



## PROJECT CONCEPT and REQUEST for PIPELINE ENTRY

**AGENCY'S PROJECT ID:**  
**GEFSEC PROJECT ID:** 2631  
**COUNTRY:** Jordan  
**PROJECT TITLE:** Mainstreaming Sustainable Land Management Practices  
**GEF AGENCY:**  
 International Fund for Agricultural Development (IFAD)  
**OTHER EXECUTING AGENCY (IES):**  
 Ministry of Planning and International Cooperation (MOPIC), Ministry of Environment (MOE), Ministry of Agriculture (MOA), and Ministry of Water and Irrigation (MWI).  
**DURATION:** PDF-B: 12-15 months  
**GEF FOCAL AREA:** Land Degradation  
**GEF OPERATIONAL PROGRAM:**  
 OP 15-Sustainable Land Management  
**GEF STRATEGIC PRIORITY:** SLM 1 and 2  
**ESTIMATED STARTING DATE:** 1 January 2005  
**ESTIMATED WP ENTRY DATE:**  
**PIPELINE ENTRY DATE:**

FINANCING PLAN (US\$)	
<b>GEF ALLOCATION</b>	
Project ( <i>estimated</i> )	6,450,000
<b>PROJECT CO-FINANCING (estimated)</b>	
IFAD	11,570,000
Government	11,000,000
OPEC Fund	10,270,000
Project beneficiaries (in cash and/or in-kind)	2,430,000
<i>Sub-Total Co-financing:</i>	32,840,000
<b>Total Project Financing:</b>	<b>39,290,000</b>
<b>PDF FINANCING</b>	
PDF B	350,000
<b>PDF CO-FINANCING</b>	
IFAD	240,000
GM	50,000
Government	30,000
Others	35,000
<i>Sub-Total Co-financing:</i>	355,000
<i>Total PDF Financing:</i>	705,000

### RECORD OF ENDORSEMENT ON BEHALF OF THE GOVERNMENT:

H.E. Bassem I. Awadallah  
 Minister of Planning and International Cooperation  
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Date: 26 September 2004  
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This proposal has been prepared in accordance with GEF policies and procedures and meets the standards of the GEF Project Review Criteria for concept/PDF B approval.

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### **A – SUMMARY**

- 1. Jordan's natural resources are very limited. Only about 5% of Jordan is considered arable, and it is among the world's most water-deficit countries. A major challenge for the Government is therefore, 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. Land degradation processes affect not only selected ecosystem components or functional cycles, rather they are destructive processes that negatively impact on the entire environmental landscape. Desertification related processes result in decreases in soil carbon and Greenhouse Gas (GHG) emissions, while changes in plant and animal biodiversity have impacts on the proper functioning of environmental services. Similarly over-pumping of aquifers in degraded areas has negative consequences for the quality of freshwater through mobilization of salinity and minerals. Deforestation has been clearly linked to carbon emissions and global climate change. While land degradation processes have to a large extent a human-induced local origin, if not addressed appropriately, the negative effects will have implications on regional and global environmental goods and services.*
- 2. Jordan is endowed with a rich source of floral and faunal biodiversity with 2500 plant species, of which 100 species are endemic, 411 bird species, 77 mammal species, 97 reptile species and 5 amphibian species. Many of these species are found in semi-arid and arid ecosystems. Heavy grazing widespread ploughing for rainfed cultivation of barley, and accelerated soil erosion and degradation due to wind and water erosion are threatening the habitats that support biodiversity. Much of the biodiversity is resilient to extreme climatic variations and provides a valuable gene pool for contending with future climate change scenarios.*
- 3. Although much of the project area was once covered by Mediterranean evergreen forest in the west, with a transition through to natural steppe in the east, since the Nabatean and Roman periods most of the indigenous vegetation has either been cleared for wood and agriculture or has been degraded through inappropriate land use. The soils of the area are vulnerable to erosion, and this, combined with extensive cultivation over time, has resulted in a decline in soil structure, a reduction in chemical fertility and an increase in erosion hazard - especially on steeper slopes of the wadis.*
- 4. The project goal and objectives focus on mitigating the causes and effects of land degradation on the structure and functional integrity of ecosystems through institutional strengthening and sustainable land management interventions, while contributing to poverty alleviation by improving local livelihoods and economic well-being. The approach to be adopted is based upon integrating existing initiatives with proposed project activities described in Jordan's National Action Programme to combat desertification (NAP). The project would complement proposed and ongoing baseline activities in the Highland areas of the Governorates of Karak, Tafila and Maan which are funded and implemented by the Government of Jordan (GOJ) and supported by the International Fund for Agricultural Development (IFAD), and others, through the Agricultural Resource Management Project (ARMP-II).*

5. *The full project (i.e. the baseline plus additional GEF activities) would extend and expand ARMP-II's activities and provide a more holistic approach for pursuing sustainable land management practices at both the local and national levels. This would result in promoting sustainable land management approaches while supporting GOJ's poverty alleviation goals. 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. Furthermore, increased capacities of Government and other actors will provide a vehicle for sustained efforts to combat desertification and poverty alleviation as well as be able to better deal with future climate change affects.*

6. *ARMP-II has as its primary objectives increasing food security and income levels of resource poor households, to be achieved by an integrated program comprising land and water conservation activities to arrest soil degradation, restore soil fertility and improve sustainable agricultural production, and a credit program to provide alternative income sources, mostly for women. An evaluation of the first phase of the project (which finished at the end of 2003) showed that extremely favourable impacts had been achieved, and that the vulnerability of a section of the rural communities had been decreased and incomes significantly increased.*

7. *The **rationale** for GEF support is to facilitate the enhancement of the enabling policy, regulatory and incentive frameworks that govern natural resource use, promote integrated land use planning and mainstream SLM into national planning frameworks. This will enable the mitigation of land degradation and help alleviate poverty, as well as, support the Government in meeting its obligations as an affected country Party to the UNCCD. The GEF project would have a number of **objectives**. These objectives – to be further refined in the PDF-B stage – would include:*

- *Enhancing the application of sustainable land management practices, by widening the scope and ambitions of the conservation activities included in IFAD's ARMP II project and identify a range of appropriate incentives to encourage uptake of SLM activities.*
- *Enhancing integrated water resource management and application in the project area as tool for SLM including water harvesting, dams, spring water, and waste water reuse.*
- *Supporting the development of an environmental monitoring system at national and project levels, so as to (i) enable GOJ to assess land degradation mitigation measures and the contribution of such measures in achieving global benefits, and (ii) to identify appropriate, practical and cost effective indicators at the project level.*
- *Initiating a policy dialogue to harmonise Government policies and legislation and extend public and government awareness programs to enhance the priority for SLM issues, as well as, facilitate the increase of national allocation of resources to combat desertification.*

- *Supporting the development of coordination mechanisms to ensure that an efficient and cost effective inter-sectoral planning system is developed, and provide capacity building to help realise the above aims.*

8. *The objectives of the full GEF project would be realised through six component activities, these are: (i) Community Awareness and Mobilisation; (ii) Sustainable Land Management Approaches; (iii) Integrated water resource Management; (iv) Environmental Monitoring; (v) Capacity Building/Institutional Strengthening, and; (vi) Project Coordination Unit. The GEF alternative will be firmly rooted in ARMP-II as a baseline. The incremental activities to achieve wider national and global benefits will build on existing ARMP II components and through development of additional complementary GEF related components.*

9. *The optimisation of water resource management is a key factor in GOJ's development planning, and this is clearly recognised in the NAP. GOJ's ambitions to increase agricultural production and productivity rely on balancing water use in agriculture with the increasing demands of a growing population. While this problem is not new, strategies and legislation have so far failed to make any decisive headway and there is an urgent need, within the overall framework of addressing land degradation, to re-emphasise the vital aspects of protecting and controlling water resource use and linking this to agricultural and social targets. This would be fostered with GEF support through activities which required complete integration of land and water resource management, and promoting coordination between the relevant authorities and the users.*

10. *The expected outcomes of the full project would be:*

- *A strengthened and more unified approach to halting and reversing land degradation as a result of mainstreaming sustainable land management approaches into national planning frameworks*
- *The strengthening of coordination mechanisms and inter-sectoral linkages between all actors*
- *An overall environmental monitoring system which is consistent with international standards and practices*
- *Replication of local land and water conservation activities in other areas within Jordan*
- *The Addressing of NAP priorities with respect to mitigating land degradation*

11. *These are consistent with the expected outcomes outlined in OP15, namely: (i) strengthening institutional and human resource capacity, (ii) creation of an enabling environment for implementation and replication of proposed project interventions by strengthening policy, regulatory, and economic incentive frameworks, and (iii) on-the-ground investments for improvement of the economic productivity of land through sustainable management and restoration of the structural and functional integrity of dryland ecosystems. In addition, the mainstreaming of sustainable land management approaches and their replication would lead to long term and sustainable global benefits, particularly in terms of carbon sequestration and the maintenance of biological diversity.*

12. *The objective of the PDF-B phase is to lay the groundwork for implementation of the GEF grant. This would require further analysis of the causes and effects of those aspects of land degradation which the GEF project will address, the establishment of coordination mechanisms between relevant actors, stakeholder consultations for identifying the activities to*

*be funded, the formation of coordination committees and undertaking need assessment surveys to specify institutional strengthening and capacity building programs. This is a very extensive itinerary, hence the need for PDF-B funding.*

## **B – COUNTRY OWNERSHIP**

### **1. Country Eligibility**

13. The UN Convention to Combat Desertification (UNCCD) was ratified on the 21<sup>st</sup> October 1996. A “National Committee to Combat Desertification” (NCCD) was established by a decree in 1997 by the Council of Ministers. The NCCD has representatives from all concerned ministries, NGOs and women’s groups and is chaired by the Secretary General of the Ministry of Environment (MOE).

