate-proofing of rural production systems. It will also finance capacity building and TA to WUAs on NWS-supported practices and principles. Component 2 will contribute to Public Awareness and Environmental Education, building Capacity of Local Stakeholders through training and community efforts to enhance local capacities to develop and strengthen the skills abilities that local SLM implementers (farmers, irrigation water users, rural community members, etc.) would need to support integrated approaches to natural resources management. Component 2 will also support Capacity for Local, Sub-National and National Stakeholders through training to enable stakeholders in the planning and implementation and scaling-up of AEPs. It will target staff from Local (District), sub-national (Governorate) and national institutions with SLM and water/irrigation-related mandates. **Component 3: Best Practices for SLM in Demonstration and Up-scaling Areas:** is investment-oriented. It will support land- and water irrigation-users in replicable Project Demonstration Agro-Ecosystems (PDEs) to adopt SLM and improved water management practices wherever they provide the greatest long term livelihood benefits, a selection of best SLM and water management practices and technological options to be validated and up-scaled in the project area. Component 3 will support Productive Agricultural Investments: in terms of SLM practices, Off-farm Conservation Investments (e.g. off-farm intervention at the micro- or sub-catchment levels) implemented by the farming and rangeland community and other relevant agro-ecosystem managers. To offset poverty impacts on environmental degradation, this component will also provide ways for new and Alternative Livelihood for SLM (support on-farm and off-farm income-generating activities that improve the livelihood and quality of life of community households, while reducing the pressure on land use. These activities will be identified and approved by target communities in their CAPs and endorsed in the AEPs. **Component 4: Information Management:** This component would support the implementation of an effective information management (collection, validation, storage, analysis and dissemination) system to support decision making from the project to the national levels and to provide a means for monitoring changes in the resource base either as a result of natural processes (environmental monitoring) or due to human interventions (project monitoring and evaluation). **Component 5.1 Project Management and 5.2 Sustainability:** this component will deliver on project performance and cost-effective implementation of its activities. Inclusion of sustainability under project management is an innovative design feature that would support the development and implementation of a project institutional and financial sustainability strategy, including pilot financial mechanisms in the target area in order to reduce existing sustainability risks and support the implementation of selected activities for sustainable land and water management to continue beyond the life of the project.

The expected national/local and global benefits and impacts to be generated by the project would be strongly interlinked, particularly in the case of incremental activities that would promote the up-scaling of best SLM productive practices to address LD problems and improve land and water management. These activities would generate local/material benefits to rural communities, such as improved livelihoods and creation of income-generating activities. In areas where land use pressures or other ecological constraints hinder SLM adoption for productive purposes, complementary alternative non-NR based livelihood activities would be promoted, hence preventing additional LD. In this sense, the main impacts or benefits foreseen at the level of the global environment are:

- Arresting land degradation and conservation of biological diversity by adopting sustainable grazing and agricultural management practices; recovery and increased protection of the degraded arid and semi-arid Highlands in areas currently used for grazing; promoting the preservation of the ecosystem integrity and recovery of its functions and services and, simultaneously, improving livelihood opportunities; facilitating climate change adaptation;
- Increased storage of greenhouse gases in agro-ecosystems, which would primarily be achieved through the adoption of sustainable agricultural and rangeland/pasture management practices and the restoration and further protection of degraded vegetation in areas currently used for livestock production; this will be reflected in increased carbon sequestration potential and increase in ecosystems NPP.
- The country demonstrates the ability to use its water resources for irrigation purposes more efficiently thereby contributing to: a) reducing water over-exploitation, b) decreasing growth in future water demand from the Dead Sea ground-water basin and from the upper watersheds/wadis of the East Dead Sea sub-basin of the Jordan River, c) mitigating the risks associated with future climate change by integrating CC risk management into sustainable land and water management planning, and d) increasing availability of water supply for water domestic use;



- Climate change adaptation by increasing the resilience of the production systems, adopting increased irrigation efficiency (from spring and wadis), implementing water reuse demos and water harvesting measures, hence contributing to reduce the rate of groundwater pumping;
- Demonstrating and up-scaling best practices for land and water management, hence generating lessons that contribute to negative impact of over use of land and water resources resulting from agriculture in the East Dead Sea sub-basin. Good practices and models could be up-scaled throughout the MENA region or beyond for larger global benefit.

