THE ALIGNED NATIONAL ACTION PLAN

TO COMBAT DESERTIFICATION IN JORDAN

2015 - 2020

MINISTRY OF ENVIRONMENT

IUCN

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His Majesty King Abdullah II Ibn Al Hussein

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Foreword by the Minister of Environment

Deserts and arid lands have a distinctive beauty and are closely affiliated with the dynamics of humans and environment which characterized the livelihoods of Jordanians over many centuries. The stereotype image of deserts includes low productivity, scarce natural resources and high temperature. In Jordan, however, there is much more to deserts than such rigidity and paucity. Jordanian deserts are unique ecosystems in their religious, cultural, social, economic and environmental values.

Nevertheless, the past decades saw sustainable arid land management becoming a major challenge, as desertification is increasingly threatening the integrity of ecosystems. To maintain environmental balance, these lands need to be managed sustainably and turned into economically productive areas; especially that desertification constitutes the main environmental problem affecting natural resources in arid and semi-arid lands and semi-arid wetlands. Interaction between natural factors and human-induced activities is identified as the main cause of these lands' deterioration.

Situations of this type emphasized the need for an international commitment to combat desertification, a need that was addressed by the establishment of the United Nations Convention to Combat Desertification (UNCCD) as a principal international instrument to curb land deterioration and promote sustainable land management. When this agreement was open for signature in 1994 Jordan was among the first countries to sign.

Hence, the Ministry of Environment enhanced its commitment to conserve the environment nationally and regionally by developing the National Strategy and Action Plan to Combat Desertification. This includes long term strategies to combat desertification within the framework set by the UNCCD and a vision, logical framework, monitoring program and financial plan; all against the backdrop of the described environmental scene and current desertification situation in Jordan.

Upon that, future programs addressing issues relevant to desertification, local environment and community were designed, and the Government of Jordan, represented by the Ministry of Environment, in collaboration with other governmental and non-governmental institutions, commits to ensure the implementation of the National Action Plan. Sustainable programs for combating desertification and its negative implications were suggested based on best management practices and guidance, local communities' involvement, planning of land use and water management and identifying multisectoral and multi-environmental indicators for long-term and short-term monitoring of desertification.

Sustainable management of land resources and combating desertification require integrated interventions in various sectors, including water, agriculture, energy, urban development and several others. To implement the proposed programs of combating desertification, mitigating collateral impacts and decreasing the concomitant poverty and land degradation, the Ministry seeks to obtain technical assistance from international organizations, technical agencies and other concerned parties. This shall be made possible through a management system based on wide involvement while at the same time maintaining the role of coordinating and evaluating all activities and initiatives targeted at achieving the common objective of sustainable land management and combating desertification.

Here, I would like to express my appreciation to the International Union for Conservation of Nature, The Regional Office for West Asia and in specific Mr Fadi Shraideh and all the local experts that worked together throughout the past year to design in a participatory manner, a national strategy and action plan that meet the actual environmental and socio-economic needs in Jordan. I hope that the National Action Plan will be a cornerstone in policies directed at sustainably conserving the land and managing natural resources for the well-being of this generation and future ones.

Dr. Taher Radi Al Shakhshir
Minister of Environment

Acknowledgments

The Aligned National Action Plan (NAP) to Combat Desertification in Jordan 2015-2020 is the result of a series of consultations with policy makers and stakeholders and extensive research in cooperation with specialists. We would like to express our sincere thanks to all those who were involved for their efforts and insights and to their institutions for supporting their involvement.

We acknowledge with gratitude the guidance and support provided by His Excellency Dr. Taher Al Shakhshir, Minister of Environment, who generously facilitated the utilization of the human and technical resources of the Ministry for the completion of the NAP development process.

National workshops were organized in preparation for the NAP, with active representation from the Ministry of Environment, Ministry of Water and Irrigation, Ministry of Agriculture, the United Nations Development Programme, USAID, academic and research institutions, the media, civil society organizations, women organizations and NGOs. These entities and their representatives displayed a high level of commitment and dedication without which this NAP would not have been produced with such quality.

We are also grateful to the task force of the Ministry of Environment, the National Committee for Combating Desertification and environmental experts who provided valuable comments on the NAP's different aspects, further improving it.

We especially extend our gratitude to Eng. Ahmad Al Qatarneh, Secretary General of the Ministry of Environment for his exceptional commitment to promote the alignment process and adaptation of the NAP.

Last but not least we cannot overemphasize our appreciation of the support presented by the Natural Resources Department in the Ministry of Environment in coordinating and facilitating the process of national consultation that led to the production of the Jordan NAP 2020-2015.

International Union for Conservation of Nature
Regional Office for West Asia

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Acronyms and Abbreviations

ACSAD	The Arab Center for the Studies of Arid Zones and Dry Lands
AFD	Arab Fund for Development
CAP-BRP	Community Action Plan - Badia Restoration Program
CBD	Convention on Biological Diversity
CBOs	Community-Based Organizations
CC	Climate Change
CIDA	Canadian International Development Agency
CORINE	Coordination of Information on the Environment
CSOs	Civil Society Organizations
DBIU	Data Base and Information Unit
DLDD	Desertification, Land Degradation, and Drought
DOS	Department of Statistics
FAO	Food and Agricultural Organization of the United Nations
GEF	Global Environment Facility
GOJ	Government of Jordan
GTZ	German Organization for Technical Cooperation
HFBD	Hashemite Fund for the Development of Jordan Badia
ICARDA	International Center for Agricultural Research in Dry Areas
IFAD	International Fund for Agricultural Development
IFS	Integrated Financing Strategy
IOs	International Organizations
IUCN	International Union for Conservation of Nature
RJGC	Royal Jordanian Geographic Centre
JPRS	Jordan Poverty Reduction Strategy
JUST	Jordan University of Science and Technology
LD	Land Degradation
M&E	Monitoring and Evaluation
MA	Millennium Assessment
MoA	Ministry of Agriculture
MoEd	Ministry of Education
MoEnv	Ministry of Environment
MoF	Ministry of Finance
MoHEdu	Ministry of Higher Education
MoI	Ministry of Interior
MoPIC	Ministry of Planning and International Cooperation
MoPWH	Ministry of Public Works and Housing
MoSD	Ministry of Social Development
MoWI	Ministry of Water and Irrigation
NAP	National Action Plan
NAPA	National Adaptation Program of Action
NBSAP	National Biodiversity Strategy and Action Plan
NCARE	National Center for Agricultural Research and Extension
NCCD	National Committee for Combating Desertification
NCSA	National Capacity Self-Assessment for Global Environmental Management
NGOs	Non-Governmental Organizations
NMP	National Monitoring Program
PRAIS	Performance Review and Assessment of Implementation System
RSCN	The Royal Society for the Conservation of Nature
SDG	Sustainability Development Goals
SLM	Sustainable Land Management
STIs	Science and Technology Institutes
TNC	Third National Communication
UNCCD	United Nations Convention to Combat Desertification
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UJ	University of Jordan
WB	World Bank

Executive Summary

Desertification, Land Degradation and Drought (DLDD) are issues of global concern. They are caused by complex interactions among physical, biological, political, social, cultural and economic factors, and are interrelated with social problems such as poverty, poor health and nutrition, food insecurity and others.

The UNCCD Ten Year Strategy recognized that addressing DLDD would serve to improve the livelihoods of affected populations, restore degraded ecosystems and generate global benefits through effective implementation of the Convention. The Strategy has four Strategic Objectives: improving the living conditions of affected populations; improving the condition of affected ecosystems; generating global benefits; and mobilizing resources to support implementation of the Convention. The attainment of these Strategic Objectives will be guided by five Operational Objectives: Advocacy, Awareness Raising and Education; Policy Framework; Science, Technology and Knowledge; Capacity-Building; and Financing and Technology Transfer.

The Strategy urges the "Parties" to align their Action Programs with the five Operational Objectives of the Strategy. The Government of Jordan, represented by the Ministry of Environment, prepared and adopted its National Action Plan (NAP) on combating desertification in 2006. Following the adoption of UNCCD 10 Year Strategic Plan and Framework to Enhance the Implementation of Convention (2007), this report provides an alignment of the Jordan NAP-2006.

A participatory bottom-up approach was adopted through all phases of the alignment process. Multiple stakeholders from governmental and community-based organizations (CBOs) in the country participated in the meetings and workshops for reviewing and aligning the NAP.

The alignment of the NAP was based on key findings of the situation analysis of the country and the assessment of the 2006 NAP against the Operational Objectives of the UNCCD Strategy. The situation analysis revealed that recurrent droughts, land tenure, lack of effect of extension on sustainable land management (SLM), and non-sustainable land uses (such as improper plowing, inappropriate rotations, destructive grazing of natural rangelands, deforestation, fragmentation of habitats, random urbanization, over pumping of ground water) are the main causes of land degradation. The situation will be accentuated further by the threats of climate change and increasing population growth which will put more pressure on the natural resources.

The assessment of NAP-2006 revealed several strategic gaps including lack of a communication strategy to raise awareness of DLDD, lack of a national monitoring program to track the changes and trends in the conditions of affected populations and ecosystems, low mainstreaming of DLDD issues in national development plans, lack of coordination among the 3-Rio Convections, and lack of structured mechanisms to mobilize needed resources for implementation.

The NAP gaps from an operational perspective include low engagement of different stakeholders in national committees relevant to DLDD issues in addition to lacking of gender representatives and consideration of gender issues, lack of an entity or forum catering for knowledge management and sharing with key stakeholders as well as use of local traditional knowledge, deficient orientation on DLDD issues in the educational and research programs, lack of implementing the action programs of the National Capacity Self-Assessment for Global Environmental Management (NCSA), lack of translating research results into outputs for extension to advocate the practices of sustainable land management and into outputs for policy uptake, lack of networking among national research and technological institutions relevant to DLDD issues, and lack of mechanisms to secure funds from local and external sources.

Suggested actions and measures to fill the identified gaps are: adequate communication to mobilize key stakeholders to support combating desertification; investment in research and knowledge management; strengthening the Coordination Unit of the 3-Rio Conventions; fostering community-based approaches through participatory methodologies and multi-stakeholder dialogue; adopting integrated ecosystem approaches for

conservation and sustainable use of natural ecosystems; developing a national monitoring program to monitor the conditions of affected populations and ecosystems; and orienting higher education curricula to address DLDD related issues at national universities to improve the knowledge of graduates on these issues.

The aligned National Action Plan (NAP) to Combat Desertification in Jordan 2015-2020 consists of a vision, logical framework, monitoring program on DLDD and SLM, and an integrated financial plan. The agreed vision of the aligned NAP is "Productive and ***sustainable use and management of land resources to support poverty reduction, environmental sustainability and national economy".*** This vision focuses on sustainability of land resources, enhancement of population livelihood, and contribution to the national economy. The realization of this vision could be achieved by focusing on several themes.

A logical framework has been prepared for expected outcomes under each of the Operational Objectives outlining the indicators, responsible parties and assumptions. The outcomes include communication and outreach strategy, policy coherence regarding addressing DLDD issues, DLDD platform for knowledge sharing, a national monitoring program on DLDD and SLM, and updating and fulfilling capacity needs for proper implementation of DLDD activities.

The organizational and operational aspects of the monitoring and evaluation plan were discussed briefly to underline the importance of M&E in tracking the future impact of the NAP on the biophysical and socio-economic characteristics of the country.

الإيكولوجي الطبيعي، وتطوير برنـامج وطني للرصـــد بهدف متابعة أوضاع السكان المتأثرين والنظم الإيكولوجيـة المتأثرة، وتوجيه مناهج التعليم العالي لتتناول التصحر وتدهور الأراضي والجفاف في الجامعات لتحسين معرفة خريجيها بهذه القضايا.

وتتألف خطة العمل الوطنية لمكافحة التصحـر في الأردن ٢٠١٥-٢٠٢٠ من رؤيـة، إطار قانوني، برنامج لرصـد التصحر وتـدهور الأراضي والجفاف والإدارة المستدامة للأراضي، وخطة متكاملـة للتمويل. وقد اتفِق على رؤيـة خطة العمل الوطنيـة المعـدلة لتكون: «الاستخـــدام والادارة المثمِران والمستدامـــان لموارد الأراضي للحد من الفقـر ودعم الاستدامـة البيئيـة والاقتصاد الوطني». وتركز هذه الرؤية على استدامة موارد الأراضي وتعزيز سبل عيش السكان والمساهمة في الاقتصـاد الوطني.

أعِدَّ إطارٌ قـانوني للنتائج المتوقعة من كل غاية عملياتيـة يشمل المؤشرات والأطـــراف المعنيـة والافتراضات. وتشمل النتائج استراتيجيـــة اتصال وتوعية واتسـاق في السياسـات المتعلقـة بقضايا التصحـر وتدهور الأراضي والجفـاف ومنبر للتشارك في المعرفة حـول هذه القضـايا ونظـام رصـد وطني لها وللإدارة المستدامة للاراضي لتحديث وتلبية الاحتياجـات من القـدرات اللازمة للتنفيذ المناسب للأنشطة الخـاصة بتلك القضايا.

أما الجـوانب التنظيميـــة والعملياتيـة لخطة الرصـد والتقييم فقد نوقِشت باختصار لتبيان أهميـــة هذه الخطة في تتبُّع الأثر المستقبلي لخطة العمل الوطنيـــة على الخصـائص الحيويـة-الفيزيائيـة والاجتماعيـة-الاقتصادية للمملكة.

خلاصة تنفيذية

تمثل قضايا التصحر وتــدهور الأراضي والجفــاف مصدر قلق عالمي. وقد نشأت هذه القضــايا بفعل تفاعلات معقدة بين عوامل فيزيائيـــة وبيولوجيــة وسياسية واجتماعيــة وثقافيــة واقتصادية؛ وهي متصلة بمشكلات اجتماعية مثل الفقر والمرض وسوء التغذية وانعدام الأمن الغذائي وغيرها.