14. Jordan was one of the 30 original supporters of the World Conservation Strategy, which provided a framework to guide individual countries to prepare National Environmental Strategies – in Jordan’s case the main aim was described as “managing natural resources in a way that conserves the basic resources necessary for human growth and survival”. Secondary stated aims were to maintain: (i) biological diversity by protecting various species of animals, plants and micro-organisms, and (ii) productivity of environmental systems, especially forests, grazing land and agricultural land. Jordan’s National Agenda 21 document was prepared by the General Corporation for Environmental Protection (GCEP), with assistance from UNDP: this gives details of an umbrella approach to development that identifies combating desertification as a national priority.

### **2. Country Drivenness**

15. The Ministry of Planning and International Cooperation (MOPIC) has shaped a conducive and enabling environment for achieving higher sustainable socio-economic development goals and is a driving force for guiding and coordinating governmental socio-economic policies, programs and priorities, as well as being the main agency for enhancing international cooperation for addressing these goals. MOPIC is responsible of formulating, mobilizing the necessary funds, monitoring and following up the implementation of the strategic plans for development in Jordan. Therefore MOPIC, working as a counterpart for all the international institutes and organizations, is the sole source of contact and coordination between the international institutes and organizations and the different national institutes and organizations.

16. In January 2003, a new Ministry of Environment was established (by transforming the GCEP) with a mandate for promoting protection and improvement of the environment. The primary environmental legislation (Law No. 12 of 1995) was substituted by a temporary law (Law No. 1 of 2003): Article 4 (paragraph D) and Article 23 (paragraph A/10) stipulate that the Ministry will address and control sources of soil pollution and ascertain and act upon reasons for soil slides and desertification. The National Action Programme to Combat Desertification (NAP) was drafted by the MOE during 2003 and is in the process of being finalised. The NAP describes the present institutional framework of government, NGOs and other organisations responsible for, or active in anti-desertification programs, and provides a framework for incorporating long-term strategies to combat desertification consistent with national policies for sustainable development. The process of preparing the NAP involved considerable stakeholder consultation in order to build consensus; this included convening

National Forums to identify issues, priorities, and potential solutions. The program aims may be summarised as sustainable management of natural resources, maintaining the productivity of environmental systems (especially forests, grazing land and agricultural land) and promotion of human welfare. Seven program areas are defined in the NAP (and in each program area a number of possible projects have been identified, 33 in total), these are:

- Improvement of monitoring and information systems
- Combating desertification through consistent efforts for soil conservation and reforestation
- Strengthening integrated programs for poverty alleviation and promoting alternative livelihood strategies
- Developing comprehensive anti-desertification programs and integrating them into national environmental planning
- Addressing drought preparedness issues
- Encouraging popular participation to address issues of desertification
- Building national capacities in the fields of combating and monitoring land degradation

While the MOE provides an umbrella organisation concerned with environmental issues, other line ministries have long developed their own strategies for addressing key natural resource constraints and degradation. This particularly applies to the Ministries of Water and Agriculture :

- The Ministry of Water and Irrigation has overall responsibility for water planning and management nation-wide. It has two operating arms for project and programme implementation; the Jordan Valley Authority (JVA), which is responsible for irrigation development and management in Jordan Valley and Southern Ghors; and the Water Authority of Jordan (WAJ), with responsibility for the national municipal water supply and waste water collection and treatment (including the Jordan Valley). The third unit, under a Secretary General at a level equal to that of JVA and WAJ, is responsible for all water resources planning, policy and strategy formulation, human resource development, and data collection and analysis. The Ministry of Water and Irrigation's (MWI) strategy for water use provides a comprehensive set of guidelines and approaches for supply and demand management, emphasising the need for improved resource management and stressing the urgency of protecting the water supply against pollution, quality degradation and the depletion of resources.

- The Ministry of Agriculture is responsible for the agricultural and livestock sectors. The Ministry is pursuing a development strategy of making the country self-reliant in food; efficient utilization of available resources, increasing farmers' incomes, meeting local market requirements and expanding exports and maximizing the value add of Jordan's agri-business and agriculture's share in GDP. The Ministry provides services and formulates policies and implement projects and programmes aimed at the development of agriculture and livestock. In May 2004, Ministry was reorganised<sup>1</sup> and will operate through seven broad divisions, each headed by a Deputy Secretary General at its headquarters in Amman, and 14 directorates at the governorate level, and nine directorates at the district level. The departments and the governorate directorates report to the Deputy Secretary General for Governorates, while the district agricultural directorates report to the governorate directorates. The agricultural directorates in each Governorate are under the administrative guidance of the respective Governors. 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.

17. The Royal Society for the Conservation of Nature (RSCN), established in 1966, has been given the responsibility by GOJ of protecting the Kingdom's wildlife and natural heritage. The Society is active in developing protected areas (six so far) which seek to link conservation with eco-tourism, providing incentives for local communities to be involved in conservation activities. RSCN also develops curricula material for use in schools and generally promotes public awareness of conservation issues. There are a number of NGOs working in Jordan active in community development, women's affairs and a wide-range of other activities; among the better known are the Noor Al Hussein Foundation (NHF) and the Jordanian Hashemite Fund for Human Development (JOHUD). These NGOs promote socio-economic activities based on sustainable practices, which include developing environmental awareness.

18. The MOA produces and freely distributes forest seedlings to encourage reforestation. Planting programs are arranged by schools, universities, companies and NGOs, as well as the Armed Forces and the MOA. Work to address the degradation in the *badia*<sup>2</sup> has been ongoing for many years and there are a number of NGOs and other organisations concerned with *badia* issues. In particular the Higher Council for Science and Technology is implementing a Badia Research and Development program, which aims to sustain the cultural traditions of the herder communities while seeking to improve the rangelands. The Jordanian Society for Desertification Control and Badia Development is undertaking similar projects, but on a smaller scale. International support has also been provided by DFID, FAO and IFAD (the

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<sup>1</sup> Council of Minister's Decree No 82 of 2004.

<sup>2</sup> The *badia* refers to open rangeland and desert areas which occupy some 90% of the eastern and southern land areas of Jordan

latter supports an ongoing project in the *badia* – the National Program for Rangeland Rehabilitation and Development – which is being implemented by MOA).

19. The GOJ is also collaborating with the Global Mechanism of the UNCCD (GM) to develop a partnership building and resource mobilisation strategy. The main thrust of this work is to attract additional technical and financial support for strengthening the implementation of the Convention. The GOJ is committed to pursuing the necessary preparatory activities of bringing together a diverse range of national as well as external stakeholders for identifying needs and potential financial resources.

## **C – PROGRAM AND POLICY CONFORMITY**

### **1. Program Designation and Conformity**

20. This proposal is to develop a GEF funded project, entitled *Mainstreaming Sustainable Land Management Practices in Jordan*. The project goal and objectives focus on mitigating the causes and effects of land degradation on the structure and functional integrity of ecosystems through institutional strengthening and sustainable land management interventions, while contributing to poverty alleviation by improving local livelihoods and economic well-being. The approach to be adopted is based upon building synergies between planned initiatives and proposed priority project activities identified in Jordan's NAP. The project would complement proposed and ongoing baseline activities in the Governorates of Karak, Tafila and Maan which are funded and implemented by the GOJ and supported, among others, by the International Fund for Agricultural Development (IFAD). The proposed full-scale project would be highly relevant to the global environmental concerns of the GEF and is in conformity with the objectives of Operational Programme 15 (Sustainable Land Management).

21. The full project (i.e. the baseline plus additional GEF activities) would extend and expand already successfully proven techniques of land and water conservation to encompass a more holistic approach to sustainable land management practices, grounded on priorities identified by the local communities. This would result in addressing land degradation issues while supporting Government poverty alleviation aims. The view adopted by this project is long term and seeks to engender better stewardship and encourage the adoption of sustainable and beneficial practices for resource management. Additional benefits would be biodiversity conservation through protecting ecosystem integrity and function, and mitigating climate change by promotion of increased tree and vegetative cover. The expected outcomes of the full project would be consistent with the expected outcomes outlined in OP15, namely: (i) strengthening institutional and human resource capacity; (ii) creation of an enabling environment for implementation and replication of proposed project interventions by strengthening policy, regulatory, and economic incentive frameworks; and (iii) on-the-ground investments for improvement of the economic productivity of land through sustainable management and restoration of the structural and functional integrity of dryland ecosystems.