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

*The National Strategy for Agricultural Development*, 2002-2010 (NSAD) places strong emphasis on the sustainability of agriculture and therefore the protection of natural resources. The NSAD calls for the adoption and application of national legislation and international agreements for the protection of agricultural resources from deterioration and specifies a series of environmental objectives. These include the conservation of land, water, natural vegetation and biodiversity and the need to improve the technical and managerial capabilities in the sector. One of the main objectives stated (for rainfed agriculture) is to address soil degradation issues as part of the land reclamation process, while a further objective looks to the Ministry to benefit from the provision of international agreements, including funding facilities and technical assistance to support combating desertification, biodiversity conservation and protection of the environment.

The project will provide an opportunity to implement various priority initiatives identified under the NAPCCD ([http://www.undp-jordan.org/undp\\_in\\_jordan/NAP.pdf](http://www.undp-jordan.org/undp_in_jordan/NAP.pdf)), which provides a framework for incorporating long-term strategies to combat desertification consistent with national policies for sustainable development. The NAP includes six major programmes: (i) Desertification Information System (DIS), (ii) Drought prediction and desertification control, (iii) Capacity building and institutional development to address LD issues, (iv) Restoration of degraded ecosystems of rangelands and forests, (v) Watershed management, and (vi) Human, social and economic development initiatives. The NAP intends to support these programmes through the implementation of a number of new initiatives that include: Programme (i) Establishing a Desertification Database; Desertification Mapping and Public Awareness; Programme (ii) Centre of Drought Monitoring and Prediction; and Assessment of Drought Impacts; Programme (iii) National Training Programmes in Desertification Monitoring and Control; Establishing a National Fund to Combat Desertification; and Desertification Legal Framework for Monitoring and Development; Programme (iv) Community-based Rangeland Development; and Rehabilitation and Development of Forest Environment; Programme (v) Documentations of Traditional Knowledge on Soil and Water Conservation; Artificial Recharge of Groundwater; House Roof Water Harvesting; National Rainfall Water Harvesting for Agriculture Farming; and Use of Reclaimed Water for Greenbelt Areas around Villages and along Roads in Arid Areas of Jordan; Programme; (vi) Modules of Comprehensive Training for Communities; and Integrated Socio-economic Development of Communities in the Arid Lands of Jordan.

The project will also offer an opportunity to implement the *National Water Strategy* (NWS), by supporting three of the six measures foreseen under the NWS for the Highlands, i.e. measures (iv), (v) and (vi) mentioned under Section II.A (see above). Specifically, this implementation would be done through project Components 1 (ecosystem-based approach to improved water planning and management and creation of WUAs), 2 (capacity building to WUAs and farmers on NWS-supported practices and principles), 3 (on-the-ground investments in water harvesting, spring rehabilitation and water reuse for irrigation), 4 (improved water information management) and 5 (studies and coalition building for institutional and financial sustainability of WUAs and SLM and water investments, respectively).

## **C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND STRATEGIC PROGRAMS:**

The proposed project is compatible with the objective of the Land Degradation FA as revised under GEF-4. In the case of LD, it will mitigate the causes and negative impacts of land degradation, especially desertification on the structure and health of ecosystems through providing support for SLM practices. As regards to International Waters, it is fully consistent with addressing one of the four major water-related concerns prioritized under GEF-4, which is the overuse and conflicting uses of water resources in surface and mainly groundwater basins.