وقد أقرت الاستراتيجيــة العَشْريــة لاتفاقيـــة الأمم المتحــدة لمكافحة التصحر أنّ التصدي لتلك القضــايا يساهم في تحسي سبل عيش السكان المتأثرين بها واستعادة النظم الإيكولوجية المتــدهورة والخروج بفوائد عالمية من خلال التنفيــذ الفعال للاتفاقية. وللاستراتيجية العشرية أربع غايات استراتيجيــة هي: تحسين الأوضاع المعيشية للسكان المتأثرين بالتصحر وتدهور الأراضي والجفــاف، تحسين وضع النظم الإيكولوجية المتأثرة، الخروج بفوائد عالمية، حشد الموارد لتنفيذ الاتفاقية. ولتحقيق هذه الغايات الاستراتيجية سيُسترشَد بخمس غايات عملياتية هي: حشد الدعم والتوعية والتعليم، إطار عمل السياسات، العلم والتكنولوجيا والمعرفة، بناء القدرات،التمويل ونقل التكنولوجيا.

تحثُّ الاستراتيجيةُ «الأعضــاءَ» على جعل برامج عملهم موائمة لغايات الاستراتيجيـــة العملياتية. وقد أعَدت وتبنَّت الحكومــةُ الأردنيـة ممثلة بوزارة البيئة في عام ٢٠٠٦ خطـة العمل الوطنيــة لمكافحة التصحر. وبعد تبني الخطة وإطار العمل الاستراتيجيان العَشرِيان لتعزيز تنفيذ اتفاقية الأمم المتحدة لمكافحة التصحر في عام ٢٠٠٧ يقدم هذا التقريــر مواءمــةً لخطــة عمل الأردن الوطنية لعام ٢٠٠٦.

وقد تم تبني نهج قائم على المشاركة المجتمعية في كافة مراحل عملية المواءمـة، حيث شارك معنيــون من مختلف المستويات في المؤسسات الحكومية والمنظمـــات المجتمعيــة الأردنيـة في اجتماعات وورش عمل مراجعة ومواءمة خطة العمل الوطنيــة. وقد استندت مواءمة خطة العمل الوطنيــة إلى النتائج الرئيسية لتحليل الأوضـاع في المملكة وتقييم خطة العمل الوطنية لعام ٢٠٠٦ في ضوء غايات استراتيجيـة اتفاقية الأمم المتحدة لمكافحة التصحر. أظهر تحليل الأوضاع أن تكرار حدوث موجات الجفاف وحيــازة الأراضي وعـــدم تأثير الإرشاد على الإدارة المستدامــة للأراضي والاستخدامات غير المستـدامة للأراضي (مثل الحراثــة غير الصحيحـة، والأنماط الزراعيـــة غير الملائمــة، والرعي غير المنظم لنباتــات أراضي المراعي الطبيعيــة، وإزالـة الغابــات، وتفتيت الموائل، والتمـدد الحضـــري العشوائي، والاستخـــراج المُفرط للمياه الجوفية) هي الأسباب الرئيسية لتدهور الأراضي. وسيتفاقم هذا الوضع أكثر بفعل تهديـــدات التغير المنــاخي والنمو السكاني المضطرد مما سيزيــد من الضغوط على الموارد الطبيعية.

لقد تَبيَّن من تحليل خطة العمل الوطنية لعام ٢٠٠٦ وجود ثغرات استراتيجية عديدة بما فيها غياب استراتيجية اتصال لرفع الوعي حول قضايا التصحر وتدهور الأراضي والجفاف، وغياب برنـامج رصد وطني لتتبُّع التغـيرات والاتجـــاهـات في أوضـــاع السكان المتأثرين والنظم الإيكولوجيـة المتأثرة بالتصحر وتدهور الأراضي والجفـاف، وضعف إدراج هذه القضايـا ضمن خطط التنميـــة الوطنيـــة، وغياب التنسيـــق بين اتفاقيـات رِيو الثلاث، وعدم وجـــود آليات منظمـــة لحشد الموارد اللازمة للتنفيذ.

أما من حيث الجانب العملياتي فقد اشتملت خطةِ العمل الوطنية على عدة ثغـرات أهمها: ضعف إشـــراك مختـلف المعنيين في اللجان الوطنية الخاصة بقضـايا التصحـر وتـــدهور الأراضي والجفـاف، عـدم تمثيل النوع الاجتمـاعي ومراعـاة اعتبـارات النوع الاجتماعي، غياب هيئة أو منتـدى يتولى إدارة المعرفـــة وتشـاركها مع المعنيـين الرئيسيين والاستفـادة من المعـارف المحليـة، القصـــور في إدراج تلك القضـــايا ضمن الـــبرامج التعليمية والبحثيـة، وعدم تنفيـــذ برامج عمل التقييم الذاتي للقدرات الوطنية في الإدارة البيئية العالمية، عدم ترجمة نتـائج الأبحاث إلى مخرجـــات تُستخـــدم في الإرشاد لحشـــد الدعم لممارسات الإدارة المستدامـة للأراضي وفي صياغة السياســات، غياب التشبيك بين المؤسســات البحثية والتكنولوجية الوطنيـة المختصة بقضايا التصحر وتـدهور الأراضي والجفاف وضعف آليات الحصول على تمويل من مصادر محلية وخارجية.

ولمعالجـــة هــذه الثغرات يُوصى باتخـــاذ إجراءات وتـــدابير تشمل التواصـــل الكافي لحشـــد المعنيين الرئيسيـــين في دعم مكافحـــة التصحـر، والاستثمار في الأبحـــاث وإدارة المعرفـــة، وتمتين وحـــدة تنسيق اتفاقيات رِيو الثلاث، وتبني منهجيـــات مجتمعية من خلال الأساليب التشاركية والحوار متعدد المعنيين، وتبني منهجيات تكاملية للصون والاستخدام المستدام للنظام

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Chapter One: Introduction

1.1. Rationale of the 3 Rio Conventions

The United Nations Conference on Environment and Development (UNCED), often referred to as the "Earth Summit", took place in Rio de Janeiro, Brazil, in June 1992. UNCED led to the development of three legally binding global agreements, to address the global challenges of climate change, biodiversity loss, and desertification. The United Nations Convention to Combat Desertification was established in 1994 and, of the 3 "Rio Conventions", UNCCD is considered to be the only agreement that links environment and development to sustainable land management. The Convention emphasizes improving the living conditions for people in drylands, maintaining and restoring land and soil productivity, and mitigating the effects of drought. These environmental-development challenges are collectively referred to as DLDD: Desertification, Land Degradation and Drought. UNCCD is also unique in favoring a bottom-up approach, encouraging the participation of local people in combating DLDD. Jordan signed and ratified the Convention in 1996.

Article[1] of the Convention defines desertification as "land degradation in arid, semi-arid and dry sub-humid areas resulting from various factors, including climatic variations and human activities". Combatting desertification is described as "activities which are part of the integrated development of land in arid, semi-arid and dry sub-humid areas for sustainable development which are aimed at: (i) prevention and/or reduction of land degradation; (ii) rehabilitation of partly degraded land; and (iii) reclamation of desertified land[1]. Arid, semi-arid and dry sub-humid areas are collectively referred to by the Convention as the Drylands (this excludes Hyper Arid lands that are considered drylands by other organizations, including the Convention on Biological Diversity).

According to UNCCD Articles 9 to 11, Action Programmes (National, Sub Regional or Regional) should be central to the strategy to combat DLDD; they should be updated through a continuing participatory process allowing modifications according to the changing reality, and they require regular review. The NAPs should be developed "through a participatory approach involving various stakeholders, including relevant governmental offices, scientific institutions and local communities. They spell out the practical steps and measures to be taken to combat desertification in specific ecosystems.[2]"

In 2007, Parties to the Convention adopted a 10-Year Strategic Plan and Framework to enhance the implementation of the Convention for 2008-2018 ("The Strategy"). The Goal of the Strategy is to "forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability". In particular the Strategy focuses on: performance based management; mainstreaming sustainable land management into the development process; recognizing the need for broad-based reforms and policy changes that reach beyond the scope of traditional environmental policy-making; and securing the financial resources to implement actions. The Strategy (Decision:3 COP8) urges and recognizes: "the need for Parties to align their Action Programmes", and at COP9 (Decision:2) further emphasis is placed on "Alignment of the action programmes with The Strategy", and particularly alignment of NAPs with the 5 Operational Objectives of the Strategy.

Alignment of NAPs is recommended to address the challenge of multiple, overlapping, sometimes contradictory policies and frameworks at the national level. DLDD is a highly dynamic process and NAPs should be updated to reflect the changing context and science. There is particular demand for greater accountability and measurement of the effects of actions to combat desertification, more effective implementation, greater synergies and mainstreaming, and improvements in scientific assessment. Together, these improvements are intended to be used to develop Integrated Financing Strategies that mobilize resources to combat DLDD. NAP alignment should also take into account the intimate connectivity between the dynamics of land, climate and biodiversity, ensuring alignment with the Convention on Biological Diversity (CBD) and the United Nations Framework Convention on Climate Change (UNFCCC).

[1] http://www.unccd.int/Lists/SiteDocumentLibrary/conventionText/conv-eng.pdf
[2] http://www.unccd.int/en/about-the-convention/Action-programmes/Pages/default.aspx

1.2. The Multi-Dimensional Problem of DLDD

Land is a dynamic resource for producing food and other ecosystem goods and services including conserving biodiversity, regulating hydrological regimes, cycling soil nutrients, and storing carbon, among others. Indeed, the most significant natural capital asset is productive land and fertile soil. For those communities that depend heavily on land as their main asset, especially the rural poor, human well-being and sustainable livelihoods are completely dependent upon and complexly linked to the productivity of the land.

Population growth, climate change, unsustainable land use, land degradation and growing urban areas increase the pressure on productive land and water resources. At the same time, competition for productive land increases due to growing demand for food and fodder. The drylands continue to be the most vulnerable and threatened by desertification, land degradation and drought (DLDD). Ecological and economic systems are also disrupted by drought. Sustainable Land Management (SLM) with its focus on soil structure and land cover improvements has the potential to make significant progress towards three critical global sustainability goals related to DLDD, namely food security, energy access, and water availability. SLM practices significantly enhance soil water retention capacity and improve water availability.

Women bear the burden of land degradation but can also be part of the solutions. In this respect, gender sensitive investments in addressing the conditions of degraded land will not only contribute to achieving food security, poverty alleviation and sustainability but also contribute to improving the living conditions of women in ecosystems affected by DLDD.

Land is intimately related to climate change adaptation and mitigation, and its sustainable management provides a tool for addressing both. Maintaining and enhancing the condition of land also contributes to biodiversity conservation and its sustainable management. Serious actions are needed to protect, restore and manage land and soils sustainably to be able to achieve our commitments for climate change adaptation and mitigation, biodiversity conservation, forest and SDG targets.

1.3. Overview of Jordan NAP-2006

As a result of Jordan's commitment towards conservation of the local and regional environment, the Ministry of Environment led the process of preparing the National Strategy and Action Plan (NAP) to Combat Desertification within the context of the UNCCD. The NAP was prepared in 2005 and launched in 2006. A combination of bottom-up and top-down approaches were used in the preparation of NAP with an overall objective to provide integrated development plan and subsequent programs targeting local communities and environmental components in areas under threat of desertification.

The NAP includes six programs with specific objectives and focal themes of activities. Under each program several projects with justification, objectives, activities, expected outputs, duration, implementing agencies, and estimated budget were proposed. The programs include (i) Desertification Information System, (ii) Drought Prediction and Desertification Control, (iii) Capacity Building and Institutional Development, (iv) Restoration of Degraded Ecosystems of Rangelands and Forests, (v) Watershed Management, and (vi) Human, Social and Economic Development.

1.4. The UNCCD 10-Year Strategy: Vision and Objectives

Recognizing the need for the Convention and its institutions to take a new results-based management (RBM) approach, the Convention adopted a 10-year (2008–2018) strategic plan and framework to enhance its implementation in order to respond to the new challenges and needs at all levels.

The vision of the 10 Year Strategy is "to forge a global partnership to reverse and prevent desertification/land degradation and to mitigate the effects of drought in affected areas in order to support poverty reduction and environmental sustainability". The Strategy consists of 4 Strategic Objectives and 5 Operational Objectives.

The four Strategic Objectives are:

- Strategic Objective 1: To improve the living conditions of affected populations.
- Strategic Objective 2: To improve the condition of affected ecosystems.
- Strategic Objective 3: To generate global benefits through effective implementation of the UNCCD.
- Strategic Objective 4: To mobilize resources to support implementation of the Convention through building effective partnerships between national and international actors.

The Operational Objectives are designed to guide the actions of all UNCCD stakeholders and partners in the short and medium term with a view to supporting the attainment of the vision and Strategic Objectives. Each Operational Objective also includes a number of Outcomes which explain the short and medium-term effects intended by the Operational Objectives.

The five Operational Objectives are:

- Operational Objective 1: Advocacy, Awareness Raising and Education.
- Operational Objective 2: Policy Framework.
- Operational Objective 3: Science, Technology and Knowledge.
- Operational Objective 4: Capacity Building.
- Operational Objective 5: Financing and Technology Transfer.

1.5. Adopted Approach for Aligning the Jordan NAP-2006

A participatory bottom-up approach was adopted through all phases of the aligning process. Calls through official letters and e-mails were forwarded to most of line governmental and community-based organizations (CBOs) in the country to participate in the meetings and workshops for aligning the NAP. Participation started from the preparation of the NAP Outline to the discussion of the Final Draft before official submission of the aligned-NAP document to the Ministry of Environment. Substantial numbers of participants representing line institutions (MoEnv, MoWI, MoA, MoPIC, MoSD, DoS, HFBD, NCARE, JUST, UoJ, RSCN, ICARDA…) shared in all phases of the aligning process reflecting an effective participation, particularly in the following events: Proposed outline of the aligned-NAP; results of stakeholder analysis; Jordan provisions and obligations to UNCCD; country studies on desertification and land degradation related to socio-economic and sustainable land management and the barriers; analysis of NAP-2006; economic valuation analysis of degradation of rangeland productivity and climate change on the value of ecosystem goods and services; communication and outreach plan for the updated NAP implementation; and the final draft of the aligned-NAP.

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Chapter Two: Country Status

The intention of this chapter is to provide important background information on the current context of DLDD in Jordan that is needed to inform revision of the National Action Plan. The chapter provides a brief situation analysis of the biophysical and socio-economic context, a stakeholder analysis, a review of existing investment in SLM, of traditional knowledge, of community-based mechanisms for promoting SLM, and of important policies and policy changes that are integral to combating desertification.