## 2. Project Design

### Problem Statement

22. Jordan's natural resources are very limited. Only about 5% of Jordan is considered arable, and it is among the world's most water-deficit countries. A major challenge for the Government is therefore, 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 many social and economic development gains. Land degradation processes affect not only selected ecosystem components or functional cycles, rather they are destructive processes that negatively impact on the entire environmental landscape. Desertification related processes result in decreases in soil carbon and Greenhouse Gas (GHG) emissions, while changes in plant and animal biodiversity have impacts on the proper functioning of environmental services. Similarly over-pumping of aquifers in degraded areas has negative consequences for the quality of freshwater through mobilization of salinity and minerals. Deforestation has been clearly linked to carbon emissions and global climate change. While land degradation processes have to a large extent a human-induced local origin, if not addressed appropriately, the negative effects will have implications on regional and global environmental goods and services.

23. Jordan's biodiversity is of global importance. The country's location and its unique geographical features provide for a tremendous diversity of habitats, including unique distributions of species, communities and coral reefs<sup>3</sup>. As the global community becomes increasingly concerned with dry land biodiversity and the consequence of its conservation and management, Jordan, situated at the centre of a unique biota, offers a window into the biodiversity of drylands. However, the processes of land degradations are at the centre of the threats to maintaining this biodiversity. Heavy grazing, excessive ploughing, unbalanced water use and unplanned water extraction from surface and underground water resources are threatening many parts of Jordan and consequently affecting the habitats and micro ecosystems of both animals and plants. Pollution of surface and underground water resources and aquifers due to agro-chemicals, sewage discharge and solid waste disposal also increase the threat to the presence and ability of many species of fauna to reproduce.

24. Global warming is also a major threat to Jordan, in that water resources are already significantly overused and any reduction in rainfall would have profound affects on the human population as well as the already declining productivity of the limited cultivable area. This factor alone has consequences for carbon sinks and reservoirs.

25. The GOJ is committed to reducing poverty by achieving a combination of sustainable economic growth and improvements in basic social services. Measures to improve incomes, self-reliance, and the quality of life of the poorest segments of the population have been given the highest priority<sup>4</sup>. In 2001, an estimated 11.2% of the population was below the poverty

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<sup>3</sup> Jordan's location at the crossroads of climatic and botanic regions endows the country with a rich variety of plant and animal life including some 2500 plant species (of which 100 species (2.5%) are listed as endemic), 411 bird species, 77 mammal species, 97 reptile species and 5 amphibian species were recorded (Jordan Country Study On Biological Diversity,1998). The number of invertebrate species is difficult to estimate.

<sup>4</sup> Ref : Poverty Alleviation for a Stronger Jordan – A Comprehensive national Strategy, May 2002,

line<sup>5</sup>, with about 20% of the absolutely poor and 25% of the abjectly poor being employed in the agricultural sector. A National Strategy for Poverty Alleviation was launched in May 2002, however, a relatively high population growth rate (2.8% in 2001), plus a slow rise in GDP (1%), means that poverty is likely to increase unless the underlying causes are addressed. For the MOA, a major concern is to promote employment in the rural sector through stimulus of on- and off-farm activities. The linkages between poverty and environmental degradation are recognised and well described in GOJ planning documents.

## **WITHOUT GEF<sup>6</sup>**

### ***Direct Causes of Desertification***

26. Although much of the project area was once covered by Mediterranean evergreen forest in the west, with a transition through to natural steppe in the east, since the Nabatean and Roman periods most of the indigenous vegetation has either been cleared for wood and agriculture or has been degraded through inappropriate land use. The soils of the area are vulnerable to erosion, and this, combined with extensive cultivation over time, has resulted in a decline in soil structure, a reduction in chemical fertility and an increase in erosion hazard - especially on steeper slopes of the wadis.

27. There is no precise up-to-date quantitative data available to indicate the extent of soil erosion in the project area. A study conducted by FAO/UNDP in 1979 suggested that most soils in Jordan were subject to erosion by water and wind, with the water erosion hazard being in the range 50 -200 ton/ ha for Karak and Tafila, and between 10 - 50 ton/ha for Shoubak, Wadi Musa and Ail<sup>7</sup>. The wind erosion hazard in the entire eastern part of the project area was estimated to contribute an additional 10-50 ton/ha. Changes in land use and population growth in recent years have resulted in a reduction of land available for agriculture and an increase in orchard plantation within the project area. This in turn has forced annual cropping and grazing into areas of higher risk - either due to steeper slopes or more marginal rainfall, offsetting the gains from orchard establishment.

28. Land use changes have also been paralleled by changes in cultivation techniques; previously land was cultivated by animal draught, following the contour lines, however, mechanized soil preparation is now available to all farmers by way of numerous contractors and is considerably cheaper than animal draught. As a result, even in steeper areas, vertical ploughing along the slope three to four times per season is a common feature, resulting in an overall increase in the erosion risk throughout the project area. These changes have resulted in a reduction in productivity, in what should be one of Jordan's most favoured agricultural areas.

29. Pumping of aquifer waters for irrigation has been increasing in the project area, without serious attempts to improve recharge into these aquifers, such as by water harvesting. In the case of one aquifer (the El Jafr Basin) the extraction has been estimated at 200% of the sustainable yield. While the drilling of new wells has been stopped (new by-law of 2002), the whole situation is not sustainable and the future relies on considerably increasing water harvesting (including waste water) and efficiencies of use. Furthermore, overgrazing and deforestation are both recognised in the NAP and in Agenda 21 as being severe problems in

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<sup>5</sup> Poverty line estimated by the World Bank at JOD 313.5 (about USD 442) per capita per year.

<sup>6</sup> For more details of country and project area background, see Appendix 2.

<sup>7</sup> The phase 2 areas.

many parts of Jordan. Both are being addressed through discrete strategies and programs, many developed by MOA.

### ***Indirect Causes of Desertification***

30. Jordan's rapid population growth is exerting considerable pressure upon its lands. Halting the fragmentation of land holdings and arresting the drift to urban centres have become major considerations for the GOJ; hence, there is considerable emphasis on the sustainable development of better agricultural areas, specifically in the Highlands. Prevailing poverty in arid and semi-arid areas of Jordan is also having a significant impact on the rate of desertification. 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.

31. While all the above causes of desertification are of concern, it has been noticeable that until the preparation of the NAP there was no possibility of generating an integrated approach to address this multi-dimensional problem. Various agencies of the GOJ have described specific aspects of the problem and have developed their own strategies, but they have lacked a comprehensive focus and only generated limited impact. This has been partly the result of financial constraints, but also reflects the difficulty of coordinating planning frameworks. With very limited natural resources it is in the national interest that all forms of degradation are effectively mitigated. The political will has been demonstrated by the establishment of the MOE, and it is now opportune to provide support to reinforce the attempts to combat desertification in a comprehensive manner. The urgent need is for significant capacity building at all levels, plus the development of coordination arrangements and information networks in order to unify and optimise the programs of the numerous local agencies concerned. In addition, practical impacts need to be demonstrated in order to build consensus.

### **Baseline Actions**

#### **The Agricultural Resource Management Project**

32. The International Fund for Agricultural Development (IFAD) has been supporting development in Jordan since 1981. So far IFAD has supported 6 projects, with a total cost of USD 147.2 million; of this loan and grant funds have amounted to USD 59.5 million. The goal of IFAD's country strategy for Jordan is poverty alleviation to be achieved by helping target groups make more sustainable and profitable use of their private or common land and water resources by improving their access to rural finance, management skills, appropriate technology and marketing. The focus is both on rainfed areas in the highlands, and on rangelands; in both areas livelihoods from agriculture are vulnerable and environmental protection is a high priority.

33. The Agricultural Resource Management Project (ARMP), designed in 1995, was the fourth project in Jordan supported by IFAD. Its primary objectives were increasing food security and income levels of resource poor households in the highlands of Karak and Tafila Governorates, to be achieved by an integrated program comprising land and water conservation activities to arrest soil degradation, restore soil fertility and improve sustainable agricultural production, and a credit program to provide alternative income sources, mostly for women. An evaluation of the project (which finished at the end of 2003) showed that extremely favourable impacts had been achieved, and that the vulnerability of a section of the rural communities had been decreased and incomes significantly increased (see Box 1).

34. Based on the successful implementation of ARMP the Government of Jordan has requested a second phase of the project<sup>8</sup>. The baseline activities of the second phase, ARMP II, will be similar to those in the first phase, but with more emphasis of community development activities and targeting poorer villages. Although not specifically described as an environmental project, ARMP II's goal of poverty alleviation relies mostly on achieving environmentally sound aims and especially reversing land degradation.

**Box 1: Results from the Evaluation of the First Phase of ARMP**

By the end of 2003, the project had generally achieved over 90% of its physical targets, including protecting more than 60,000 dunums of land, constructing over 2800 water storage cisterns and building 900 km of stone walls. In addition, some 29 check dams and 4000 cu m of gabions have been installed to protect wadis and control erosive water flows, and 66 natural springs have been rehabilitated and protected. The effects of these conservation activities have allowed the planting of over 30,000 dunums of fruit trees. The degradation of land and water resources has been reduced or arrested on both public and private land where project interventions have taken place.