The national policy, institutional and regulatory framework to control land degradation and to promote the inclusion of ecological principles to the management of natural resources is already in place. Therefore, the focus on promoting actions of mutual benefits for the global environment and local people through catalyzing SLM investments for large-scale impact is consistent with LD-SO-2 and LD SP-1, i.e., through promoting initiatives that create and expand visible impact on the status of natural resources by up-scaling and disseminating best practices and approaches in SLM. Specifically, it would support a participatory approach to land use planning and management that would contribute to an increase in sustainable community-based agriculture, and grazing and/or forest management systems that contribute to achieving global environmental benefits in the context of sustainable development. The best SLM practices and complementary alternative non-NR based livelihood activities identified for potential support under the project have been piloted under field conditions in the project area and in the

region (a list of main projects and programs which have tested best SLM practices is available on the PDF file). To lesser extent, the project is also targeting LD SO1 through Public Awareness and Capacity Building for Scaling up SLM or local planning that will lead to increased SLM mainstreaming at all levels.

The project will support the implementation of the National Water Strategy and the IW SP-3, in terms of contributing to balancing overuse and conflicting uses of water resources in East Dead Sea sub-basin, by: i) promoting improved water management practices through incremental on-the-ground investments to implement improved practices, particularly demonstration and dissemination of practices that increase groundwater use efficiency for irrigation, reduce groundwater pumping (water harvesting cisterns), protect habitats around springs and reuse waste water reuse for irrigation; and ii) facilitating conflict management and resolution among land and water users through integrated natural management approach across focal areas, i.e., a participatory and negotiated agro-ecosystem planning process that will support the development of three Agro-Ecosystem Action Plans (AEPs) involving key land and water users and managers. Eligible on-the-ground investments for improved surface and ground-water management would stem from priorities established under the AEPs, and would contribute to water reuse (replicating the “grey water reuse” program), more sustainable irrigation practices, adaptation to fluctuating climate change regimes in the sub-basin, and improved water security to poor target communities.

The proposed project also conforms fully to the priorities of the MENARID Programme, designed as GEF-4’s programmatic framework to addressing priorities for the LD, IW, BD and CC focal areas in the MENA region. In particular, the project is consistent with two of the MENARID objectives that foresees, respectively, (i) the generation of mutual benefits for the global environmental and local livelihoods through catalyzing SLM investments for large-scale impact, and (ii) decreasing invulnerability of the beneficiaries to climate change and improve ecosystem resilience and integrity.

#### **D. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:**

GEF funded activities in Jordan are supporting a number of projects in the focal areas of biodiversity, climate change, POPs and multi-focal areas. There is high potential for establishing linkages and collaboration with some of these projects. Potential projects that offer potential for synergies are: (i) WB/GEF: Integrated Ecosystem and NRM in the Jordan Rift Valley Project and the Conservation of Medicinal and Herbal Plants Project; (ii) UNDP/GEF: (a) Small Grants Program and (b) proposed project on “Developing policy-relevant capacity for implementation of the Global Environmental Conventions in Jordan”, to follow-up on the UNDP/GEF National Capacity Self Assessment for Global Environmental Management (NCSA); (iii) UNEP/FAO: Land Degradation Assessment in Drylands Project (LADA). Moreover, the Global Mechanism is providing support to the MOE to develop a partnership building and resource mobilization strategy. Work presently being undertaken includes enhancing existing coordination mechanisms, undertaking an analysis of financing opportunities from bilateral and multilateral donors, and developing a set of full-scale project proposals from the NAP priorities, for presentation at the Country Financing Partnership (CFP) forum. Also, during the formulation of the three Agro-Ecosystem Action Plans (AEPs) in the East Dead Sea Sub-basin, the project would take into consideration (to the extent possible) the lessons learned from drafting and implementing the Strategic Action Program (SAP) for the Red Sea and Gulf of Aden, supported under a UNDP/UNEP/IBRD-GEF initiative. The project will seek synergies beyond Jordan’s boundaries, within the MENARID context in particular. The project will establish required linkages and synergies notably in terms of up-scaling, knowledge management and lessons learned