2.1. Situation Analysis

2.1.1 Biophysics

The Country

Jordan covers an area of 89,800 km^2 with varied topography including a range of mountains that runs from north to south with altitudes ranging from 500 meters to over 1,700 meters, which form the Highlands. East of the mountains, the land slopes gently to the east to form the eastern deserts. In the west the land slopes steeply towards the Jordan Rift Valley, which extends from Lake Tiberias in the north (elev. 220 m below the sea level) to the Red Sea at Aqaba. The Dead Sea lies about 120 km south of Lake Tiberias, with a water level at about 405 m below the sea level. Less than 5% of the country's land area is arable land.

Climate

Jordan is a semi-arid and drought-prone country largely influenced by the range of mountains in the west. The western part of Jordan, or the Highlands, has a Mediterranean climate characterized by a hot, dry summer (up to 45Co) and a cool, wet winter (average 13Co) separated by two short transitional periods. The southern and eastern parts of the country are arid with hot dry summers and cold dry winters. Precipitation is characterized by extreme variability and is confined largely to the winter and early spring seasons and ranges from over 500 mm in the highlands to less than 50 mm in the east.

Aridity extent: Area analysis of aridity map according to Emberger's factor (Map 1) showed that 95% of the country's land is arid and very-arid[3] while the remaining proportion of country's area is semi-arid.

Natural Systems in Jordan

Jordan's wide range of physical conditions and location at the junction of three continents –Europe, Asia and Africa– contributes to various differentiated bio-geographical regions and ecosystems. These ecosystems include deserts (Badia) with poor plant cover; sub-tropical ecosystems, including Sudanian species of tree and dwarf-shrub prominent in the sparse and very open vegetation; aquatic ecosystems, comprised of rivers, wadies and wetlands, the latter varying from salt marshes to marine ecotypes; and the scarp and highland ecosystems, comprising of escarpments and mountains, hills and undulating plateaus with natural woodland (Pinus, evergreen/deciduous oak woodland) and steppe, the latter consisting of a transitional area where desert biota is gradually replaced by "Mediterranean" biota.

Jordan is one of the world's most water-deficit countries with declining availability of water per capita resources (now at 145 m^3/year but projected to 90 m^3/year by 2025). Less than 5% of the total land area is considered arable. As a consequence, agricultural productivity is greatly reduced. Therefore, a major challenge for the Government is to promote the sustainable use of natural resources for agricultural purposes. This challenge is being made harder by the ongoing processes of degradation.

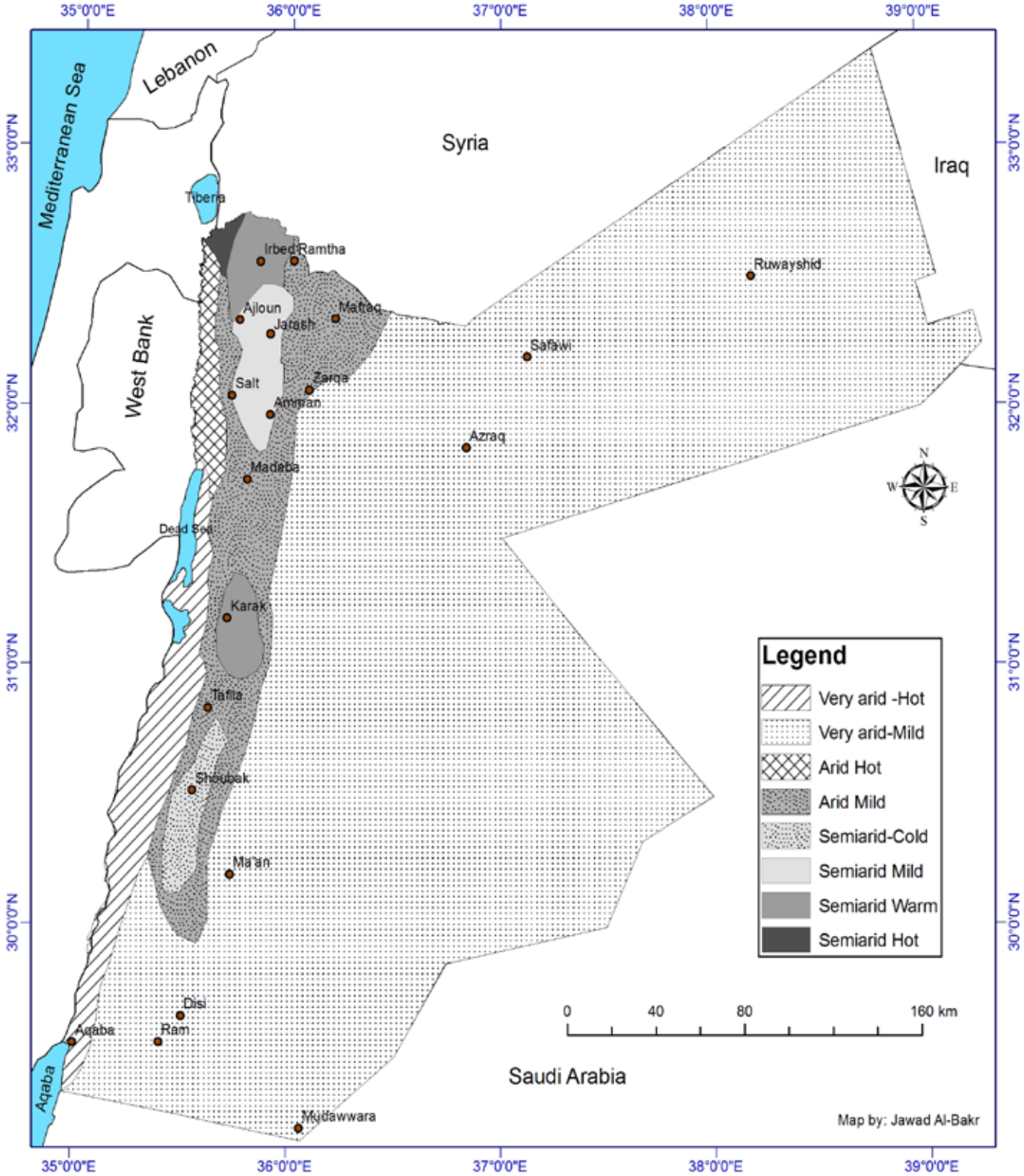
Land Use in Jordan

Land use in Jordan is a complex mixture of rural and urban activities that reflect both climate and socioeconomic characteristics. According to the Department of Statistics (2003), land use shows that 93% of the country is dominated by non-cultivated areas, classified as rangeland, due to limitations of climate, water availability, soil suitability and surface cover of stones. Although the eastern and western arid lands and deserts are used as open rangelands, irrigation is practiced in these

[3]The aridity index classification scheme uses the term very arid which is the same as the Hyper-arid term.

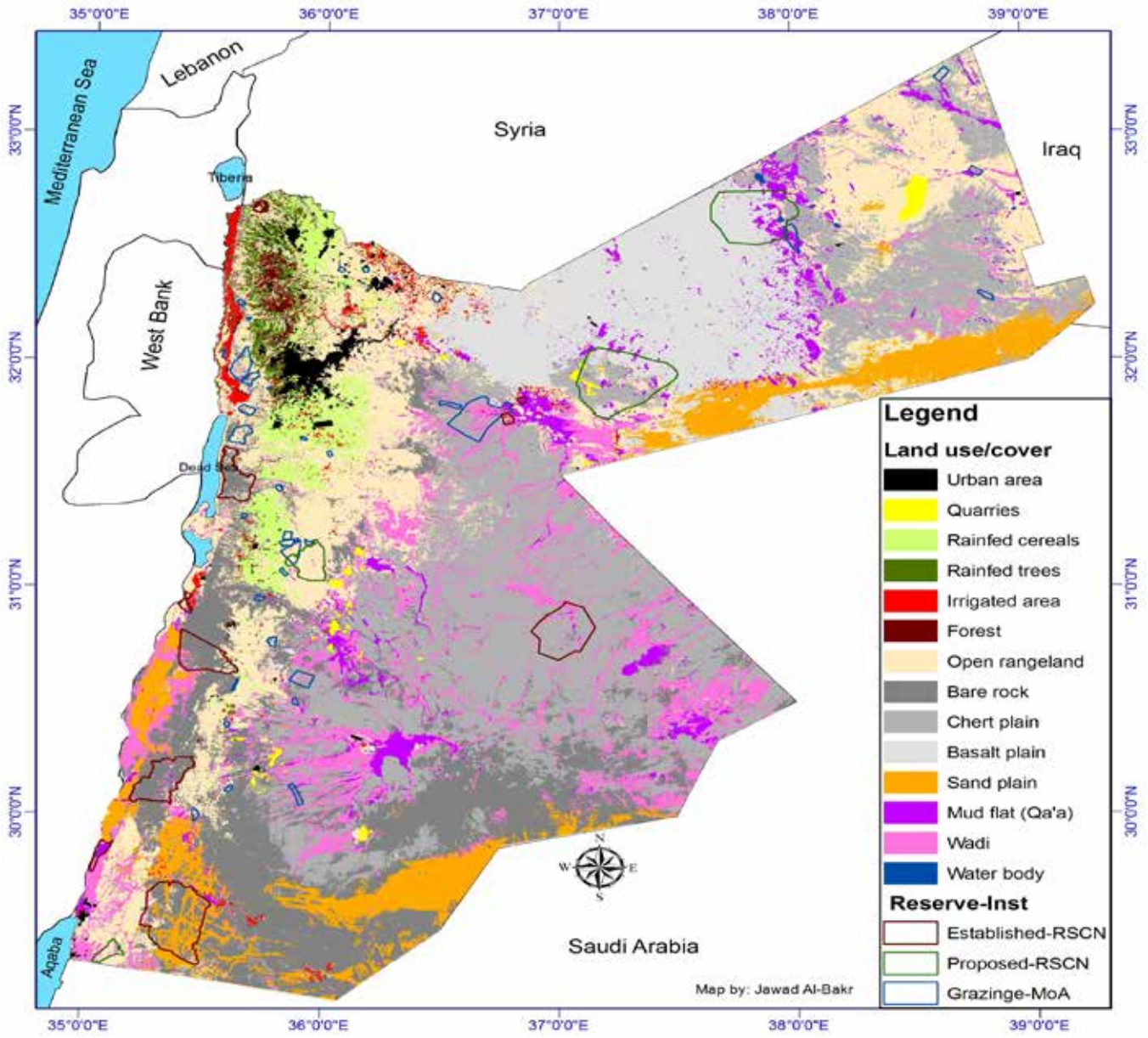
hot areas. Cultivated areas form 2.7% of the total area of Jordan. Intersecting land use/cover and agro-climatological maps show that 90% of rain-fed agriculture is taking place in the northern and western highlands. Irrigation is taking place in Jordan Valley (JV), highlands and desert areas.

Map 1: Aridity Index (Emberger Classification) in Jordan (Source: JNGC, 1984)



The map of land use/cover included 5 main categories of land use/cover (following CORINE classification system) that included 14 classes.

Map 2: Existing land use/cover of Jordan. (Al-Bakri et al., 2010)



Land Degradation Issues and Constraints

Land degradation processes in Jordan affect not only selected ecosystem components or their functional cycles; rather, they are destructive processes that negatively impact the entire environmental landscape. While to a large extent these land degradation processes have a human-induced local origin, if not addressed appropriately the negative effects will have implications on regional and global environmental goods and services.

Land degradation (LD) in Jordan is mainly associated with smallholder agricultural activities such as unsustainable crop production, unsustainable rangeland management, and over exploitation of vegetation. In addition, the over-pumping of groundwater practiced in the eastern and southern plains farming contributes to LD by affecting vegetation, soil and water resources that are used by small-scale farming. Different studies and research conducted in the Kingdom show the main types of land degradation in different ecosystem types as shown below in Table 1. (Khresat et al., 1998).

Table 1. Land Degradation State According to Ecosystem Type

Land Degradation Type	Ecosystem/Region	Main Cause
Water erosion	Highlands and Jordan Valley escarpment	Deforestation, overgrazing, agricultural practices
Wind erosion	Eastern plains; Steppe areas and Badia	Overgrazing, deforestation
Decline in soil fertility & soil compaction	Highlands and Jordan Valley	Agricultural practices, overgrazing, deforestation
Rangeland and vegetation degradation	Forest and Badia	Overgrazing, deforestation

Specific Drivers and Pressures

Unsustainable land use and management, recurrent droughts and climate change are the main causes of land degradation in the country. Non-sustainable land use practices include improper plowing, inappropriate rotations, inadequate or inexistent management of plant residues, overgrazing of natural vegetation, forest cutting, inappropriate land use, random urbanization, land fragmentation and over-pumping of groundwater. High population growth and ineffective arrangements of land tenure are among the root causes which exert excessive pressure on the natural resources to meet increased food and income demand. Overall, the constraints facing the deprived land users, such as poor access to technology, capital and organization, are also factors that contribute to unsustainable practices.

Agricultural Land Use Changes

In recent years, the trends have been: (i) a reduction of total agricultural use, partly due to decreased capacity of poor land users; (ii) an increase in the permanent crop area at the expense of some annual crops which have become unprofitable and as a result of land fragmentation and a decrease in land holding sizes; and (iii) crop cultivation and grazing in areas of higher risk (steeper slopes and/or lower rainfall and in particular in the marginal and steppe areas).

Unsustainable Farming Practices

Rain-fed farming, which is distributed over the northern, middle and southern Highlands, forms the base for agricultural production in Jordan. However, average crop yields are low and productivity is seriously limited by overall scarcity of water, extreme variability of rainfall and limited soil water conservation activities. Consequently, resource-limited land users have been increasingly exposed to decreasing income and declining livelihood security, which in turn have led to:

- Repeated tractor-operated tillage along slopes that is driven by the longitudinal shape of the small landholdings. Tractor plowing has progressively replaced animal plowing along contours as tractors are perceived as cheaper and are more readily available. When the slope is very steep, tractors are obliged (for fear of overturning) to work along the slopes resulting in an overall increase in the erosion risk. Joint planning of tillage operations between neighbors is reported difficult;
- Little, if any, soil fertility management and insufficient use of rotational practices in the cereal based cropping pattern; at times even fallow is not practiced. Lack of capital, seed or access to the same, and small farm sizes (that require continued cultivation of food crops) are the constraints farmers cite as a rationale behind such practices;
- Cultivation of marginal lands under field crops (barley and even wheat) as a consequence of urban encroachment in agricultural areas but also due to crop substitution with tree crops on higher potential land.