The project has changed farming technology and practices by introducing judicious use of fertilizer for tree crops, improved efficiency in the use of irrigation water, more effective pruning, increased use of contour ploughing, and more rational cropping patterns for land of varying gradients. The construction of water storage facilities has resulted in improved pasture, and increased the area of protected and stabilised soil on private farms. As a result land areas and productivity have increased, and the combined effect will be to improve the robustness and resilience of the farming systems, thereby improving food security

The women's program has proved extremely popular and provided training and loans to over 1000 women. In addition to this, specific references for inclusion of women-headed households in the SWC and agricultural components has meant that overall women's access to project benefits has been good. Women beneficiaries confirmed that they felt more empowered in the household as a result of being income earners, particularly those that had no previous employment.

However, it was recognised that on-farm water use had not been optimised by the project's interventions and there was a need to address water use efficiencies and to drastically reduce the use of ground water for irrigation. In addition, the active partnership and participation, which had been a feature of the design was not in the end realised to any great extent. This had reduced the scope of achievements and also led to a fragmented approach to protection within the watersheds. This pointed to the need to give more priority to community development activities as a precursor to financing SWC activities.

35. In the design of ARMP II, new and revised activities are to be introduced in response to the lessons from the first phase. A new Community Development component will give much higher priority to the selection and involvement of communities, which is mostly to ensure greater ownership and a more holistic watershed approach to combat erosion, while revised mechanisms for loans will lead to better access for the poorest members of society in the on and off-farm income generating activities. Government strategies have progressed recently, so that participatory approaches are now emphasised in addressing poverty alleviation. This will require a change in approach for the MOA, which previously gave more priority to increasing national agricultural production with limited attention to protecting the carrying capacity of the land.

36. The main objectives of ARMP II are to improve food and water security and income levels of the target group of poor and rural households residing in the project area by promoting effective use of soil and water resources, and introducing better management

<sup>8</sup> And has also replicated the project in another Governorate (Yarmouk).

practices for their sustainable use, with particular focus on environmental conservation. These would be achieved through (i) technical and financial support to construct soil and water conservation measures and improve agricultural production through active participation of the target group; (ii) environmental conservation to enhance natural resource use, and promote integrated land use planning and management (iii) promotion of rural micro-finance for on- and off-farm activities; and (iv) strengthening the capacity of existing Project Management Unit (PMU) and the agricultural directorates in the project area to provide the required technical support services and extension in line with the Government decentralisation plan to enhance sustainability of these services.

37. ARMP II has seven main components: (i) Community Development; (ii) Resource Management; (iii) Sustainable Land Management<sup>9</sup>; (iv) Agricultural Development; (v) Rural Roads; (vi) Rural Financial Services; and (vii) Project Management. Further details of ARMP II objectives and activities can be found in Appendix 3 – the Project Logframe, including suggested monitoring indicators. IFAD financing would be about USD 11.045 million, while the OPEC Fund has indicated its willingness co-finance about USD 10.340 million and around USD 0.53 million from the Islamic Network. The beneficiaries are expected to make in-kind contributions of about USD 2.217 million, and the Government of Jordan is expected to finance all applicable taxes, and duties, as well as the salaries of Government employees, estimated at about USD 9.914 million. The cost of the project is therefore roughly estimated at about USD 34.046 million, without the addition of a GEF contribution. Loan negotiations are scheduled for October/ November 2004.

38. The MOPIC has confirmed that ARMP-II is among the high priority Public Investment Programmes of Jordan and has allocated JOD 0.6 million (USD 0.85 million) from its own resources to continue ARMP-1 activities in Fiscal Year 2004 (1 January-31 December), in order to bridge the financing requirements between the closing date of Phases 1 and the start-up of Phase 2.

### **Gaps in the Baseline - Barriers to Sustainable Land Management**

39. The design of ARMP-II specifically addresses issues which can lead to improving the livelihoods of the target groups, mostly by increasing production. They include specific activities which aim to reverse the effects of land degradation and to promote the more appropriate use of water for supplementary irrigation at the local level. However, it is possible, and desirable, to extend these activities to address wider issues of sustainable land management which can have national implications in terms of demonstrations and replication. Such an approach would be welcomed by the MOA, as it would help to realise the Ministry's long term strategic objectives in terms of establishing practices for sustainable land management in the degraded upland areas throughout the highlands of Jordan. In addition, the design does not attempt to influence policy makers directly (although the results can have some influence on the poverty alleviation policies). Finally, while the internal monitoring which takes place is intended to assess impacts on the livelihoods of project beneficiaries, it will not specifically record the impacts of project activities on the physical environment.

40. At the national level, there are a number of other factors which would be appropriate to consider in a GEF alternative strategy. These are:

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<sup>9</sup> This component relies on GEF funding.

- **The Greater Integration of Land and Water Resource Management.** The optimisation of water resource management is a key factor in development planning, and this is clearly recognised in the NAP. GOJ's ambitions to increase agricultural production and productivity rely on balancing water use in agriculture with the increasing demands of a growing population. While this problem is not new, strategies and legislation have so far failed to make any decisive headway and there is an urgent need, within the overall framework of addressing land degradation, to re-emphasise the vital aspects of protecting and controlling water resource use and linking this to agricultural targets. This would be fostered in the full project by supporting activities which required complete integration of land and water resource management, and promoting coordination between the relevant authorities and the users.
- **Socio-Economic Factors.** The integration of socio-economic and human dimensions of desertification is crucial if there is to be success in reversing land degradation and mitigating threats of climate change and variability in precipitation. At present the linkages between socio-economic and cultural aspects which affect degradation are acknowledged, but appear to be quite weak. One area which needs to be given special emphasis in this regard is the role of women - degradation of land exerts additional pressure on women by increasing their workloads and impinging on their health.
- **Participation of local communities.** GOJ development policies increasingly underline the need for community participation, and it is now incumbent on planners to ensure that communities are fully involved in all stages of development programs. However, although a number of NGOs have been working with communities on social development issues, there is little experience (except in the *badia*) with linking this to addressing land degradation. The requirement is to test approaches for adapting participatory principles to local circumstances.

**Environmental Monitoring Systems.** At present there is no national agreed system of environmental monitoring, despite the recognition by both the MOE and the MOA of the need to develop such a system (identified in the NAP and the National Strategy for Agricultural Development) to respond to commitments made under the Conventions. The requirement is to start by identifying those ranges of indicators most applicable to Jordan, then determining how they can be measured, and by which organisations. This task will need external support. At this early stage the broad project indicators will include, among others :

- ✓ *Strengthened coordination mechanisms and inter-sectoral linkages between all actors*
- ✓ *Strengthening institutional and human resource capacity,*
- ✓ *Enabling environment created for implementation and replication of proposed project interventions by strengthening policy, regulatory, and economic incentive frameworks*

- **Capacity Building.** Inadequate capacity to implement the environmental agenda described in the NAP has been identified by a number of sources. Support for capacity building is either being provided or is promised from a number of donors, but nevertheless this remains a crucial area if the agenda is to be accelerated. This should not be seen as being solely for MOE, as appropriate capacity needs to be spread throughout the agencies involved in order to ensure appropriate management of existing natural resources for the conservation of biodiversity, watershed protection, sustainability of production and agricultural development etc. The NCSA programme

(funded by UNDP, see paragraph 80) should provide an assessment of the overall shortfall in capacity.

The NAP identifies the extensive nature of the shortfall in capacity, suggesting key areas in which capacity and knowledge needs to be developed are:

- The use and management of natural resources, to support research activities and adoption of modern techniques pertinent to combating the varied factors of desertification, enforcing legislation and enhancing the role of the private sector, women and the participatory role of stakeholders.
- Loss of natural plant cover and biodiversity in rangelands,
- Indigenous knowledge of local inhabitants.
- Effective techniques to combat soil pollution and rehabilitation techniques of polluted land resources.
- Training of trainers in land management.
- Environmental legislation and its socio-economic implications
- Updating the knowledge and enhancing the experience of specialists dealing with combating desertification at the national level, pertinent to distribution, cause, significance and mitigation of the main factors of desertification.
- Environmental Impact Assessment for projects established in areas prone to degradation
- Use of Modern Remote Sensing Techniques for Efficient Management of Land Resources
- Farming Systems Appropriate for the Land and Water Resources in Jordan.
- Salinization and pollution of the soils.
- Training of farmers to take up new and improved methods of land use

## THE GEF ALTERNATIVE

### *Rationale and Objectives*

41. The **rationale** for GEF support is to provide more impetus for pursuing the Government's environmental agenda and to support the Government in meeting its commitments under the UNCCD. The overall goal of the GEF project would be to:

***Enhance the enabling policy, regulatory and incentive frameworks that govern natural resource use, promote integrated land use planning and mainstream SLM in national planning frameworks.***

While this goal is expressed in broad terms, the intention is to support practical applications that will allow the MOE to develop a *modus operandi* for realising its environmental mandate vis-à-vis implementation of the UNCCD and developing working arrangements with the many stakeholders already active in specific areas. As a starting point, this would be in conjunction with the Ministry of Agriculture, by building on the objectives and activities included in the second phase of ARMP-II, but this will be extended during the course of the project life.