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

**Without the GEF:** In the absence of GEF funding, activities under the ARMP\_II and other ongoing programmes identified in the baseline scenario will produce predominantly local/national benefits, albeit limited, in the form of sustainable development and use of natural resources. Their implementation will result in: (i) rural poverty reduction, (ii) enhancing empowerment of rural communities to better access and use productive resources available to them; (iii) improved access to financial services for diversified income generation and supply of agricultural inputs; (iv) increased agricultural production; (v) improved coordination of public policies; (vi) increased rural roads and access to markets; and (vii) improved infrastructure for soil and water conservation schemes, though limited to physical investments and not including e.g. i) reforestation of riparian zones of wadis and springs, ii) land and water management planning, and iii) facilitation of land and water use conflicts.

Although the baseline generates significant socio-economic benefits and, to a certain extent, contributes towards an improved perspective of the arid and semi-arid Southern Highlands’ environmental problems, it does not ensure effective prevention and control of degradation and desertification of these lands, neither facilitate the resolution of water use conflicts. It would not address more far-reaching interventions to guarantee global environmental benefits associated with combating LD and addressing water concerns. Specifically, the baseline investments would not support necessary integrated approaches and interventions, such as the adoption of an ecosystem-based approach to planning and management of land and water resources, public awareness, capacity building on SLM, water conservation and reuse, knowledge sharing and dissemination and incentive



measures for adoption and up-scaling of best practices available in the country for sustainable agricultural and rangeland/pasture management. In addition, it will not promote the rehabilitation and restoration (with native species) of non-productive public and/or fragile lands including degraded rangelands and springs, and the restoration and further protection of degraded vegetation in areas currently under severe degradation caused by inadequate grazing and crop production systems; and it does not control erosion and soil losses in the upper reaches of the East Dead Sea watershed. Hence, it would not contribute to the generation of significant global benefits.

Moreover, the baseline program does not plan, design, and support activities through an ecosystem framework, resulting in reduced efficiency and lost opportunities to generate global benefits (e.g., by addressing water and climate change issues through improved water management and adaptation strategies while supporting the protection of whole wadis/watersheds containing remnants of Highlands habitats, and promoting the concept of an integrated system of connected natural areas to protect these habitats in PDEs).

**With the GEF:** As indicated in section II/A above, implementation of the proposed project would contribute to a system-wide change to remove these barriers to the scaling up of sustainable land and water management, hence addressing the direct drivers for the Southern Highlands ecosystems' degradation. Experience has shown that many successful technologies commonly associated with sustainable land and water management in arid/semi-arid lands are already well known and in some cases successfully adapted to local conditions in Jordan. These include best practices for land, surface- and ground-water use, as well as water reuse practices, with the latter under experimental phase. The rationale of the proposed project is to build on the existing knowledge base, using an IEM approach as an integrating framework to identify and scale-up relevant SLM technologies in response to specific local LD issues and characteristics. The proposed project would focus on mitigating the causes and effects of land degradation on the structure and functional integrity of key ecosystems of the country's Southern Highlands. It will achieve this goal through integrating an ecosystem-based approach into public-supported productive and poverty reduction activities supported under the ARMP-II; the latter designed to promote the quality of life of rural communities, consistent with the country's national priorities, including the NAP. Moreover, it would enhance integrated water resource management and application in the project area.

The proposed project would contribute to implement existing policies and complement ongoing baseline activities in the Southern Highlands, which are funded and implemented by the GOJ and various donors. In particular, it would add to the ongoing IFAD-supported ARMP-II project, by providing a more holistic ecosystem approach for pursuing adoption and up-scaling of sustainable land and water management practices at both the local, governorate and national levels. The view would be long-term, seeking to foster better stewardship of land resources and encourage the adoption of sustainable and beneficial resource management practices. Additional benefits would cascade from this project and contribute to biodiversity conservation through the enhancement of ecosystem functions, and carbon sequestration through the promotion of increased tree and vegetative cover through better ecosystem NPP.