Animal Overstocking

Livestock is an important component in the farming system in Jordan and a major source of cash income as well as consumption. There is a vicious circle whereby rangeland carrying capac-

ity is decreasing, farmers are unable to supplement feeding with expensive fodder and feed and are thus obliged to downgrade traditional management and extend the grazing season to unsuitable months. This exacerbates pressure on rangelands and further lowers productivity of both, pastures and animals. Overgrazing is also leading to a loss of resilience of the rangeland against droughts.

Overexploitation of Natural Habitat

The Mediterranean bio-geographical zone which used to represent a type of woody habitat has been degraded following logging and destructive grazing in the past 50 years. The situation is aggravated through construction of new villages, fires, unorganized reforestation/afforestation, fuel wood collection, and introduction of invasive species. As previously mentioned, the desert and semi-desert regions comprise more than 85% of Jordan's land area. Nevertheless, the desert is a vulnerable ecosystem that has been subjected to many changes and disturbances, due to the abovementioned causes, particularly over-extraction of underground water, which has led to the desiccation of surface vegetation, as well as overgrazing in the eastern and more arid areas and introduction of mechanization on a major scale, expanding tillage, hence resulting in large areas where steppe vegetation is being destroyed.

Climate change and land degradation

The natural ecosystems in Jordan are subject to many pressures (e.g. land-use change, resource demands, population changes); their extent and pattern of distribution is changing, and landscapes are becoming more fragmented. Climate change constitutes an additional pressure that could change or endanger ecosystems and the many goods and services they provide. Soil properties and processes -including organic matter decomposition, leaching, and soil water regimes- will be influenced by temperature increase. Soil erosion and degradation are likely to aggravate the detrimental effects of a rise in air temperature on crop yields. Climate change may increase erosion in some regions, through heavy rainfall and through increased wind speed.

Based on the results of the different climatic models and the trend analysis (TNC, 2014), climate change scenarios in 2050 and 2100 were suggested for the different basins in Jordan. The most probable scenario would be an increased air temperature of 1.5°C and a 15% decrease in precipitation by the year 2050. This climate change trend is likely to exacerbate the degradation of land in the arid, semi-arid and sub-humid areas in the country.

2.1.2. Socio-Economic

Demographics of Jordan

At the end of the year 2012 the total population of Jordan amounted to 6.388 million of which 37.3% are less than 15 years of age and 60% are within the age range of 15-64 years. According to the last population census in 2004, the population of Jordan was 4.139 million. This means that in the eight years period of 2004-2012, the population has increased by more than 50%. The most recent statistics published by the Department of Statistics (DOS) indicate that the population growth rate was at 2.2% in the year 2012 compared to 2.7% and 2.3% in the years 1994 and 2001, respectively. However, it should be noted here that Jordan's population has significantly increased during the last three years due to the influx of hundreds of thousands of Syrian refugees who fled their homes to Jordan after the outbreak of the war in Syria.

The total population density is 79.2 people per km^2. Although Jordan's population is considered relatively small in comparison with neighboring countries, distribution and density are two main problems related to population in Jordan. The DOS population estimates at the governorate level show that the people living in Amman Governorate are around 2.5 million representing 39% of the total population. The other highly populated governorates in Jordan include Zarqa, Irbid, Balqa, Jerash and Ajloun. The lowest population density is that in Ma'an and Mafraq governorates. Another important observation regarding the population density is that, the high population densi ties are found in the relatively most fertile land of highlands extending from Irbid area in the north to Karak area in the mid-south, on one hand, and the demographic imbalances on the other hand, had imposed serious stresses on land quality of a country characterized by aridity. Such stresses are manifested by continuous degradation of the land quality.

The expansion of city borders and introduction of municipal services have resulted in increasing the urban population to 82.6%. According to the DOS statistics[4], the average household size is 5.4 persons and the total number of households is 1.173 million.

Land Tenure in Jordan

Among the many other factors affecting desertification in Jordan, it is believed that land tenure system is one of the major elements leading to land degradation especially in the Badia region[5].

A recent socioeconomic study conducted by ICARDA in the Badia region concluded that the traditional land tenure system has collapsed and, in reality, rangeland is available to those who can exploit it.

The announcement of grazing rangelands as a state-owned properties (common property) and the elimination of traditional land tenure systems accelerated the destruction of the rangelands by the introduction of new land uses such as cultivation of wheat and barley, overgrazing and early grazing of range plants, ploughing of rangelands to establish ownership rights, property rights, urbanization, uprooting of bushes for use as fuel wood, arbitrary movement of vehicles, quarries and mining activities[6].

Different types of land tenures are found in Jordan based on the land right system that was used in the Ottoman Land Law[7]: 1) Mulk: absolute ownership of the land; 2) Meeri: legally owned by the state but is under perpetual lease to the occupier, who has inherited right of disposal; 3) Waqf: This land is inalienable religious endowment; 4) Mawaat unoccupied land, which has not been left for public use; usually it is too far from urban activities; 5) Matrouk: set aside land for public use; and 6) Masha'a: village land that is usually planted with field crops and owned collectively under tribal tenure (tribal fronts).

The Economy

Jordan's Gross Domestic Product (GDP) at current prices amounted to JD21,966 million in 2012 while the GDP growth rate at current prices amounted to 7.3%. However, at the constant prices of 1994 the GDP growth rate was 2.7%. As indicated in Figure 1, the GDP in both prices has witnessed a continuous increase over the last two decades. The contribution of the agricultural sector has fluctuated over the same period but the general trend was decreasing in proportion due to the growth of the other sectors and to the constraints facing the agricultural sector, especially water.

The Net Trade Balance of Goods & Services was JD8,277 million and the Percentage Coverage of the Exports to Imports was 38% which means that exports cover only 38% of the total country imports. Also in 2012, the GDP per capita amounted to JD[8] 3,439.

Agriculture

The importance of the agricultural sector stems from the fact that it is the major source of fresh vegetables and fruits for the domestic market and regional export markets. Agriculture plays a crucial role in food security of the country and as a source of foreign currency. Despite the fact that more than 90% of the country's area is classified as arid and receives less than 200 mm annual rainfall, the agricultural sector is still considered as an important sector in terms of socioeconomic aspects and factors affecting both irrigated and rainfed agriculture. Agricultural exports represented 17% of the total national exports in 2012 of which 13% were from exports of livestock[9].

Agricultural production is closely tied to climate, making agriculture one of the most climate-sensi tive of all economic sectors. The risks of climate change for the agricultural sector are a particularly immediate and important problem because the majority of the rural population depends either directly or indirectly on agriculture for their livelihoods. Climate change will affect the agricultural production and food quality because of the increasing temperature and decreasing crop growth period. Also, it will affect the food quantity and the accessibility to food leading to food-insecure communities. Food security is increasingly important for the livelihood of the rural community where food availability and food quality are major concerns because of climate change impacts.

[4] DOS, Demographic Statistics, Estimated population for the Kingdom by Urban and Rural 2012.

[5] Akroush S. and Shideed K. 2008. Community-Based Optimization of the Management of Scarce Water Resources in Agriculture in West Asia and North Africa. Report no. 6. Baseline Information and Livelihood Characterization of Badia Benchmark Water Harvesting in Jordan. ICARDA, Aleppo, Syria. iv +60 pp.

[6] Ministry of Agriculture, Directorate of Rangelands and Badia Development (2013/2014), Updated Rangeland Strategy for Jordan. (IUCN and UNDP).

[7] FAO 2012 Country Study on Status of Land Tenure, Planning and Management in Oriental Near East Countries, CASE OF JORDAN, FAO – SNO CAIRO, EGYPT - 2012 Food and Agriculture Organization of the United Nations Regional Office for the Near East (RNE) Oriental Near East Sub-Region (SNO).

[8] DOS, (2012), Selected Indicators-2012.

[9] DOS, 2012, External Trade Statistics, 2012.

In addition to its important role in supporting food security of Jordan, the agricultural sector is also one of the major contributors to national exports. In the year 2012 the total value of agricultural exports amounted to JD458 million of which 72% were vegetable exports and the rest 28% were fruits and nuts as shown in Figure 1 (DOS, 2014). The main destinations of fresh horticultural exports are the Gulf countries, Iraq, Syria and Lebanon. In addition to Arab countries, horticultural products are also exported to Western and Eastern European markets. The main suppliers of these exports are farms under irrigation in the uplands and in the Jordan Valley.

Water

Irrigated agriculture in Jordan is characterized by heavy reliance on underground water which is considered unsustainable irrigation development. Other characteristics include the spreading out of large-scale farms; exclusive dependence on high-water-consumption cropping patterns such as vegetables and fruit trees in the middle of the deserts. Much of the irrigated agriculture in Jordan especially in the highlands relies on underground water for irrigation. According to MWI[10], there are 12 groundwater basins identified in Jordan. Most basins are comprised of several aquifer systems. One of the most important sources of renewable groundwater is the Azraq groundwater basin which is also one of the most overpumped. The basin is located in the northeastern part of Jordan, in the Highlands and covers an area of about 700 square km. This basin is one of the largest groundwater aquifers in Jordan which contains more than 400 wells used mainly in agricultural, municipal and industrial uses[11]. The catchment area holds four dams located inside the Basin vicinity for the purpose of groundwater recharge and providing the local population with drinking water. In addition to over abstraction, a newly major threat facing the basin is the recently established Syrian refugees' camp which holds more than 100 thousand inhabitants. This threat is of two-tiers: 1) the additional demand for water to fulfill the daily needs of more than 100 thousand people, from an already over-abstracted basin and 2) the potential water contamination resulting from the generated wastewater since the basin is characterized by a shallow water table.

The water sector of Jordan has been receiving lots of attention from the Government of Jordan (GOJ). The government has invested hundreds of millions of JDs to improve the utilization of the water used for municipal, agricultural and industrial sectors. Currently, all underground resources are exploited to their maximum capacity and in some cases abstraction exceeds the safe yield of the aquifer. According to the MWI, seven groundwater basins are being over pumped with abstractions ranging from 135% to 225% of the safe yields. In four basins abstractions equal the safe yield. The Ministry concluded that overexploitation of aquifers has and will contribute significantly to the degradation of groundwater quality and endangers the sustainability of these resources for future use[12].

Desertification

The expected impacts/risks from climate change on ecosystems in Jordan according to climate exposure and sensitivity of ecosystems in Jordan are droughts, forest dieback, community composition change, expansion of drier biomes into marginal lands, habitat degradation and species loss. The highest vulnerable ecosystems are forests (especially in the north) and fresh water ecosystems (especially in Jordan Rift Valley), which highlights the priority to perform adaptation interventions within these two ecosystems.

The Gender Issue

The Government of Jordan is a signatory to, and member of, a number of key international agreements that already commit the country to gender mainstreaming. According to the Global Gender Gap Index 2012 rankings, Jordan ranked 121 of 135 countries[13]. It is clear that Jordon has taken wide steps during the last years in many achievements on the level of economic and social policies and legislations that contributed in the improvement of the women conditions in Jordan in all fields, especially those related to educational on natural resources and ecosystem services achievements with a quantitative dimension represented in higher rates of girl enrollment in various educational stages than boys as well as a qualitative dimension represented in distinguished academic achievements by female students and their excellence over their male peers.

[10] Hashemite University, Zarqa (2005), Workshop on "Aquifer Vulnerability & Risk in Jordan", Final report.
[11] German-Jordanian Programme "Management of Water Resources" (2012), The Azraq Dilemma: Past, Present and Future Groundwater Management, Amman, Jordan.
[12] Ibid.
[13] World Economic Forum, The Global Gender Gap Report 2012, Insight Report.

The relation of DLDD with gender and poverty is due to the dependency of such vulnerable groups (water springs, rangelands and biodiversity) that could be threatened by DLDD. Over 90% of pastoralist and farmer households in Jordan are supported by the father while women have unaccounted roles through essential contribution in agriculture, animal husbandry and rural enterprises. Distinct gender roles within Bedouin and rural communities largely undermine the indigenous knowledge and skills of local women. Decision making and management on the household level and community level are mainly governed by the males in contrast with the fact that it is females who are in direct contact with natural resources use and processing either for livestock feeding or meeting family needs[14] while women play a vital role in providing the family with part of the income and sometimes generating income from other non-traditional means such as cultivating and processing medicinal and herbal plants.

Unemployment and Poverty

The official rate of unemployment in 2012 was (12.2%). The unemployment rate between males and females was 10.4% and 19.9%, respectively. The highest proportion of unemployed persons was among the age group of 15-24 which amounted to 49% of the total unemployed individuals. Unemployment and poverty are considered the principal hurdles for socioeconomic development in the country. It is believed that unemployment arises from the current education structure and the Jordanians' norms of favoring certain professions which are not on demand at the local labor market. To overcome this serious situation, there is an urgent need for an educational reform program at all levels (schools and universities) for matching the labor market demand. This program should be accompanied with a behavioral change campaigns for addressing the "shame culture" issue that is inhibiting many Jordanians from working in certain professions considered as "inferior".

Over the last two decades, the government of Jordan has undertaken some broad economic reforms in a long-term effort to improve living standards. These measures have helped in improving economic productivity and have put the country on the foreign investment map. The main challenges facing the country are reducing dependence on foreign grants, reducing the budget deficit, and creating investment incentives to promote job creation.

The GOJ, with the support of the UNDP, launched in January 2013 the "Jordan Poverty Reduction Strategy". This Strategy (PRS) 2013-2020 has been aligned with other national strategies (such as the national employment strategy, education strategy, transport strategy, tourism strategy) and also with the Millennium Development Goals). Given the stated vision of combating desertification strategy, it is also crucial to align the NAP with the new PRS. The overall goal of PRS is: "To contain and reduce poverty, vulnerability and inequality in the current socio-economic environment of Jordan, from 2013 to 2020, through the adoption of a holistic and result-oriented approach, which targets poor and below middle class households". The PRS considers most of the relevant policies and strategies related to the National Strategy to Combat Desertification that was adopted in 2006 and included five main programs: (i) Desertification Information System; (ii) Drought Prediction and Desertification Control; (iii) Capacity Building and Institutional Development, (iv) Restoration of Degraded Ecosystems of Rangelands and Forests; and (v) Watershed Management.