42. The GEF project would have a number of **objectives**. These objectives – to be further refined in the PDF-B stage – would include:

- Enhancing the application of sustainable land management practices, by widening the scope and ambitions of the conservation activities included in the second phase of the IFAD-supported Agricultural Resource Management Project so as to consider additional environmental concerns, and identifying a range of appropriate incentives to encourage uptake.
- Enhancing integrated water resource management and application in the project area as tool for SLM including water harvesting, dams, spring water, and waste water reuse.
- Supporting the development of an environmental monitoring system at the national and project levels, so as to (i) enable GOJ to assess the contribution of environmental programs to global impacts, and (ii) allow the identification of suitable practical and cost effective indicators at the project level.
- Extending public and government awareness programs and initiating a policy dialogue to reinforce the emphasis placed on SLM issues and to influence Government policies and legislation and corresponding allocation of national resources.
- Supporting the development of coordination mechanisms to ensure that an efficient and cost effective inter-sectoral planning system is developed, by providing capacity building to help realise the above aims.

### ***Project Strategy and Approach***

43. The objectives would be realised by a concerted program of actions directed through the Ministries of the Environment and Agriculture. These two Ministries would not implement all activities, but rather they would be the conduits for funding which would be directed to the most competent implementing agency, whether they are NGOs, Universities, local community organisations or private sector actors. The Ministries' role, especially for MOE (because MOA has more implementing capacity) would be mostly to act as facilitators of the project and to promote inter-sectoral linkages.

44. The whole project would be viewed as a strategic initiative to test the arrangements for developing and enforcing a more comprehensive and coordinated approach to pursuing sustainable land management. As such, a key factor would be to draw on and involve those organisations already active in the field, both to ensure their experience is harnessed in developing appropriate solutions, and also to avoid duplication of efforts. This would be part of the management of the coordinated approach, and would be entrusted to coordination committees. Once the arrangements have been shown to work effectively with MOA, they could be extended to other "data suppliers".

45. Local community actions would be given a central role in the project. The concept would be to enable local communities to translate their increased awareness into small-scale initiatives which address land degradation issues. Hopefully many of these initiatives would result in increased incomes, or other benefits valued by the communities. To achieve this, the soil and water conservation activities in the baseline project would be enlarged and incentives provided (this builds on the positive experience of phase I and utilises the project staff's

demonstrated skills). By closing the loop between raising awareness and enabling the communities to actually undertake and benefit from such activities, local empowerment will be fostered and the chances of sustainability greatly increased. This process will require a learning stage to develop an appropriate methodology. Successful experiences, once proven, would be used as demonstrations.

46. In addition, the GEF funding would permit the extension of ARMP-II's proven soil and water conservation measures onto public land and possibly other areas where land tenure is under question, in order to pursue a comprehensive watershed approach, which proved difficult to achieve in phase I. This would reinforce the communities' involvement in natural resource management at the local level and greatly increase the resilience of the ecosystem and its functions.

47. The project would be developed in detail during the PDF-B stage, which would involve a participatory approach, hence the exact nature and scope can only be considered indicative at this stage. The GEF-funded activities would fall into two categories, firstly those incremental to ARMP-II components and secondly those additional activities intended to generate benefits at the national level, and for which there is no baseline in ARMP II. This is discussed and illustrated below.

### **Expected Outcomes and Incremental Benefits**

48. The main outcomes and incremental benefits expected from the full GEF project are summarised in Box 2.

#### **Box 2: Incremental Outcomes of the GEF Support**

- A strengthened and more unified approach to halting and reversing land degradation issues as a result of mainstreaming sustainable land management approaches in national planning frameworks
- The strengthening of coordination mechanisms and inter-sectoral harmonisation for achieving sustainable land management.
- An overall environmental monitoring system which is consistent with international standards and practices
- Replication of local conservation activities in other areas within Jordan and for the project to function as a demonstration to the region.
- Addressing NAP priorities with respect to mitigating land degradation.

49. For the Ministry of Agriculture, involvement in the GEF project would lead to a reinforcement of the Ministry's role in internalising and promoting sustainable land management practices and addressing issues in land degradation, especially in the productive Highland areas. This would allow the MOA to further expand its conservation operations based on the experience and knowledge gained. Significant incremental benefits would therefore arise as this expanded agenda and focus on sustainable land management practices is extended. As well as this the project would facilitate MOA playing a full role in the national conservation agenda – demonstrably contributing to assessing environmental impacts. For the Ministry of Water Resources the project would provide the avenue to closely integrate the planning of water resource management with the MOA and would greatly strengthen the processes of coordination. In addition MWR would be supported in extending its monitoring

capabilities for ground water and in enforcing appropriate legislation. In the course of realising these outcomes, and as important steps in the process, the mandate of the MOE would be reinforced and a comprehensive environmental monitoring system developed at the national level

50. The mainstreaming of sustainable land management approaches and their replication would lead to Global benefits in terms of carbon sequestration and in particular, the maintenance of biological diversity. This would be achieved by a multi-dimensional approach so that the conservation of natural resources was integrated into the social and economic dimensions. By emphasizing an integrated cross-sectoral approach, the project would address many of the goals of global environmental conventions, including United Nations Convention to Combat Desertification (UNCCD), United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity (CBD). Overall, the national and global benefits are expected to meet objectives of OP15 as well as other GEF OPs. This is illustrated in Table 1.

**Table 1: Potential Global and National Benefits from the GEF Alternative**

<b>Benefit</b>	<b>Global</b>	<b>Local</b>
Land degradation reversed (OP15, OP1)	✓	✓
Protection of ecosystem (OP12, OP1)	✓	✓
Protection of water resources (OP2)	✓	✓
Increased carbon storage (OP7)	✓	✓
Monitoring system established	✓	✓
Mainstreaming of the environmental agenda	✓	✓
Raised environmental awareness		✓
Promotion of sustainable livelihoods		✓
Promotion of alternative livelihood opportunities		✓

51. To achieve these outcomes capacity building would be necessary for the two Ministries, resulting in a degree of institutional strengthening which would pave the way for future progress. This benefit would have national implications as well, assisting other organisations concerned with environmental monitoring and protection, i.e. not just benefiting the two ministries. Finally, the outcomes would help to realise a number of aspirations expressed in the NAP.

52. Without the incremental GEF funding it is considered unlikely that the Government's development programs would result in large scale and sustainable improvements in addressing land degradation issues.

### **Activities Proposed for the Full GEF Project**

53. The GEF-funded objectives would be realised through six inter-related activities, as described below.

#### **Activity 1: Community Awareness and Mobilisation**

54. The intention would be to support the work of the ARMP II community development staff to facilitate the extension of their activities to include community sensitisation for environmental conservation and to identify locally preferred options for small-scale conservation activities not funded under ARMP-II. The outcomes sought from this support

would include increased awareness among communities of desertification issues, increased local capacity for managing land degradation issues and field activities, including reforestation. The GEF funding would support the expanded operational activities of the Community Development Units by funding equipment and meeting operational costs (plus capacity building, but this is included under a separate cost head). The support would include developing feedback mechanisms to encourage community participation and also to capture local preferences and knowledge. These feedback mechanisms would include the development of participatory monitoring systems.

55. The local level activities would be complimented at the national level; the intention would be to selectively support the program of the Environmental Education and Information Committee (EEIC) of the MOE. This committee has an outline program consisting of several activities to promote national awareness: during the PDF-B stage assessments would be conducted to understand the effectiveness of the activities already undertaken and to develop a plan for their enhancement. Possible activities could include farmer-to-farmer field visits, commissioning TV and radio programs, production of media such as films, posters etc and local and national level campaigns and workshops. The national awareness campaigns and local level community mobilisation activities would be mutually reinforcing: for example demonstration areas and conservation schemes developed through ARMP II would be given wider publicity.

56. The outcome sought from this activity would be enhanced awareness of the costs of degradation and greater public consensus for actions required. This would create the impetus for adopting and emphasising SLM in government planning frameworks and consequently an increase in the allocation of national resources.

## **Activity 2: Sustainable Land Management Approaches**

57. The design of ARMP II includes a number of soil and water conservation activities, partly funded by the project and partly funded by farmers' contributions. The need is firstly, to extend the range of activities so that beneficiaries (individuals and groups) can choose to undertake further activities which contribute to sustainable land and water management in its widest sense, and which may come from traditional practices. The concept would be to extend the range of local small-scale initiatives to allow for a multi-dimensional approach to address land degradation issues. Secondly, in order to comprehensively implement a watershed approach to conservation, GEF funds would be made available for soil and water conservation activities on state and other lands that connect the areas of private land protected by ARMP II. This would counter the piecemeal approach which has been a problem under ARMP I and would facilitate sustainable land management of the entire watershed and enhance environmental services of the ecosystem.

58. To identify new and traditional conservation practices will require some guidance and adaptive research to verify the potential of such activities in terms of sustainability and income generating potential. Some assistance with marketing would also be appropriate (this to cover processing and general analysis of market potentials for goods produced). Examples quoted from experience during ARMP-I (which the project could not support at the time) are the rehabilitation of community wells and reservoirs, the development of parks and amenity areas and small-scale and high quality livestock production. The outcome from this activity would be the development of community and group managed schemes showing best practices

and increased income-generating opportunities that contribute to restoring the integrity of the ecosystem.