**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:**

Risks include the possibility of weak participation by the local stakeholders in the community and agro-ecosystem planning processes, and unwillingness of some members of the community to adapt cultural practices which, at present, have adverse impacts on the well being of their households and communities. Building on the strong ARMP-II community development elements, the project will be designed to gain the trust and involvement of the communities and their leaders from the start and to generate a sense of ownership in project activities, which would minimize the risk of weak participation. It will also be designed to increase awareness on the linkages between local and global benefits, through supporting project agro-ecosystem planning, awareness raising activities and farmers field trials and field trips, where local communities would identify sustainable land and water management activities that meet both short-term economic needs and poverty reduction objectives while also achieving global environmental benefits. The risk of weak participation would also be reduced due to the fact that the best SLM practices and complementary alternative non-NR based livelihood activities being currently identified for potential support under the GEF Alternative have been piloted under field conditions in the project area and in the region.

The capacity of the key implementing ministries and their staff at governorate and district levels to engage directly with communities on a sufficiently regular basis is limited and there is a risk of delayed actions and non-performance. Adequate project resources will be allocated to strengthen the capacity of key implementing agencies at local levels to ensure timely and proper implementation of the proposed activities and reduce the risk.

Another risk would be associated with scaling-up the project SLM & Env MIS to the national level: at present there is no national agreed system of environmental monitoring, despite the recognition by the MOE, MWI, MOPIC and MOA of the need to develop such a system (identified in the NAP and the NSAD) to respond to commitments made under the UN Conventions. This risk would be minimized by: (i) developing an appropriate MIS that will be designed for use at different administrative

levels and tested in the three governorates and PDEs covered by the project; after being tested, it will become a standard tool for monitoring and evaluating SLM projects in different ecosystems in Jordan, (ii) identifying those ranges of indicators most applicable to Jordan while then clearly determining how they can be measured, and by which organizations (clearly defined roles and responsibilities).

In the MENA region, climate change impacts are expected to be particularly acute, and is therefore of special importance to project level initiatives for adapting to these impacts. In the proposed project area the adaptation response would be to enhance the capacity of the agricultural land use and water management systems to respond to the process of increasing climate variability. This means to increase the drought resistance of the systems to bridge longer periods of drought while increasing the soil infiltration capacity to reduce surface runoff and loss of rain-water and stabilize the water flows in the watersheds. The project would support the adaptation and up-scaling of the best SLM practices to reduce CC risks through technical means, improvements in land use practices and community awareness programs.

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

The proposed GEF project is blended with the IFAD/ARMP-II project; this will ensure cost-effectiveness, lowered transaction costs and further harmonization. Foreseen linkages with MENARID interventions will also improve the harmonisation and efficiency of GEF intervention in targeted areas. The project would promote SLM in approximately 6,450 km<sup>2</sup> of production landscapes at a cost of US\$ 20.2 million (or about US\$ 30/ha) during the lifetime of the project. The quantifiable impact would be increased net revenue (see below paragraph) associated with reduced land degradation, plus improved management of the remaining vegetation cover.

In addition, and in order to ascertain the benefits at the household/farm level resulting from project supported SLM activities, preliminary financial analyses have been undertaken by the on-going ARMP-II project on a range of representative farms to test the feasibility of the proposed interventions. All of the proposed interventions would yield attractive rates of return and incremental net revenue. Financial analysis of crops and farm budgets were conducted on typical farm models. Five farm models were developed and used to arrive at incremental incomes at farm level due to project interventions. Four farm models would derive their incremental income from the soil and water conservation measures and extension to implement diversified orchards. One farm model would reflect benefits from the spring development, protection and extension (for irrigated olive trees). The models are based on (i) location of the farm with respect to rainfall; (ii) average farm size; and (iii) changes in cropping patterns.