2.2. Stakeholder Analysis

The level of involvement or role in the processes of planning, implementation, financing and M&E was assessed using participatory analysis based on the expected roles of the potentially involved institutions in the NAP process. The analysis of related stakeholder main roles include: 1) Planning and policy advice; 2) Implementation (direct implementation as an implementing institutions or indirect implementer-support implementation process); 3) Financing (direct financing or providing necessary support in obtaining the financing); and 4) Monitoring & Evaluation and Impact Assessment of the approved programs/activities/actions…etc.

[14] Gender Mainstreamed in Improved Pastoralism- IUCN - ROWA 2013.

2.3. Existing Investment[15] in SLM

2.3.1 SLM Best Practices

Valuable experiences dealing with the sustainable development and natural resource management activities, including development in water catchment areas and combating land degradation, are made or have been gained through past and on-going national and regional initiatives.

The programs and projects that were implemented in the country and related to land degradation and sustainable land management are mostly community based, and generate information and knowledge in terms of methodologies, approaches, and technical solutions to LD problems, taking account of the national and regional experience in arresting land degradation, and contributing to pursue water and biodiversity conservation.

A series of best practices for SLM that are similar to the ones suggested by FAO, supported by government and non-governmental organizations has proven to be successful in Jordan. The following are examples of SLM best practices being practiced in Jordan through different projects and programs:

- Through minimum tillage, improved fallows, and promotion of adapted forms of the Conservation Agriculture.
- Restoring overall soil fertility (through increasing organic matter with use of green manure / improved fallows, incorporation in soil of plant residues, animal manure, nutrient replenishment).
- Implementing soil conservation measures (terraces, contour tillage, stone walls).
- Improving water management through water harvesting (for crop, range and forest areas).
- Regeneration of forests, including reforestation of forests, steep slopes orother fragile areas.
- Rehabilitation / re-vegetation of degraded range.
- Restoration of community rangeland governance and management practices, including rotational and seasonal grazing patterns.
- Improving management of ruminant animals including veterinary services and awareness programs on animal diseases.
- Maintenance of stream flow and rehabilitation of water springs.
- Measures to improve livelihoods through sustainable intensification of natural resource use (including introduction of business oriented organic farming in raifed agriculture, livestock production and non-timber forestry products (e.g. honey prduction, dairy products, medicinal and herbal plants).

In general, the main objectives of the projects were or are to increase agricultural production and rural incomes in a sustainable and environmentally friendly way. This includes the restoration of supporting ecosystem services, such as improving rangeland, agricultural land (soil and water conservation) and forest land. This also includes improved availability or access to agricultural inputs, expansion of cultivated area, control of soil erosion and sedimentation, introduction of efficient water harvesting and irrigation systems, better effectiveness of extension services, afforestation activities, and improvement of rangelands.

Reviving HIMA System

Hima is a traditional institution of tenure which has governed rangeland resources in Jordan and the Arabian Peninsula for over 1400 years. Since then, the community-managed system has evolved slightly to signify the setting aside of land to allow regeneration and sustainable use of natural resources for the benefit of the communities living adjacent to it.

IUCN with the Ministry of Agriculture and Arab Women Organization have identified an opportunity to bridge the policy implementation gap in Jordan through the revival and support of the Hima system, for scale up to the entire Arabian Peninsula. Revival of Hima is carried out by linking communities with local government to legitimize their land management strategies. This enables communities to establish and enforce rules and regulations for rangeland resources, promoting natural re-vegetation and recovery of soil and water cycles. Based on Hima and a preliminary economic valuation conducted by IUCN 2012, the government is revising its rangeland policy.

[15] Investment plan means existing initiatives and practices.

2.3.2. Assessment of LD and SLM Mainstreaming in Jordan

Interaction with major local stakeholders and the assessment of National Priority Capacity Constraints for Implementing the Rio Conventions and their Synergies (National Capacity Self-Assessment for Global Environmental Management; NCSA, 2007) allowed the identification of the main bottlenecks and barriers that hinder mainstreaming of sustainable land management in Jordan.

Overall, the bottlenecks and barriers can be grouped into three main categories:

I. Knowledge and Technology,
II. Institutional and Governance, and
III. Economic and Financial.

In the area of **Knowledge and Technology**, effective knowledge management and networking (through unified/integrated M&E systems) between various stakeholder sectors and institutions is lacking and the absence of integrated land use planning approaches also impedes the synergies that would be possible through the application of the UN Conventions. In addition, awareness raising and outreach programs and even education (still too separated from research) are considered an end by themselves while more emphasis should be given to real capacity development of both, resource users (empowerment and participation of rural communities are still lagging behind because of insufficient investment in their training on one side and due to inadequate traditional knowledge retrieving mechanisms on the other) and service providers. Also, technology transfer is still dealt with in a compartmental way irrespective of the mutually supportive value the technologies should have.

Dana Biosphere Reserve

Established in 1989, Dana Biosphere Reserve is Jordan's largest nature reserve, covering some 320 km^2 of rugged and beautiful landscape along the face of the Great Rift Valley.

The overall Dana Biosphere Reserve is divided, based on grazing practices, into three distinct locations: the **Core Zone** (no grazing), **Barrat Dana** or **Al-Barrah** (regulated grazing) and **Wadi Araba** (uncontrolled grazing or the land of commons). The Royal Society for the Conservation of Nature (RSCN) is interested in the sustainable integrity of the Dana Biosphere Reserve which requires proper management inside the reserve and in the surrounding areas.

Prolonged wintering (1st of October to end of March) of grazing animals in Al-Barrah area depleted the herb layer, damaged ligneous plants, and contaminated water wells. The continuous overgrazing and woodcutting were the major threats to the natural environment Al-Barrah.

In 2009, RSCN with collaboration **of Sustainable Management of Marginal Drylands (SUMAMAD)** project funded by the Flemish Government of Belgium and implemented by UNESCO-MAB in collaboration with the United Nations University, International Network on Water, Environment and Health (UNU-INWEH) prepared a work plan (2009-2014) for sustainable management of grazing resources of Al-Barrah.

The work plan consisted of four major components:
i) Collection, compilation and analysis of the available information,
ii) Baseline study of the targeted pastoral communities and the biophysical aspects of Al-Barrah,
iii) Development of community-based grazing management, and
iv) Development of a monitoring program.

Al-Barrah grazing area is now managed by the local community through "Al-Barrah Cooperative for Livestock Production".

The preparation and implementation of a comprehensive knowledge management strategy, would allow achieving common goals by facilitating collaborative work among all stakeholders at different levels, using all information available, allowing the identification of areas for strengthening and designing appropriate action plans at different levels. In addition, the application of a participatory M&E system would allow stakeholders to assess the impact of projects according to their objectives. All these elements would result in a more reasonable use of financial resources and a better empowerment of stakeholders to deal with land degradation.

Regarding the **Institutional and Governance** aspects, Jordan has made a great deal of progress and has gained achievements by setting key strategies, policies and in preparing a good quality legislative framework. However, the application of such framework leading to concrete experiences that *integrate* the sustainable management of resources and poverty alleviation efforts is still incipient and limited to pilot experiences, leading to serious issues of sustainability of investments in most of the country's rural areas where this coordination does not take place.

Therefore, the adoption of a fully integrated land use planning approach (such as the integrated "ecosystem approach") in national programs to combat land degradation needs refinement. In addition, the existence of an adequate and integrated land use planning supporting legislation would also contribute to remove this barrier. Another issue is related to insufficient or inadequacy of law enforcement systems for the application of the legal framework existing in Jordan.

Furthermore, greater effort is required to fine-tune and provide effectiveness to the inter/intra-institutional coordination framework for the different environmental and land resource stakeholders to play their role in a truly synergetic manner.

The Ecosystem Approach

The Ecosystem Approach is a strategy for the integrated management of land, water and living resources, which enables sustainable natural resource management and conservation of biodiversity. The Ecosystem Approach was developed by IUCN and adopted by the Convention on Biological Diversity at its fifth Conference of the Parties (decision V/6). The Ecosystem Approach applies appropriate scientific methodologies focused on levels of biological organization which encompass the essential processes, functions and interactions among organisms and their environment. It recognizes that humans and their cultural diversity are an integral component of ecosystems.

From the economic and financial point of view, the insufficient allocation of financial resources is the main barrier. The financial leverage used through price policies, fiscal policies, and improved ownership arrangements can foster sustainable resource use and in turn, facilitate the resolution of some of the other barriers highlighted above (Knowledge and Institutional). Overall, there is a need to better understand the economic and social costs of land degradation though an improved valuation system.

Rapid population growth is forcing land and ecosystem users to continuously increase pressure on local resources, at the expense of the regenerative capacities of vegetation and land resources. In addition, poverty is inducing many resource users to embark on short term coping strategies rather than long term investment in land and resources.

The overarching issue is very much the inadequacy of allocated financial resources. On one hand, there is the lack of compensation mechanisms to cover costs in switching to the SLM practices, and on the other, incentives that allow for alternative livelihoods and exit strategies are also missing. Financing fiscal leverages (e.g. tax holidays) may also raise the private sector's interest and solve the issue of the weakness of their activities in the field of combating land degradation and desertification.

2.4. Green Economy

Our ecosystems offer society a wide range of economic services and goods including, but not limited to, clean water, food, rangelands, fuel wood, climate regulation, nutrient cycling, aesthetic values, recreational services, and carbon sequestration. All members of society including urban and rural people and business entities heavily rely on these services, raw production inputs and climate stability. The unsustainable use of these valuable economic resources has led to a high cost of environmental degradation which could be estimated using well-established and internationally accepted tools. Unfortunately, the economic value of the degradation of environmental resources is still ignored in the decision making process and consequently funding to sustain these resources and to address environmental challenges continues to be low.

Jordan's Country Environmental Analysis (CEA)[16] which was completed in 2008 concluded that over the last decade, Jordan has experienced an increase in the degradation of its natural environmental resources accompanied with the increase of per capita income. The report added that land degradation had the heaviest impact on the ecosystem stability and on poor farmers' income in particular. The study estimated the Cost of Environmental Degradation (COED) by addressing immediate and longer-term impacts of degradation which have taken place in the reference year (2006). The total COED was estimated at a range of JD148-350 million, with an average of JD248 million, or 2.48% of GDP in 2006. Adding the impact of emissions on global environment would raise total cost to Jordan and the global community to JD403 million. This means that over the last 8 years, using 2006 as a reference year, the undiscounted accumulated cost of environmental degradation in prices of 2006 would be within the range of JD1.16 to 2.8 billion and if the impact on global environment is added then the cost would be JD3.2 billion.

Different measures and tools could be used for integrating the green economy in environmental strategies. Much of these measures and tools are centered on the national policy process, including: 1) Policy design and formulation; 2) stakeholders engagement; 3) integrated assessments; 4) M&E; and 5) implementation. The policy design should tackle the different regulations; market failure instruments such as taxes, subsidies; market creation instruments such as "payment for ecosystem services (PES)" and ecotourism; and poverty instruments such as "social protection". The implementation tools may include: innovative financing (trust funds); budget allocation; sustainable public procurement; and sustainable service delivery (public-private partnerships)[17].

Payment for Ecosystem Services (PES) is one of the green economy tools that is gaining more attention by many developing counties. The concept is built on providing sufficient investments and incentives for supporting green initiatives and investments in green technology for promotion of the green economy in the country. PES could be one of the "right" incentives for encouraging the sustainable use of ecosystem goods and services through encouraging the beneficiaries to fairly contribute to restoring and maintaining the flows of these goods and services.

The Ministry of Environment has recently established a new directorate for green economy. This is a very constructive step towards incorporating the economic principles in the environmental aspects in the country. The newly established directorate requires special capacity building efforts to build a team of professionals in economic and financial analysis to provide the decision makers with professional advice on environmental decisions related to investments in the dry lands, financial tools to enhance and promote sustainable land use as well as introduction of suitable technologies; and consider the monetary dimension in future policies and strategies.

[16] World Bank (2008), "Hashemite Kingdom of Jordan Country Environmental Analysis (CEA)".
[17] Usman Ali Iftikhar, (2013) A presentation titled "Overview of inclusive green economy tools and instruments", Nairobi workshop 2-4 July, Poverty Group, BDP, UNDP, New York.

2.5. Economic Valuation of the Unsustainable Land Management in Jordan

A major part of the NAP focuses on issues related to sustainable land management (SLM) in Jordan. Rangelands in Jordan are the most affected part by the unsustainable management practices. Providing economic evidence on the magnitude of the unsustainable use of rangelands could be used for justifying mobilization and additional allocation of funding for the rehabilitation of the degraded rangelands in both the steppe and Badia. This section of the NAP draws heavily on one of the background papers that was conducted to provide necessary information and data for the preparation of the Jordan aligned NAP. The economic valuation paper is dealing with estimating the cost of rangelands degradation in Jordan that resulted from several factors including desertification and the unsustainable land management. According to the Ministry of Agricultural, the rangeland productivity in the Jordanian Badia (which represents the majority of the desert areas) has decreased during the last twenty years and many indigenous plant species have disappeared. According to the MoA (2009) the edible dry matter per dunum has decreased from 80 kg/ha in 1990 to 40 kg/ha in 2010.

The livestock numbers is one of the dictating factors of land use system in the rangelands in the country. The number of sheep and goat witnessed a continuous increase since 1990. The 24-year average since 1990 was 2.742 million heads. This number has fluctuated due to many events and factors affected Jordan including the Gulf war, the devaluation of the Jordanian dinar, the waves of droughts that hit Jordan and the changes in the government policies.

Two valuation techniques for estimating the values of rangelands in Jordan were used in the background paper: 1) Direct saved economic costs in terms of the value of animal feed saved from putting animal on rangelands (grazing); and 2) Direct and indirect benefits of rangelands in terms rangelands productivity and other environmental services.

Rangelands have always been the major source of animal feeds for sheep and goat herders in Jordan either in the steppe or in the Badia. Supplemental feeds, especially barley, straw and crops' residuals were always fed to animals during winter or during drought seasons. Placing animals on rangelands (grazing) has a significant value in terms of saved cost of feed and for other biological benefits. Several assumptions were used to estimate the value of saved cost of feed in terms of monetizing the amount of grazed biomass. The applied methodology focused on three scenarios for the estimated monetary value of the total saved cost of the three types of animal feeds. In each of the three scenarios, three price levels were used for the barley and wheat brain used in feeding sheep and goats. The background paper concluded that the rangelands in Jordan provided over the last 24 years a sum of JD404 million in terms of direct saved costs of animal feed evaluated at the prices of 2013. Continuing the current practices without any new measures/projects will result in huge economic losses that may even exceed hundreds of million dinars.