59. By publicising these results and disseminating the lessons learned these environmentally sound approaches could be replicated. During the PDF-B stage the purpose would be to identify and describe eligible activities and to determine appropriate replication mechanisms. Activities proposed under sustainable land management would mostly be incremental to the Natural Resource Management component of ARMP-II, with some overlap with the Agricultural Development component.

### **Activity 3: Integrated Water Resource Management**

60. In ARMP-I the consequences of promoting more intensive agricultural production resulted in the greater use of water resources, including possibly drawdown on the groundwater, whilst the potential savings in water from the conservation activities on private and public land were assumed, but the project was unable to measure or estimate in any way the actual net impacts. In phase II the project will continue to promote water harvesting measures, in terms of cistern and mini-dam construction and will also fund spring protection. However, the wider consequences of these actions on the water balances will remain unclear unless specific measures are taken to assess the overall effects of these actions. The responsibility for such assessments lies with the MWI. GEF funds will therefore be allocated to allow for the incremental monitoring which will be required to assess these impacts in detail, in order to better understand the processes involved and to allow for the modification of project activities, if necessary. Such assessments are not only of importance nationally but are vital before project activities can be replicated with confidence. The overall aim is to ensure integrated water resource management.

61. These activities will be treated as incremental to the ARMP-II component of Resource Management and will be implemented by MWI, working in close collaboration with ARMP-II project management and the local office of MOE.

### **Activity 4: Environmental Monitoring**

62. This activity is not only important in its own right, but is the mechanism for realising the goals of mainstreaming SLM strategies and fostering inter-sectoral linkages and coordination. It would be supported at the national and local levels.

#### ***At the local level***

63. Environmental indicators would be introduced into the M&E system of ARMP-II. This would be on a wide-ranging experimental basis to allow for the determination of preferred indicators and methods of measurement over the course of project implementation. The intention would be to measure project achievements in terms of environmental impacts as well as the socio-economic, physical and financial indicators presently used. The introduction of this project-level monitoring (which can be seen as helping MOA to realise Program 5 of its National Strategy for Agricultural Development) would require capacity building for staff and awareness raising for the beneficiary communities. The selection of a range of possible indicators, plus the methods for measurement, would be agreed during the PDF-B stage; subsequently, the indicators would be refined and those not found useful discarded. The outcome would be an environmental management framework, which would become part of the management tools for ARMP-II. Through ARMP-II the MOA would obtain a range of

indicators to be extended in other projects, along with careful specifications of how they should be measured and the costs involved.

64. GEF funds would support the incremental costs of developing the environmental management framework. This would include various research activities (possibly by NCARTT or local Universities) plus upgrading the skills of staff and providing additional equipment as necessary. The specification of these indicators would be agreed with MOE to ensure they were also useable in the national monitoring system.

***At the national level***

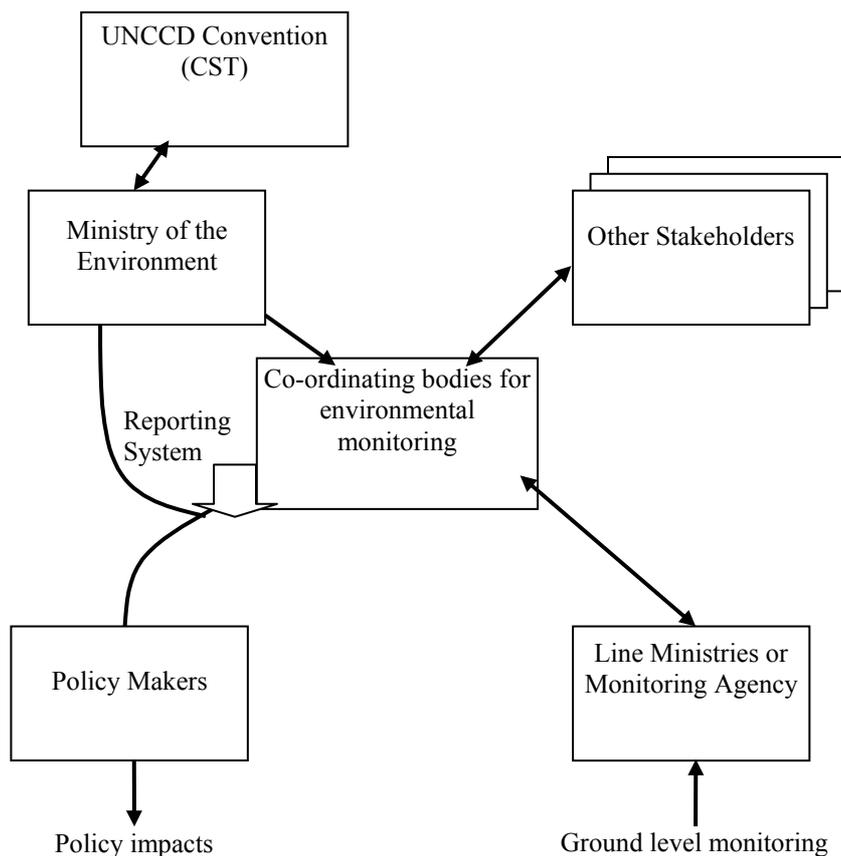
65. This would encompass activities by a number of agencies. At the national level the intention would be to: (i) define a comprehensive but cost effective set of monitoring indicators, along with specific and rigorous methods of estimation; and (ii) establish a network of agencies responsible for undertaking monitoring on a regular basis. This task is a core responsibility of the MOE, but would be undertaken through extensive consultation and participation with interested local organisations and other Government bodies. Care would be taken to review the extensive information available and generated from global experience in undertaking similar tasks. Selection of indicators would need to be based on judgements of national needs combined with technical skills available and likely costs. Essentially measurements of indicators would be contracted to third parties, although they may need to be supported by additional funding to obtain and/or develop the skills and technology for these tasks.

66. The outcome sought would be a system of reporting on these indicators to be used in national planning and be able to contribute to national and global assessments.

67. While identifying and describing these indicators it would be the MOE's responsibility to fully involve line Ministries and other agencies which would be the data providers for the database: such agencies will not contribute to such a system unless it is directly useful to them. Hence, the challenge is to define indicators which are useful in management information systems (MIS) at the project/operational level, but which are accurate enough to be components of a scientifically-based national monitoring system.

68. During the PDF-B, the requirements of this task would be detailed, the actors identified and a prototype framework developed into which the numerous pieces would fit. With relation to the MOA, they would play an important role in working closely with the MOE in identifying and defining the indicators as part of the PDF-B phase. This would allow the monitoring system to be trial tested.

69. As part of these processes it may be necessary to consider establishing or strengthening the sub-national level of monitoring (i.e. at Governorate or District level, or by theme). This is a legitimate consideration to be taken into account during the construction of the national monitoring system. Overall, the monitoring system being established might be represented as:



### Activity 5: Capacity Building/Institutional Strengthening

70. Analysis of the baseline scenario indicates the need for extensive capacity building, and this supports findings from the NAP. In the case of MOE, this would be to facilitate discharging its environmental mandate, while in the case of MOA it is to allow the staff of ARMP to extend their roles and skills<sup>10</sup>. In both cases some institutional strengthening will also be required. In the case of MOE this may partly be addressed by a re-engineering process which is due to begin soon, while for MOA (which is also due to be re-organised soon) the new skills required may need additional capacities to be created. In addition, significant capacity building of the participating communities would be required to facilitate awareness raising and to foster community ownership over sustainable natural resource management. Organisations undertaking environmental monitoring would also be eligible for support under this heading - the goal is to enhance the enabling environment both within and outside the government.

71. To address these issues a needs assessment would be undertaken as part of the PDF-B design phase, and as appropriate, co-ordinated with similar activities of other donors. Capacity building will be viewed as a cross-cutting activity, which will facilitate the successful implementation of other components.

<sup>10</sup> In the Stakeholder workshop conducted as part of the participatory preparation of this GEF application, MOA staff expressed little knowledge of the Agenda 21 Conventions ratified by GOJ or of the UNCCD NAP.

## **Activity 6: Project Coordination Unit**

72. The full GEF project would be guided by the Steering Committee for ARMP II, with additional members incorporated as appropriate to the stage of implementation. To manage the day-to-day arrangements of the GEF activities a small Project Coordination Unit (PCU) would be established comprising of project staff and representatives from MOPIC, MOE, MWI and MOA. As implementation arrangements for ARMP-II will be affected by the new decentralisation policy - the implications of which are still to be determined - the appropriate arrangements for coordination and location of the PCU will be made during the PDF-B design phase. The PCU would have a small staff complement since implementation of the activities would essentially be by third parties. However, during the PDF-B stage one task would be to develop a logframe for the full GEF project, including monitoring indicators geared to achieving project objectives; the PCU would report on progress using these indicators, and would also be able to commission focused evaluation studies. These assessment criteria would form an important source for guiding and adjusting project implementation. At the field level, GEF funded incremental activities would be implemented directly by ARMP II Units and staff.

73. The GEF funds would support the operational and overhead costs of the PCU, with exception of staff costs, which would be GOJ contributions. See Implementation/Execution Arrangements for further details on proposed mechanisms.