To arrest LD in areas land use pressures hinder SLM adoption, the project would promote alternative livelihoods as a source of income generating activities (mainly under component 3) in these areas. Livelihood system analysis in the project area included estimation of the annual income after incremental operating cost, depreciation and incremental overhead for some IGAs. For one of these six enterprises (medicinal herbs), the farmer or small entrepreneur would be able to pay back his/her investment in 1 year; for two of them (beekeeping and oyster mushroom), in 2 years; and for another two (handicraft development and Bed & Breakfast), in 5 years.

The project would also be cost-effective from a water perspective, mainly through water use efficiency. The most cost-effective models and techniques identified are spring development (mainly rehabilitation and protection) and water harvesting (and water reuse on a demonstration basis). With the ability to use its water resources for irrigation purposes more efficiently, the project would contribute to reducing water over-exploitation and increasing availability of water supply for water domestic use hence, being more cost-effective by reducing the impact of irrigation on the availability of water supply, while contributing to water food and water security. In addition, results from the aforementioned financial analysis for one of the farm models involving physical investments in water (spring rehabilitation and protection representative of a present 0.4 hectares). This model represents 300 ha of irrigated olive trees. With the project, the gross value of production will increase by JOD 500 (1 JOD = 1.41 USD), from JOD 200 for without the project condition to JOD 700 at full development. The farm family benefit after financing would increase by JOD 261, from JOD 132 for the without project situation to JOD 393 at full development.

#### **H. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:**

Further to its strong experience in the region, IFAD's portfolio in MENA and Jordan has strong linkages with NRM issues. It focuses on water harvesting in several dry countries, irrigation use efficiency and support to water user's associations. At the local level, IFAD's strong experience on participatory NRM and water resource use and management experience offers good practices and lessons that will be considered in this GEF project design and implementation. Further IFAD lessons and experience are gathered from IFAD's experience with water resource management from within and outside the MENA region. In fact, IFAD has supported several initiatives that contribute to integrate water resource management at large scales. Examples include: (i) the regional environment Information Management Project for the Congo Basin, Enhancing Mekong Region Water governance, development of Regional strategy for the utilisation of the

Nubian sandstone aquifer system and the Programme for the development of a Regional water management strategy for the North Western Sahara aquifer system.

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

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

Dr. Saleh Al-Kharabsheh Director, Projects Department GEF Operational Focal Point Ministry of Planning and International Cooperation	Date: 09 January 2008
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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.	
Khalida Bouzar GEF Coordinator, GEF Unit Programme Management Department	Naoufel Telahigue Programme Officer
Date: 18 January 2008	Tel.: +39.06.54592572 Email: n.telahigue@ifad.org
<i>Please do not forget to copy the IFAD/GEF Registry on official communications: <a href="mailto:gefregistry@ifad.org">gefregistry@ifad.org</a></i>	



Ref. No. ....

Date: ٠٩/٠١/٢٠٠٨

الرقم .....  
التاريخ .....  
الموافق .....

Dr. Khalida Bouzar  
GEF Coordinator  
GEF Unit, Programme Management Department  
International Fund for Agricultural Development  
Rome, Italy

**Subject: Endorsement for Mainstreaming Sustainable Land and Water Management Practices**

Dear Dr. Bouzar,

In my capacity as GEF Operational Focal Point for Jordan, I confirm that the above project proposal (a) is in accordance with the government's national priorities and the commitments made by Jordan under the relevant global environmental conventions and (b) has been discussed with relevant stakeholders, including the global environmental convention focal points, in accordance with GEF's policy on public involvement.

Accordingly, I am pleased to endorse the preparation of the above project proposal with the support of International Fund for Agricultural Development (IFAD). If approved, the proposal will be prepared and implemented by Ministry of Agriculture. Further, I request IFAD to provide a copy of the project document for review before it is submitted to the GEF Secretariat for CEO endorsement.

I understand that the total GEF financing being requested for this project is \$7.1245 million, inclusive Agency fee (10%) to IFAD for project cycle management services associated with this project.

Sincerely,

Saleh Al-Kharabsheh  
Director, Projects Department  
GEF Operational Focal Point  
Ministry of Planning and  
International Cooperation