The other method that was applied in the analysis focused on estimating the value of rangelands using the direct use value of grazing only in terms of grazed vegetation. Rangelands in Jordan are classified based on the most dominant vegetation type into steppe and Badia (desert). Based on the equivalent feed value of grazed vegetation, the direct value of the rangeland was estimated. The maximum attainable amount of vegetation is assumed to be in the base year of 1990 when the productivity of the one dunum of the steppe and the one dunum of Badia was 20 kg and 8 kg of dry matter, respectively. The researcher used several assumptions in the estimation process to quantify the consequences of land degradation due to the different factors affecting rangelands degradation. The estimated costs are based on the continuous decline of rangelands productivity (rangeland vegetation losses) in terms of dry matter per one dunum of the steppe and the one dunum of Badia using the year 1990 as the base year. The researcher has also assumed that the rangelands were at their best conditions of productivity (20 kg for steppe and 8 kg for Badia).

The presented estimates in this section provide a perspective on the economic value of the rangelands and the cost of their degradation. Overgrazing has decreased fodder availability without a decrease in livestock numbers that contributed to increased desertification and biodiversity loss. The cost of forage losses for grazing livestock is estimated based on barley feed units valued at barley prevailing three price levels during 2013. The results of the analysis concluded that the total accumulated production of the Badia rangelands would be 1.344 million ton of barley if the conditions of the rangelands were maintained at the conditions of the year 1990 (8 kg of dry matter per dunum). However, due to several factors of rangelands degradation, the total adjusted production over the period 1990-2013 is estimated at 937.3 thousand ton. This means that the total estimated lost production due to rangelands degradation is 407 thousand ton of barley. Converting this amount of barley into monetary terms means that the total monetary loss is JD130 million if we value barley at the prevailing – unsubsidized market price.

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Chapter Three: Assessment of NAP-2006

3.1. Relevance and Implementation of NAP-2006

The various national institutions (line ministries, NCARE, RSCN, RBG, universities…) and international organizations (IUCN, ICARDA, IFAD, WFP, FAO, UNDP…) working in Jordan implemented a wide array of land-related activities such as the Badia Restoration Program (BRP), Zarqa River Basin Project, Yarmouk Basin Project, Sustainable Land Management in Southern in Jordan, Agro-Biodiversity, Integrated Management of Jordan Rift Valley, Hima System, Grazing Reserves, Nature Reserves and others.

There is no doubt that Jordan has made significant progress towards achieving compliance with UNCCD obligations. One of these important achievements is the development and implementation of the National Strategy and Action Plan to Combat Desertification (NAP-2006). The NAP-2006 was prepared according to certain terms of reference which shaped its design as "project-based" within the context of UNCCD to facilitate funding of the proposed projects. The NAP-2006 is a good initiative in the right direction to provide a framework for an action to combat the accelerating threats of desertification in the country; but it needs extra work to make it a strategic document capable of dealing with DLDD, biodiversity and climate change issues which are important for community livelihoods and the national economy, especially in arid areas with limited natural resources such as Jordan. Additionally a more strategic document is required to guide and harness a wide range of stakeholders and contributors to tackling DLDD, in order to achieve a mobilization of popular support for addressing this significant environmental and developmental concern.

To make the NAP-2006 more strategic, two processes were performed: a review of the NAP-2006 and its in relation to the UNCCD 10-year Strategy.

Revision of NAP-2006

- The review of the NAP-2006 revealed the following shortcomings:
- It is designed as a stand-alone combating desertification program which narrowed the options and the entry points to find its way to implementation.
- One of the specific objectives of the NAP-2006 is to highlight desertification as a national priority. The NAP proposed a traditional awareness project which is not adequate to address complex issues such as desertification and land degradation. The awareness project should be upgraded to an effective communication and outreach plan to raise awareness and initiate an effective lobby to address these issues.
- The analysis of the biophysical and socioeconomic conditions of the country highlighted two crucial root causes of desertification and land degradation: land tenure and land use planning. The two root causes were not addressed properly.
- The proposed programs and projects are not prioritized; prioritization is important for resource allocation especially in a country like Jordan with great dependence on foreign development assistance.
- The NAP was designed as a project-based and not as a result-based program and is not expected to provide sufficient data and information to assess its impact.
- Designing programs/projects relying solely on external funding which may or may not be fulfilled is a risky approach. Greater emphasis was needed on how public and private resources within Jordan would be mobilized to address priority actions.
- Desertification has multi-dimensional impacts on soils, water, vegetation, animals, wildlife and human which requires an "ecosystem approach" for effective management of natural resources. The concept of the ecosystem approach was not emphasized in the proposed programs and projects.
- Expected outputs were listed for each proposed project but without specifying the indicators for an objective verification. Performance indicators are usually used for project evaluation whereas impact indicators are used for evaluating the overall change made by the implementation of the NAP-2006.
- The NAP lacks a monitoring and evaluation plan to assess the progress made at the project, program and the entire action plan. The M&E system is highly needed for proper planning and making necessary modifications in response

to situational changes for achieving the objectives of the NAP-2006. The M&E system should include indicators of both outputs and impacts, recognizing that long-term impacts may take longer to deliver, and testing assumptions about the relationship between outputs and impacts.

Implementation Status of NAP-2006

Since its launching in 2006, the implementation of the NAP-2006 can be objectively described as "limited". The implementation was constrained because the focus was on a few projects, rather than on broader targets to which multiple stakeholders could contribute. This includes non-governmental actors who are willing partners but were not well accommodated within the NAP. This means that the limited progress in implementing the NAP does not necessarily mean that there has been limited progress towards addressing DLDD; and the revised NAP should create an improved framework for coordinating multiple interventions. The constraints limiting the achievements of NAP-2006 are mainly institutional and financial.

Institutional Gaps

- The National Committee for Combating Desertification (NCCD) was established as an obligation to UNCCD to promote the implementation of the NAP. It acts as an advisory panel for the Ministry of Environment (MoEnv) on the desertification convention. Presently, the NCCD is not fully functioning because it is not representing all stakeholders (governmental and civil institutions) directly engaged in desertification and drought issues.
- The MoEnv is the lead authority for implementing the NAP supported by the line institutions engaged in combating desertification, but through time the MoEnv lost this vital role resulting in weak coordination among these institutions.
- The MoEnv has many obligations towards national, regional and global institutions and organizations. Deficient capacity especially in planning and monitoring fields obliged the Ministry to rely almost totally on others (mainly individual experts) to perform these vital roles through contracting. This reliance hindered building the capacities needed by the Ministry.
- Desertification is a multi-sectoral issue and there is no clear mechanism for cross-sectoral coordination and responsibility.

Financial Gaps

- The NAP-2006 projects were designed without having any idea about the available funds from internal and external sources. There is a lack of mechanisms to secure needed funds to implement the proposed activities of NAP-2006 which is a major obstacle impeding the implementation of the proposed projects.
- The role of private sector especially the banking and industry sub-sectors as potential donors to finance the implementation of the NAP was overlooked, particularly considering the role they can play in facilitating and augmenting the existing investments made by land managers.

3.2. Assessing NAP-2006 against the UNCCD 10-Year Strategy

The conformity of the NAP-2006 document to the objectives of the UNCCD 10-year Strategy was assessed. The assessment revealed several gaps that should be bridged to better implement the NAP.

3.2.1. Strategic Objectives

From a strategic perspective, the NAP gaps include:

- Lack of a communication strategy to raise the awareness of all stakeholders, in particular the line institutions and decision makers, on the causes, consequences and impact of DLDD. In-depth understanding and appreciation of DLDD and their links and impact on poverty is essential for developing a shared vision and a common understanding of DLDD issues.
- Lack of a national monitoring program to track the changes and trends in the conditions of affected populations and ecosystems by DLDD. The monitoring results are useful for amending or strengthening the management plans in place, reforming policies, and updating all stakeholders on the impacts of DLDD.
- Lack of promoting awareness and traditional knowledge of and include local populations, particularly women and youth, and civil society organizations in the implementation NAP programs.
- Low mainstreaming of DLDD issues in the national development plans (e.g. Poverty Alleviation Strategy) and budgetary framework. Partnering with line institutions is a key for resource mobilization.
- Lack of coordination among the three Rio convections which are all aiming for sustainable use of land resources and natural ecosystems.
- The ultimate goal of the Strategy is to improve the living conditions of the affected people and support poverty reduction. The NAP does not adequately link the priority activities to poverty reduction.
- The Strategy focuses on global environmental benefits (increasing carbon stocks in affected areas). These benefits were not mentioned in the NAP.
- Lack of structured mechanisms to mobilize needed resources for implementation.

3.2.2. Operational Objectives

From an operational perspective, the NAP gaps include:

- Low engagement of different stakeholders, in environmental CBOs as well as human rights NGOs, in national committees relevant to DLDD issues in addition to lacking of gender representatives and consideration of gender issues.
- Lack of an entity or forum catering for knowledge management (collection, storage, analysis and reporting) and sharing with key stakeholders as well as use of local traditional knowledge.
- Deficient orientation on DLDD issues in the educational programs at the university level and in the research of academia and national agricultural research centers.
- Lack of implementing the action programs of the National Capacity Self-Assessment for Global Environmental Management (NCSA) especially the planning, monitoring and evaluation needs relevant to DLDD issues.
- Lack of translating research results into outputs for extension to advocate for the practices of sustainable land management and into outputs for policy uptake taking into consideration different stakeholder needs as well as addressing gender sensitivity.
- Lack of networking among national research and technological institutions relevant to DLDD issues.
- Lack of mechanisms to secure funds from local (core governmental budget, private sector) and external sources.
- The following actions and measures are suggestedto fill the identified gaps:
- Through a goal-oriented approach, supported with adequate communication, mobilize a ground-swell of popular support for combating de-

3.3. Actions and Measures for Filling the Identified Gaps

sertification, including CBOs, NGOs, IOs, research institutions, and government agencies.

- Community outreach to improve awareness of ocal community in DLDD impact and restoration actions.
- Investment in research and knowledge management focusing on finding solutions to DLDD threats. Establishment of DLDD knowledge forum (DLDD-Forum) representing all national relevant scientific, civil society, gender representatives and research institutions to develop a research strategy focusing on DLDD issues. The forum can serve as the advisory panel for decision-makers on the issues related to DLDD. Networking of the DLDD-Forum with relevant DLDD knowledge centers worldwide is an asset for sharing knowledge with key partners.
- Strengthening the Coordination Unit of the 3-Rio Conventions at the MoEnv to facilitate the mainstreaming of activities of the three conventions into the programs of key institutions. The allocation and use of resources (facilities, human, and finance) of the three conventions will be efficiently utilized considering gender sensitivity as well.
- Fostering community-based approaches through multi-stakeholder dialogue (e.g. *Hima* system, rangeland cooperatives, community-based grazing Management, co-management or protected areas)
- Promote integrated ecosystem approaches for conservation and sustainable use of natural ecosystems (e.g. integrated-watershed management or landscape restoration approaches). A good example on these approaches is the Community-Action Plan of the Badia Restoration Program (CAP-BRP), the Ministry of Environment.
- Developing of a national monitoring program (NMP) to monitor the conditions of affected populations and ecosystems. The NMP serves many purposes: a source of reliable and updated information for DLDD-Forum, national research centers, and decision-makers. Better use of monitoring and data to validate different approaches, use of economic valuation and cost-benefit analysis to identify value-for-money options for scale-up. These valuable services encourage local and external donors to support this program.
- Orientation of curricula of DLDD at national universities improves the knowledge of graduates on these issues. Recruited graduates with good background on DLDD in involved institutions in DLDD issues will contribute significantly in building the human-capacity of these institutions.

3.4. Setting Priorities

- There are many things to do with little time left to achieve the objectives of the UNCCD 10–year Strategy (2008-2018) through aligning the NAP-2006. High impact, urgency, low requirement of resources and requirements of relatively short time to put in place are some of the criteria for ranking the identified priorities. The identified priorities include:

1. Re-composition of the institutionalization of National Committee for Combating Desertification (NCCD) with new terms of reference.
2. Development of a strategy to promote the engagement of relevant stakeholders including CBOs, women and youth groups in national committees, decision-making, and activities related to DLDD issues.
3. Strengthening the 3-Rio Unit with clear terms of reference at the Ministry of Environment to coordinate the programs of the three conventions.
4. Development and operation of a national monitoring program (NMP) to monitor the conditions of affected populations and ecosystems by DLDD threats.
5. Establishment of DLDD knowledge forum (DLDD-Forum) representing all relevant research and scientific institutions in the country.
6. Development and operation of communication and outreach strategy to raise awareness and traditional knowledge of and include local populations, particularly women and youth, and civil society and research organizations on DLDD issues.

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Chapter Four: Aligned NAP 2015 - 2020

Mainstreaming DLDD issues into national policies and frameworks is facing a number of interrelated institutional, financial, legal, knowledge and policy barriers which requires an integrated approach to strengthen the mainstreaming process The integrated approach is the basis of the aligned NAP in mainstreaming land-related issues into national cross-sectoral policies. The revised NAP provides a broad strategic framework under which multiple actors and actions can contribute according to their capacities; delivery of the NAP does not rely exclusively on a narrow set of prescribed projects. However, a few indicative high-value actions are highlighted under each objective to help in national prioritization exercises.

4.1. Vision and Objectives

The agreed vision is: *"Productive and sustainable use and management of land resources to support poverty reduction, environmental sustainability and national economy".* This vision focuses on sustainability of land resources, enhancement of population livelihood, and contribution to the national economy.

The realization of this vision could be achieved by the five Operational Objectives of the UNCCD 10-year Strategy: Advocacy, Awareness Raising and Education; Policy Framework; Science, Technology and Knowledge; Capacity Building; and Financing and Technology Transfer.

The following tables outline the targets, indicators, responsible parties, and risks for each outcome of the Operational Objectives and then each table is followed by a brief on needed activities to achieve the targeted outcomes.

Five Operational Objectives are complementary and closely integrated as follows:

Operational Objective 1: Actively influence relevant national and local processes and actors to adequately address desertification/land degradation and drought related issues.