## **Linkages and Incremental Costs of the GEF Alternative**

74. The GEF alternative will be firmly based on ARMP II as a baseline. The incremental activities to achieve wider national and global benefits would add to the existing ARMP II components as well as additional components developed for supporting mainstreaming activities. This is illustrated in Table 2. While ARMP II is at the stage of final design/loan negotiation, activities for the GEF alternative are only at the stage of being identified. A major task during the PDF-B would therefore be to detail the costs involved: at this stage they can only be considered indicative.

**Table 2: Incremental Cost Matrix**

ARMP II Component	Baseline (ARMP II without GEF)**	Alternative (with GEF)	Increments***	Lead Agency
<b>1. Community Development</b>				
<i>i.) Community Participation &amp; Capacity Building</i>	<ul style="list-style-type: none"> <li>Establishing a participatory approach, working with community bodies to form community action plans and annual work programs.</li> <li>Forming community development teams</li> <li>Training and study tours</li> </ul>	<ul style="list-style-type: none"> <li>Environmental awareness raising at the local level</li> <li>Community education and training programs for SLM</li> <li>Participatory Monitoring</li> </ul>		MoA
<i>ii.) Strengthening of Women's Development Capacity</i>	<ul style="list-style-type: none"> <li>Developing full involvement of women from the planning stage and accommodation of special needs</li> <li>Literacy Program</li> <li>Support for MOA Gender Unit</li> </ul>	<ul style="list-style-type: none"> <li>Operational support for expanded operations of the CDU</li> </ul>		
<b>Component Costs*</b>	<b>2,113</b>	<b>2,768</b>	<b>655</b>	
<b>2. Resource Management</b>				
<i>i.) Soil Conservation Measures</i>	<ul style="list-style-type: none"> <li>Farm planning</li> <li>On-farm initiatives for soil conservation, stone walls, contour furrows etc.</li> <li>Off-farm measures to protect wadis, prevent soil erosion and protect threatened arable areas</li> </ul>	<ul style="list-style-type: none"> <li>Identification of indigenous SWC strategies</li> <li>Expand range of SLM activities available to communities</li> <li>Planning and implementation of conservation activities not funded through ARMP</li> </ul>		MoA/MWI
<i>ii.) Water Resources Development</i>	<ul style="list-style-type: none"> <li>On-farm cistern construction for water harvesting</li> <li>Off-farm spring rehabilitation and mini-dam construction</li> <li>Promotion of WUAs</li> <li>Research into and demonstrations for waste water use</li> </ul>	<ul style="list-style-type: none"> <li>Expand SLM activities onto state lands to complete watershed approach</li> <li>Research into environmental management best practices</li> <li>Incremental monitoring of water resources to assess overall impacts (MWI activity)</li> </ul>		
<b>Component Costs*</b>	<b>19,958</b>	<b>23,888</b>	<b>3,930</b>	
<b>3. Environmental Conservation &amp; Management</b>				
<i>i.) National Environmental Monitoring</i>	<ul style="list-style-type: none"> <li>Nil</li> </ul>	<ul style="list-style-type: none"> <li>Define a national environmental monitoring system (requirements, mode of operation and cooperation with other institutions)</li> <li>Identify a comprehensive but cost effective set of monitoring indicators, along with specific and rigorous methods of estimation.</li> <li>Establishing a network of agencies responsible for undertaking the monitoring on a regular basis</li> <li>Establish dissemination mechanism and regular reporting formats to policy makers</li> </ul>		MoE
Sub-Component Cost	0	1,900	1,900	
<i>ii.) National Awareness Raising</i>	<ul style="list-style-type: none"> <li>Nil</li> </ul>	<ul style="list-style-type: none"> <li>Analysis/survey of awareness levels</li> <li>Support selected programs of the EEIC</li> </ul>		MoE
Sub-Component Cost	0	500	500	
<i>iii.) Capacity Building</i>	<ul style="list-style-type: none"> <li>Nil</li> </ul>	<ul style="list-style-type: none"> <li>Needs assessments, training, workshops etc.</li> </ul>		MoE

Sub-Component Cost	0	613	613	
<b>Component Costs*</b>	<b>0</b>	<b>3,013</b>	<b>3,013</b>	
<b>4. Agricultural Development</b>				
<i>i.) Orchard Development</i>	<ul style="list-style-type: none"> <li>Planting of tree crops in suitable areas</li> <li>Diversification of suitable varieties</li> <li>Technical assistance &amp; training</li> </ul>	<ul style="list-style-type: none"> <li>Support for widened agenda of planting indigenous species and other production activities not covered by ARMP</li> <li>Additional support for analysis of market opportunities</li> </ul>		MoA
<i>ii.) Agricultural Extension</i>	<ul style="list-style-type: none"> <li>Strengthen the planning and implementation capacity of the Agricultural Directorates to provide technical, financial and marketing information</li> <li>Household livestock program</li> <li>Institutional strengthening to provide the staff necessary to support the project</li> </ul>			
<i>iii.) Agricultural Research</i>	<ul style="list-style-type: none"> <li>Support regional centres of NCARTT to develop and disseminate best practices</li> <li>Promotion of Vetch</li> </ul>			
<b>Component Costs*</b>	<b>3,472</b>	<b>3,669</b>	<b>197</b>	
<b>5. Rural Roads</b>				
Benefits	<ul style="list-style-type: none"> <li>Construction of 100km of farm to market roads</li> <li>EIAs</li> </ul>	<ul style="list-style-type: none"> <li>Nil</li> </ul>		MoW
<b>Component Costs*</b>	<b>2,613</b>	<b>2,613</b>	<b>0</b>	
<b>6. Rural Financial Services</b>				
<i>i.) Rural Credit</i>	<ul style="list-style-type: none"> <li>Assisting ACC in introducing rural finance best practices at its three project area branches on a pilot basis</li> <li>Assisting these branches to reach the project target population effectively and efficiently</li> </ul>	<ul style="list-style-type: none"> <li>Nil</li> </ul>		ACC
<i>ii.) Microfinance</i>	<ul style="list-style-type: none"> <li>Supporting income generating enterprises to be undertaken by the target groups</li> <li>Strengthening of cooperatives and community development associations</li> </ul>			
<b>Component Costs*</b>	<b>2,423</b>	<b>2,423</b>	<b>0</b>	
<b>7. Project Management</b>				
	<ul style="list-style-type: none"> <li>Expansion of support framework into the new project areas</li> <li>Transfer project activities to Agricultural Directorates</li> <li>Support for launch and start-up workshops, annual review workshops, budget preparation and a project implementation manual.</li> <li>Ongoing training of project staff</li> </ul>	<ul style="list-style-type: none"> <li>Expansion of the M&amp;E system to include environmental indicators</li> <li>Staff training on environmental issues</li> <li>Support for incremental operational costs</li> </ul>		MoA
<b>Component Costs*</b>	<b>2,739</b>	<b>3,394</b>	<b>655</b>	
<b>TOTAL COSTS*:</b>	<b>33,318</b>	<b>41,768</b>	<b>8,450</b>	
GoJ Contribution included in Total Costs*:	9,032	11,032	2,000	

\*Costs in '000 US\$ and including physical and price contingencies \*\*Baseline Costs from ARMP II Appraisal Report \*\*\*Increments include estimated GOJ contribution

### **3. SUSTAINABILITY**

75. The key to sustainability of the GEF funded activities is the elevation of the national priority assigned to land degradation. Currently, GOJ has expressed willingness to adopt an approach to development through its national planning which recognises the issues of environmental degradation, but these have mostly been approached in a piecemeal fashion through projects implemented by individual Ministries and other agencies. What is being sought is to take this agenda to a higher level by creating an overall integrated and more uniform approach. This approach has the support of Government but the specific mechanism still needs development. Given the commitment of Government (best illustrated by the formation of the new MOE), the GEF project would provide the opportunity to test an approach based on the Government's own preferred solutions as described in the NAP. Sustainability, in terms of the institutional approach will be achieved once an inter-sectoral planning system is developed and its efficacy demonstrated in addressing land degradation issues. It is envisaged that a more coherent and integrated planning process will lead to positive long-term impacts.

76. What is being sought through sustainable land management is a set of principles and practices that address land degradation, either halting or reversing the inherent processes, and that lead to sustainable levels of production. There are many facets to be considered in this respect, not least the human actions which have added to the degradation processes. To be effective, the participants in the project will need to be convinced of the overall socio-economic benefits to them, as well as, the benefits which may accrue nationally. Linking the project to ARMP II is very promising in this respect, considering that ARMP I has a history of generating financial and other benefits for participating households, and to a certain extent, communities (through the spring rehabilitation program). The incentives therefore exist (but need extending and upgrading) to mobilise and involve communities in a wider program. Essentially, MOA has demonstrated the ability to manage a process of change in attitudes, resulting in more sustainable land management practices and more assured incomes; building on this foundation will lead to long-term benefits.

### **4. REPLICABILITY**

77. Replicability is one of the intended aims of the GEF project and will be a measure of its success. This is both in terms of developing the coordination mechanisms to allow replication of working practices at the national and local levels, and also in terms of replicating packages of beneficial land management practices throughout the degraded Highlands. The lessons learned from the GEF funded activities would be widely applicable in similar ecosystems throughout Jordan and the region. The project will be linked to ongoing regional programmes such as the Regional Programme for Sustainable Development of the Drylands of West Asia and North Africa (WANA), for disseminating lessons learned and facilitating study tours. In the past, soil and water conservation activities in the Highlands have been supported by international donors, including WFP and GTZ, and there would appear to be potential for seeking further funding for replicating the more comprehensive approach being developed through ARMP II.