- ✔ The first Operational Objective provides the communication, advocacy and awareness raising that is necessary to ensure multi-stakeholder buy-in to the strategy, to the national effort to combat DLDD and promote SLM solutions, and for effective integration of DLDD with efforts to conserve biodiversity and address climate change.

Operational Objective 2: Develop an enabling environment for solutions to combat desertification/land degradation and mitigate the effects of drought.

- ✔ Objective 2 addresses the policies, regulations and institutions that will enable coordinated action to address DLDD at policy level and on the ground, and to integrate effectively with objectives under other global and national commitments.

Operational Objective 3: Strengthen the colletion and use of scientific evidence and knowledge on desertification, land degradation and mitigation of the effects of drought.

- ✔ The third objective provides the monitoring system; the establishment of indicators, improvement in scientific assessment and effective gathering; validating and sharing of knowledge, including local knowledge, which are critical for cost-effective implementation of SLM as well as appropriate monitoring and evaluation of the NAP.

Operational Objective 4: Build capacity to prevent and reverse desertification/land degradation and mitigate the effects of drought and to enable sustainable land and ecosystem management.

- ✔ Operational Objective 4 builds the capacity to deliver on the commitments of the revised NAP, including capacity for inter-sectoral collaboration and capacity to integrate DLDD in multiple sector plans (including the green economy), as well as nation-wide capacity to monitor and implement DLDD-related actions through stronger education and training institutions.

Operational Objective 5: Increased mobilization and improved coordination of national and external financial and technological resources.

- ✔ The final Operational Objective addresses the components of an integrated financing strategy that is required for the delivery of the first four objectives.

Financing, monitoring and communicating DLDD and SLM are also treated in three specific narrative sections at the end of this chapter, where these cross-cutting elements extracted from the Five Operational Objectives are presented in a consolidated explanation.

For Jordan to report its achievement regarding Strategic Objectives 1 and 2 of the UNCCD Strategy, several activities should be fulfilled. For Strategic Objective 1, mapping of poverty in the country and assessment of dietary energy consumption by affected people are needed. For Strategic Objective 2, mapping of land productivity, updating the land cover map, mapping vulnerability of the different ecosystems or agro-ecological zones to climate change and drought, reduction in total area affected by desertification/land degradation and drought are of vital importance. These needs will provide important information that will serve as baseline data to assess the impact of implementing the aligned NAP on the conditions of affected people in the affected ecosystems. These gaps are addressed primarily through Operational Objective 3 which strengthens the collection and use of scientific evidence and knowledge on desertification, land degradation and mitigation of the effects of drought.

4.2. Operational Objectives Action Plan

Table 2. Operational Objective 1: Advocacy, Awareness Raising and Education

To actively influence relevant national and local processes and actors to adequately address desertification/land degradation and drought related issues				
OUTCOMES	**INDICATORS**	**TARGET**	**RESPONSIBLE STAKEHOLDER**	**RISKS**
1.1. Enhanced synergies of DLDD issues within climate change and biodiversity conservation at local and national level	• Number and type of DLDD issues reported in National Reports (different ministry reports, CBD, CC National Communication Reports, PRAIS). • Number of DLDD programs/activities in different ministries (MoA, MoWI)	• DLDD, BD and CC integrated in %100 of key sectoral ministerial programs/ activities and annual reports (MoA, MoWI) • Annual report on progress towards integrated results of the 3 Rio Conventions	• L: MoEnv and NCCD • S: MoA, MoWI, Prime Ministry	• Lack of consensus over DLDD issues (causes, indicators, impacts, lessons learned…) • Insufficient willingness for collaboration between line ministries
1.2. Improve mainstreaming of DLDD issues in relevant national strategies (poverty reduction, women strategy, youth strategy)	• At least 50% of national strategies reflect DLDD issues as a way to improve livelihood	• At least 50% of all new or revised strategies incorporate DLDD issues	• L: NCCD • S: Prime Ministry, Parliament, Women Commission	• Stakeholders not given the official mandate to mainstream the DLDD issues into the national strategies/policies/action plans • Inadequate political will for DLDD mainstreaming
1.3. Increased involvement of civil society organizations (CSOs) and science and technology institutes (STIs) in advocacy, awareness raising and education initiatives related to DLDD issues	• Percentage of yearly increase of DLDD-related programs developed and implemented at national and local levels including specific initiatives that target vulnerable groups, women and youth	• CSOs and STIs to address DLDD in their advocacy, awareness and educational initiatives	• L: MoEnv, MoEd • S: MoEdu, IUCN, NCARE, Women Commission, international organizations working in Jordan	• CSOs and STIs have insufficient resources and capacities to engage in DLDD actions • Donor priorities cannot be steered towards DLDD, or other regional and national priorities overtake the DLDD agenda

Recommended high priority for delivering Operational Objective 1:

1. NAP is endorsed by ministerial forum and convened by the Office of the Prime Minister to establish expectations and roles in implementation of the NAP
2. Establish a platform for networking between CSOs and STIs to advocate and increase awareness on DLDD related activities
3. National (government-led) awareness campaign on DLDD and the opportunities for SLM as an engine for growth

Table 3. Operational Objective 2: Policy Framework

To develop an enabling environment for solutions to combat desertification/land degradation and mitigate the effects of drought				
OUTCOMES	**INDICATORS**	**TARGET**	**RESPONSIBLE STAKEHOLDER**	**RISKS**
2.1. Identification of institutional barriers and opportunities to combating desertification	• Baseline assessment of barrier analysis and institutional strengthening strategy	• Validated review of institutional barriers and strategy for addressing them	• L: MoA, NCARE • S: MoEnv, MoWI, CSOs, research institutions, international organizations working in Jordan	• Lack of capacity needed for conducting baseline studies on SLM barriers and drivers
2.2. NAP, NBSAP and NAPA integrated in development planning through amendment of identified policies	• Number of relevant policies integrating SLM, biodiversity conservation and drought mitigation	• National plans in key sectors, including at least agriculture, environment and water, address DLDD, biodiversity loss and climate change	• L: Prime Ministry, MoEnv, MoA, MoWI • S: CSOs, municipalties, MOI, MoSD and MoF	• Political willingness is lacking to amend policies • Sectoral conflicts of interest arise in relation to harmonizing policies between sectors
2.3. Establishment of public institution to coordinate SLM interventions on the ground and at policy level	• Number of coordinated actions on the ground and at policy level	• In the first year of implementation of the NAP, the NCCD restructured/reformed into an effective institution and coordinating policy, investment and reporting on DLDDs	• L: NCCD • S: MoF, MoPIC, municipalities MoA, MoWI, MoEnv	• Public resources unavailable for institutional development • Lack of institutional commitment in hosting ministry

Recommended high priority for delivering Operational Objective 2:

1. Publication of a review of policy opportunities, gaps and policy implementation status at national and local levels to be fed into and guide national budgeting processes
2. Establishment of inter-sectoral mechanism for improved coordination of SLM-related interventions, integrated with NBSAP and NAPA priorities and convening annual coordination meetings

Table. 4 Operational Objective 3: Science, Technology and Knowledge

Strengthen the collection and use of scientific evidence and knowledge on desertification, land degradation and mitigation of the effects of drought				
OUTCOMES	**INDICATORS**	**TARGET**	**RESPONSIBLE STAKEHOLDER**	**RISKS/ASSUMPTIONS**
3.1. DLDD and SLM monitoring system established and covering poverty, livelihood systems, land-use/land-cover change/ LULUCF, rangelands …	• Frequency and acceptance of DLDD monitoring reports	• In the first year, a nationa lbaseline assessment of DLDD and related vulnerability carried out • In two years, a functioning monitoring system established with agreed indicators for preliminary monitoring	• L: MoEvn • S: MoA, MoWI, STIs, CSOs, inter-governmental organizations and governmental organizations	• Lack of agreement and institutional buy-in for monitoring indicators and protocols • Insufficient public resources to establish routine monitoring
3.2. Increased quality of scientific data on DLDD and SLM innovations/ technologies	• Number of peer reviewed papers on DLDD and SLM in Jordan	• At least 10 peer reviewed publications per year	• L: MoEnv, DOS • S: Line ministries, national research centers, STIs, CSOs, IOs working in Jordan	• Scientific institutions lack the resources and skills to conduct high-quality research
3.3. Effective systems for validating and sharing knowledge, including local knowledge, are in place to support policy and decision makers	• Number of studies, briefing notes and related communications on DLDD science, technology and knowledge taking into consideration women knowledge as well • Number of success stories documented and disseminated	• National level knowledge hub established by the second year • By year 2, a suitable mechanism for review of local and scientific knowledge is approved to enable validation of studies and experiences	• L: DOS • CSOs, STIs, MoA, MoWI	• Insufficient willingness and interest from stakeholders to provide knowledge and information for dissemination • Lack of agreement over validating science and knowledge from different sources

Recommended high priority for delivering Operational Objective 3:

1. Establish national knowledge sharing system on DLDD, climate change adaptation, and SLM practices through a governmental information portal
2. Establish national monitoring system on desertification, land degradation and drought incorporating data on climate change adaptation, drought mitigation, and restoration of degraded lands including local indicators and taking into consideration knowledge of vulnerable groups, youth and women..

Table 5. Operational Objective 4: Capacity Building

Build capacity to prevent and reverse desertification/land degradation and mitigate the effects of drought and to enable sustainable land and ecosystem management				
OUTCOMES	**INDICATORS**	**TARGET**	**RESPONSIBLE STAKEHOLDER**	**RISKS**
4.1. Increased capacity for inter-sectoral and cross-institutional coordination for more sustainable ecosystem management	• Number of intersectoral and inter-institutional plans, agreements and initiatives	• All relevant ministries and departments are capable of reflecting DLDD in annual plans, activities and reporting	• L: Prime Ministry, MoEnv • S: Line ministries, CSOs and IOs	• Stakeholder institutions have overlapping mandates that impede progress towards collaboration • Inadequate leadership to promote effective collaboration • Institutions are unaware of the value of cross-sectoral collaboration and the risks of sectoral approaches
4.2. Increased capacity of the Ministry of Environment to support the newly established Green Economy Directorate	• Green Economy Directorate incorporates DLDD and SLM into program strategies and annual plans	• Green Economy Directorate integrates DLDD in all relevant plans and strategies	• L: MoPIC, Prime Ministry • S: Line ministries	• Lack of political support for the Green Economy Directorate and low priority of green economy development issues
4.3. Stronger capacity for education and professional training in SLM, DLDD monitoring, environmental economics	• Number of graduates with improved understanding of DLDD taking into consideration gender % • Number of equitable career professionals with improved understanding of DLDD	• DLDD integrated into at least 5 courses at university degree and higher degree courses in the natural and social sciences • One DLDD professional training program established in a reputed training institute with turnover of at least 100 trainees per year	• L: MoEnv • S: Line ministries, NCCD	• Insufficient resources for training institutions to mainstream DLDD courses • Insufficient demand for training

Recommended high priority for delivering Operational Objective 4:

1. Establishment of centers of excellence and training programs in DLDD, SLM, and related subjects including mainstreaming into existing university curricula based on training needs assessments, taking into consideration the needs of gender sensitivity
2. Establishment of mechanism for routine SLM coordination between sectors and with non-governmental actors

Table 6. Operational Objective 5: Financing and Technology Transfer

Revised Objective: Integrated financial strategy to mobilize and improve coordination of national and external financial and technological resources				
OUTCOMES	**INDICATORS**	**TARGET**	**RESPONSIBLE STAKEHOLDER**	**RISKS**
5.1. Increase in national budgeting and budget monitoring across sectors for direct and indirect actions to combat desertification	• Baseline established of both direct and of indirect expenditure (x% of national budget) and increase both direct and indirect expenditure on DLDD incrementally by ½% of total budget annually • Annual report on non-governmental direct and indirect actions and expenditure to combat desertification	• Annual report on non-governmental direct and indirect actions and expenditure to combat desertification	Responsible partners for national budgeting: • MoF; • MoPIC; • MoEnv & MoA (for requesting the funding) Responsible parties for establishing the baseline: • MoEnv & MoA (for requesting the funding) • DOS • NCARE	• Restricted access to national budgeting processes • Limited access to baseline information
5.2. Increase in targeted resource mobilization from multilateral and bilateral donors and international financing institutions	• Number and size of projects	• Line ministries (MoWI; MoA) reflect desertification in their annual plans as a top priority and MoPIC to give desertification a high priority	• Line ministries, MoPIC	• Other environmental priorities displace desertification in sectoral planning
5.3. Identify and mobilize innovative sources of finance, including private sector investments, specific investments from the banking sector, corporate social responsibility, and voluntary contributions	• Establish baseline of private, corporate, and volunteer investments in combating desertification (x%) and increase by %1 annually	• National level knowledge hub established by the second year • By year 2, a suitable mechanism for review of local and scientific knowledge is approved to enable validation of studies and experiences	• L: DOS • CSOs, STIs, MoA, MoWI	• Insufficient willingness and interest from stakeholders to provide knowledge and information for dissemination • Lack of agreement over validating science and knowledge from different sources
5.4. Increase in the level of technology transfer from other countries to new technologies transferred per year	• Number of new technologies transferred (per year)	• Two new technologies transferred per year	• Line ministries, development partners, NCARE, and universities	• Appropriatetechnologies may not be identified • Absence of safeguards on new technologies may hinder adoption

Recommended high priority activities for delivering Operational Objective 5

1. Updating\development of IFS 2008 or development of an integrated investment framework/strategy, based on analysis of potential local and external financial sources interested in DLDD and how these financial sources can be mobilized to serve DLDD. Include advice on including SLM actions in the budgetary framework and pursue high priority activities for funding through international financial institutions
2. Establish a national mechanism for monitoring investments and coordinating learning of multiple stakeholders in SLM to optimize allocation of resources

4.3. Enabling Environment

The enabling environment refers to the policy, legal and institutional framework through which efforts to combat DLDD and pursue SLM solutions will be made possible. The national sectoral plans and policies relevant to desertification and SLM were addressed in the National Capacity Self-Assessment for Global Environmental Management (NCSA) – Jordan (2007) and recently by UNDP-Jordan SLM integrated investment study (to be published in 2015).

These laws, rules, regulations and mechanisms will provide the architecture through which Jordan will monitor, implement and coordinate DLDD and SLM activities. The "enabling environment" is principally addressed through **Operational Objective 2:** Policy Framework, which aims "To develop an enabling environment for solutions to combat desertification/land degradation and mitigate the effects of drought".