## **5. STAKEHOLDER INVOLVEMENT**

78. ARMP-II would target around 22 300 rural households or 134 000 inhabitants. In light of the social and economic characteristics of the population, the target group would be the poor men and women within the following three categories: (i) small and medium farmers; (ii) landless with insecure income and little or no production means; and (iii) other disadvantaged groups

79. As described previously, considerable emphasis would be placed on involving a wide range of stakeholders, drawing in agencies, organisations and communities active in conservation. This process has already started with a participatory approach being taken to preparation of the NAP and the convening of a National Forum. However, the link to ARMP-II would also provide access to participating communities concerned with the practicalities of undertaking sustainable development projects, while the public awareness campaigns would include feedback from many quarters. GOJ's decentralisation policy is likely to result in the fuller involvement of local/area authorities as well. The challenge would be to organise this involvement in a logical fashion through forming appropriate networks and coordination mechanisms. This would be a major task for the Project Coordination Unit which would be started early in the PDF-B in order to gain inputs into the design of the full project: the aim is to undertake a stakeholder analysis as one of the first activities. In addition, resource mobilisation considerations would require that donors were kept informed of activities and progress. The GEF PDF-B design phase would link with the Global Mechanism's partnership building and resource mobilisation activities.

80. Specifically, at the national level key stakeholder involvement would come from the Ministries of Planning and International Cooperation (MOPIC), Environment (MOE), Agriculture (MOA) and Water Resources (MWRI); The Higher Council for Science and Technology, The Royal Council for the Conservation of Nature (RSCN and the Royal Geographic Centre. Additional national level support would also be expected from university groups, especially from the Department of Desert Studies and Desertification Control (Yarmouk University) and from Jordan University. At the local level stakeholders would include municipalities, villages and community groups.

## **D – FINANCING**

### **1. Financing and Co-financing Plan**

81. The PDF-B design phase would fully define the activities to be undertaken during the full-scale project, including developing detailed costing. ARMP II is due to be financed by IFAD, OPEC, the Islamic Network, GOJ and the beneficiaries. Donor interest in supporting the full GEF project (and/or the PDF-B stage) has been positive, and it is considered likely that, as well the agreed co-financing, it will prove possible to raise additional finances specifically for GEF activities from donors already active in Jordan. On this basis, the estimate of funds sought from GEF Sec would be US\$6.45 million, for the duration of five years. The tentative breakdown of costs is shown in Table 2.

**Table 3. Full Project Costs**

<b>Donor</b>	<b>US\$ 000,000s*</b>
GEF	6.45
IFAD **	11.570
OPEC	10.270
GOJ (i)	9.900
GOJ (ii)	1.100
Beneficiaries***	2.430
<b>Total</b>	<b>39.290</b>

- (i) GOJ contribution to ARMP
- (ii) Estimated GOJ contribution to GEF
- \* Costs including contingencies
- \*\* Of which US \$200,000 is grant
- \*\*\* Assumes no increase in beneficiary contribution for GEF activities

82. The design phase will require PDF-B resources from GEF of \$350,000 with a contribution from GOJ estimated at \$30,000. IFAD and the Global Mechanism has contributed respectively \$20,000 and \$25,000 to fund the preparation of this submission, In addition \$220,000 of IFAD's resources have been utilised in the preparation of ARMP II and formed the basis of this GEF proposal. GM will contribute an additional \$25,000 to co-finance the PDF-B phase, and further potential co-financing can be anticipated, possibly from JICA and maybe from GTZ and DFID. Discussions on the extent and scope of this assistance will continue while the proposal is being considered by GEF. The full PDF-B design phase is estimated to require between 12-15 months. The tentative budget for the PDF-B is shown in Table 4.

**Table 4. PDF-B Budget Estimates**

<b>Donor</b>	<b>US\$ 000s</b>
GM	50
GEF	350.0
IFAD	240.0
GOJ	30.0
Co-financers	35.0
<b>Total</b>	<b>705</b>

## 2. Cost Effectiveness

83. A major purpose of the full project is to strengthen collaboration and coordination of government activities, which will result in an improved enabling environment. An outcome of this will be the more efficient use of resources. This can also be viewed from the aspect of halting or reversing degradation processes, which are presently leading to decreasing productivity and production levels. Although estimated to be significant, there is no definite cost assigned to land degradation with regard to the Jordanian economy; arriving at this cost would be possible once the umbrella environmental monitoring system is put into place.

84. The rationale for the continuation of ARMP into a second phase lay not only in the socio-economic and physical benefits achieved, but also because a re-estimation of the economic rate of return (ERR) at project closure showed that in the first phase the ERR was over 30% (three times more than estimated at design). This indicated that the project had been extremely cost effective and was a worthwhile investment for the people and government of Jordan. The wider benefits accruing from the GEF alternative are more likely to enhance, rather than detract from, the cost effectiveness.

## **E – INSTITUTIONAL COORDINATION AND SUPPORT**

### **1. Core Commitments and Linkages**

85. As a GEF Executing Agency with “expanded opportunities” IFAD will provide oversight of project implementation. The expanded project objectives through the inclusion of GEF activities are highly compatible with IFAD’s country strategy for Jordan and will help the Fund to realise these goals. The IFAD strategy has three key medium term ambitions: (i) poverty reduction, with special emphasis on social and economic empowerment of the rural poor, including women; (ii) protection of the environment, with special emphasis on conservation of natural resources, soil, water and rangelands; and (iii) institutional building for good governance with special emphasis on the public institutions providing support to the rural sector. IFAD places a high priority on the protection of the environment because of the strong correlation between poverty, rural development and environmental degradation. The target group of IFAD assistance in ARMP is poor farming families, the landless and rural women, to be reached through collective and participatory approaches. The GEF-funded activities would fit seamlessly into this program, and would also facilitate IFAD having an influence on policy, which is a stated aim of IFAD’s overall Strategic Objectives.

The World Bank has been involved in numerous projects in Jordan, mostly concerning economic restructuring; however, a stated priority is resource conservation with a focus on water. The Bank is presently the lead agency for four GEF projects concerned with biodiversity (2), climate change and international waters. Also, UNDP has been a key player in the environmental field in Jordan, supporting programs with a bearing on dryland management. UNDP’s involvement spans projects concerning water resources management, biodiversity conservation, climate change, reserve protection and management and a Debt Swap initiative. UNDP also manages the GEF Small Grants Program, which has supported some 100 NGOs and local communities with initiatives to tackle a range of environmental problems at the grass roots level. The UNDP-funded National Capacity Self Assessment (NCSA) project to identify and assess critical capacity limitations for addressing global environmental issues is soon to commence. This project will focus on cross cutting issues within the three UN conventions, as well as promote resource mobilization and coordination. Other UNDP initiatives with which IFAD will establish linkages are: Conservation and Sustainable Use of Dryland Agro-biodiversity in Jordan, Watershed Management in the Northern Badia Region and Development of Water Resources in the Badia Region as an example of Arid Regions. Additional opportunities for collaboration with UNDP may be identified during the PDFB phase of the project, especially in the field of integrated approach to environmental quality and poverty alleviation.

86. The greatest possibilities for synergy with the present proposal are with UNDP, not only because of NCSA, but also because GEF supported projects addressing biodiversity cover part of the project area.

87. The German Technical Co-operation agency (GTZ) is supporting numerous projects in Jordan, with a special focus on optimising water supplies both for domestic and agricultural use. GTZ also assists in the formation of national information systems for various Ministries as well as working on improving state services. USAID is currently financing two projects in the environment sector, concerned with groundwater monitoring and institutional strengthening (to improve enforcement). JICA is financing various capacity building initiatives in the general area of environmental conservation, while AECI, the Spanish Development Agency, has a strategy of supporting sustainable rural development, including natural resource conservation. There is some potential for cooperation with all these agencies, although only JICA has so far indicated an interest in co-financing.

## **2. Consultation, Coordination and Collaboration between and among Implementing Agencies, Executing Agencies and the GEF Secretariat**

88. 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 potential for establishing linkages or at least collaboration with some of these projects. In particular the UNDP biodiversity projects supporting the Dana Wildlands would be in the project area and might provide lessons in land management. Additionally capacity building activities (again through UNDP) would be a useful source of potential assistance.

89. The Global Mechanism is providing support to the MOE to develop a partnership building and resource mobilisation strategy. Work presently being undertaken includes enhancing existing coordination mechanisms, (e.g. the NCCD and other relevant 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, the GEF project will be presented at the CFP forum as an input reflecting the joint efforts of IFAD and GM with regard to resource mobilisation for implementation of the Convention in Jordan.

## **3. Implementation/Execution Arrangements**

90. Given the current process of restructuring of several Ministries and decentralisation initiatives, it would be most appropriate to develop detailed implementation arrangements during the PDF-B design phase. The most cost-effective and efficient implementation modality will be designed and integrated into IFAD's ARMP II project.