Another important dimension in any enabled environment is gender. The gender is a cross-cutting issue along the different Operational Objectives. This aligned NAP involves engaging affected communities and stakeholders in finding creative solutions that are good for people and good for the environment. Using gender-sensitive participatory methods for project management and policy development facilitates greater expression and consideration of both women's and men's voices, a worthwhile effort since those most intimately involved with the DLDD problem often have good ideas for the solution. The gender aspects are considered in the Operational Objectives of the Strategy through avoiding targeting specific policy areas or stakeholder groups such as the cross-cutting areas of action including advocacy, science and capacity building. Several of the expected outcomes that have been set by Parties under the Operational Objectives have direct relevance to gender aspects. The gender mainstreaming has been the principal methodology used to ensure the integration of a gender approach into any development and/or environmental efforts. Gender mainstreaming seeks to recognize and bring the diverse roles and needs of women and men to bear on the sustainable development agenda. The enabling environment will be strengthened through the three outcomes detailed above, which include identifying institutional barriers and opportunities to combating desertification, integrating action programs into development planning through amendment of identified policies, and creating institutions that can coordinate SLM interventions on the ground and at policy level. Implicit within this Operational Objective is recognition that in some cases adequate policies exist and more can be done to implement them effectively. Objective 2 will also be supported through other Objectives:

Operational Objective 1: Actively influence relevant national and local processes and actors to adequately address desertification/land degradation and drought related issues.

- ✔ OO1 will generate wider awareness of and sensitivity towards solutions for DLDD and will mobilize a wider rangeland for stakeholders for more effective and participatory decision making.

Operational Objective 3: Strengthen the collection and use of scientific evidence and knowledge on desertification, land degradation and mitigation of the effects of drought.

- ✔ OO3 will provide the evidence and knowledge to ensure sound decision making and to validate those decisions through evidence-based monitoring and evaluation.

Operational Objective 4: Build capacity to prevent and reverse desertification/land degradation and mitigate the effects of drought and to enable sustainable land and ecosystem management.

- ✔ OO4 will strengthen capacities among public servants and their advisors to ensure that multiple stakeholder views can be effectively accommodated and that the best science and technology is mobilized and used to influence policy and planning.

Operational Objective 5: Increased mobilization and improved coordination of national and external financial and technological resources.

- ✔ OO5 is critical to provide the financial and technological resources required to establish an enabling environment for addressing DLDD and scaling up SLM.

As outlined in Section 2.4**,** 2.4. **Green Economy** provides an existing conceptual framework through which DLDD can be mainstreamed into Jordan's overall economic development along with conservation of biodiversity and climate change adaptation. The green economy is explicitly referred to in Operational Objective 4 (Capacity building) under Outcome 4.2: "Increased capacity of the Ministry of Environment to support the newly established Green Economy Directorate". However, support for green economic development is implicit in all work to address DLDD and further evidence is required to demonstrate the contribution of sustainable land management.

Economic valuation of ecosystem services has recently been demonstrated as an effective tool for measuring the cost and benefits of different approaches to sustainable land management and is an effective means of capturing the multiple environmental benefits or costs of different land use practices. Capacity building for economic valuation of ecosystem services is also captured under Operational Objective 4 under Outcome 4.3: "Stronger capacity for education and professional training in SLM, DLDD monitoring, environmental economics".

The communications strategy explicitly mentions communication as a means to ensure that economic valuation is better understood by target audiences and is therefore critical to ensure that SLM is mainstreamed in green economy decision making processes. Stakeholder engagement is essential for the transition to a green economy and this is a further role for the communication strategy and Operational Objective 1. Improved science and knowledge are similarly essential under Objective 3. Finally, Operational Objective 5 will develop the Integrated Financing Strategy which will include a wide range of innovative financing approaches, including instruments such as "payment for ecosystem services (PES)" and ecotourism, which will contribute directly to integrating DLDD into the green economy, and also to wider understanding and achievement towards green growth goals.

4.4. Communication and Outreach Plan

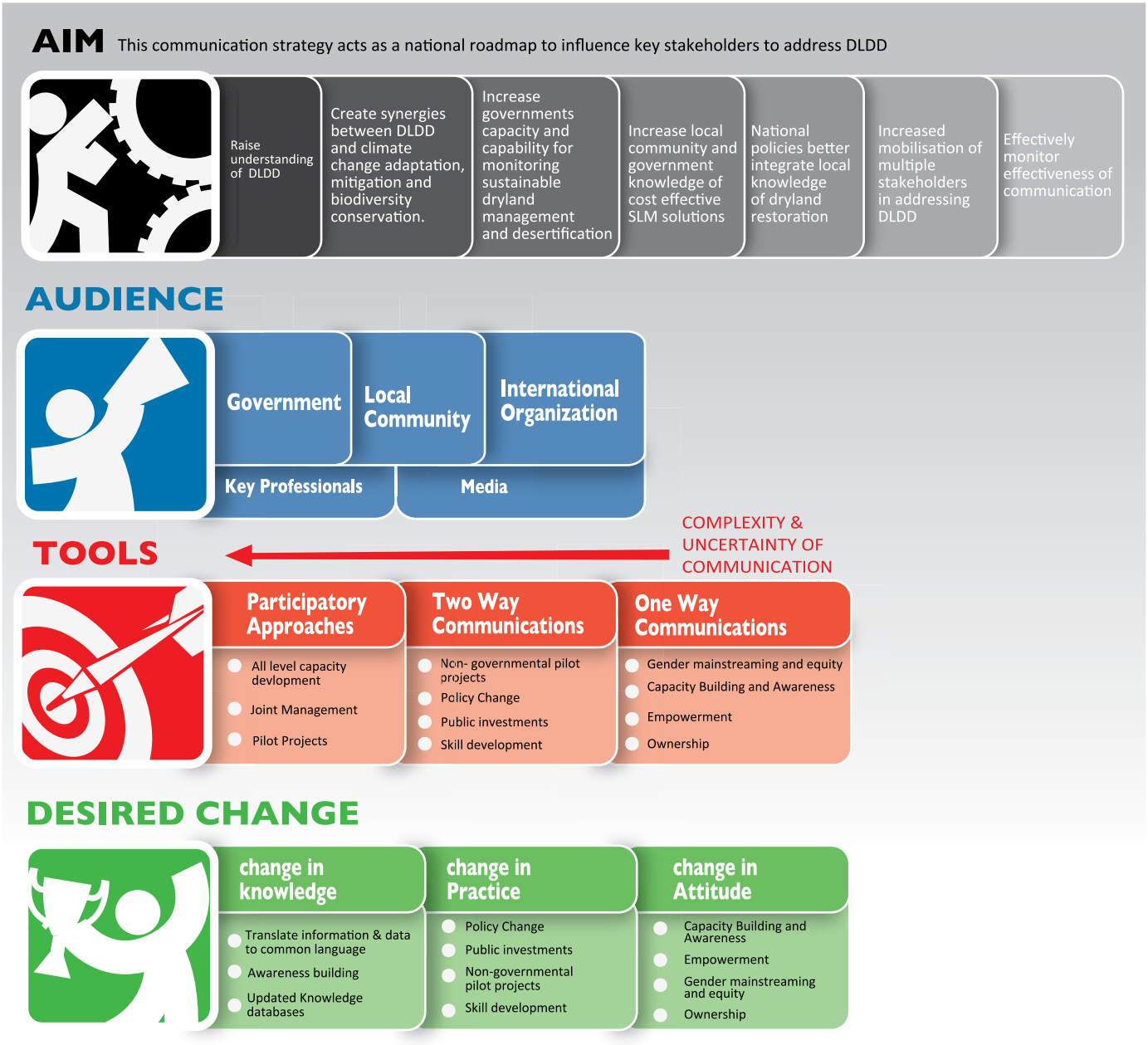
Operational Objective 1 on Advocacy, Awareness Raising and Education explicitly aims "To actively influence relevant national and local processes and actors to adequately address desertification/ land degradation and drought related issues." This relies on an effective communication and outreach strategy to ensure that the NAP moves from being a strategic document towards being a road map that is followed by a wide variety of stakeholders whose actions are critical to achieve DLDD objectives. It is understood that DLDD can only be addressed through partnerships with many stakeholders, from community to government, and a major effort is needed to coordinate these actors, starting with mobilizing and motivating key stakeholders to address desertification, land degradation and drought, through effective advocacy, awareness and education.

In the 3rd Jordanian National Action Plan (NAP) to Combat Desertification, communication was absent. The 10 year strategy recognizes the need for more effective communications that deliver effective change in knowledge, attitudes and practices (what actors know, what they think, and what they do). Therefore, the 4th Jordanian NAP introduces a communication plan and strategy into its effort to address DLDD. Specifically the following requirements should be addressed:

1. Better understanding of the role of communication in mobilizing a critical mass in the national effort to address DLDD and improved understanding of the different target audiences.
2. NGOs and governments alike are increasingly engaged as stakeholders in process leading to the conservation of drylands by using social marketing, advocacy and awareness raising.
3. Simpler, more specific messages for communicating aspects of desertification, land degradation and drought.
4. Climate change adaptation, mitigation and biodiversity conservation.

5. More innovative communication tools are needed that are better tailored to the needs of different audiences.
6. Popularizing of knowledge on how to manage dryland ecosystems and their degradation.
7. Greater understanding of technical issues like costs and benefits of SLM options.
8. Effective monitoring of communication actions is required to understand changes in knowledge, attitudes and practices towards SLM and DLDD.

The following graphic illustrates the key compnents of an effective communication strategy: a detailed strategy has been developed in parallel with this NAP revision and is available online. The graphic illustrates the importance of posing four questions before communicating: what is the aim of the communication, who is the target audience, what do you want them to change (their knowledge, their attitudes or their practices), and based on this, what is the best medium of communication to deploy. The graphic shows that the nature of the communication tool is highly dependent on the complexity of the issue being presented and an effective communication strategy may be an unorthodox approach, such as working in partnership with the intended audience to jointly learn about an issue through participatory research or action.



4.5. Integrated Financing Strategy

Operational Objective 5 on Financing and Technology Transfer targets an "Integrated financing strategy to mobilize and improve coordination of national and external financial and technological resources". The Objective includes four outcomes: raise national budgeting, increase resoures mobilization from external sources, boost innovative financial sources, and expand technology transfer from other countries.

Below is an illustration of the coherence of the The Aligned National Action Plan to Combat Desertification in Jordan 2015-2020 with earlier financing strategies, notably the IFS produced in 2008. The revised NAP addresses the four main elements of the IFS, three of which are integral to Objective 5 on Finance and Technology Transfer, and the third of which is reflected in Operational Objective 2 on the Enabling Environment. The former IFS fails to address technology transfer, which is a particularly high-value strategy for mobilizing support to Jordan to boost efforts on DLDD and SLM. The former IFS was also unable to provide the comprehensive overview of resources required to strategically address DLDD as it was developed in the absence of an updated and comprehensive NAP. As a result there is a number of strategic actions that is missing from the earlier IFS and further work is needed to produce a more thorough strategy, as recommended in the above.

Table 7. High Priority Activities for Delivering Operational Objective 5

NAP Operational Objectives' Outcome "Financing and Technology Transfer"	**IFS 2008 Outcome**
NAP Operational Objective 2: Policy Framework (To develop an enabling environment for solutions to combat desertification/land degradation and mitigate the effects of drought)	Enhanced enabling environment for resource mobilization in Jordan
5.1. Increase in national budgeting and budget monitoring across sectors for direct and indirect actions to combat desertification	Enhanced mobilization and allocation of internal resources
5.2. Increase in targeted resource mobilization from multilateral and bilateral donors and International Finance Institutions	Enhancing resource mobilization from external sources
5.3. Identify and mobilize innovative sources of finance, including private sector investments, specific investments from the banking sector, corporate social responsibility, and voluntary contributions	Enhanced mobilization of innovative sources of financing

The IFS 2008 document includes a detailed action plan for specific activities aimed at raising different financial resources and for creating the proper enabling environment needed for easing the mobilization of resources. The table below highlights the potential financial mechanism to support achieving the expected outcomes for the NAP 2015-2020 Operational Objectives. It is highly recommended to update the outdated IFS of 2008 to reflect the actual financial resources that should be mobilized to achieve the different objectives in this strategy. The IFS should be communicated with all concerned parties and stakeholders involved in the implementation of the NAP.

Table 8. Potential Financing Mechanism for NAP Operational Objectives (Based on IFS 2008)

NAP 2014 Operational Objective	Potential Financing Mechanism		
	Internal	External	Innovative
OO1. Advocacy, Awareness Raising and Education; to actively influence relevant national and local processes and actors in adequately addressing desertification/land degradation and drought related issues	1. Private sector through promoting the concepts of corporate social responsibility 2. Private-public partnerships (PPP) 3. Nonprofit organizations (NGOs, conservation foundations, and academic institutions) 4. prioritising activities within departmental budgets	1. International NGOs international/multinational partnership cooperation (i.e. GEF)	
OO2. Policy Framework; to support the creation of enabling environments for promoting solutions to combat desertification/ land degradation and mitigate the effects of drought	1. General budget (parliament, councils, municipalities, ministries, budget reserve) 2. Treasury operations (trust funds/guarantees, national funds, eco-tourism charges, etc.) 3. Local credit unions, banks, and private investments 4. Private sector local markets 5. Nonprofit organizations (NGOs, conservation foundations, and academic institutions) 6. Endowment vs. revolving funds 7. Special taxation, fees, and royalties imposed on practices that interfere with SLM 8. Community employment schemes	1. Aggregated financial flows (i.e. ODA-bilateral & multilateral) 2. Regional development banks (The World Bank, European Bank for Reconstruction and Development) 3. Private sources (foreign direct investment (FDI), commercial green loans, etc) 4. International NGOs 5. International/multinational partnership cooperation (i.e. GEF) 6. Expatriate funds 7. International p hilanthropic organizations 8. Sector-wide approaches (SWAps) 9. Debt relief instruments 10. Common, pooled, or basket funding arrangements 11. South-South and North-South cooperation 12. The Fair Trade Movement 13. CDM afforestation projects	1. Environmental fiscal reform - removing environmentally harmful subsidies - offering soft credits/waivers 2. SLM offsets (compensatory conservation) - One-off approach, in-lieu arrangement & bio banking. i.e., - tradable quota systems - Tradable development rights 3. Markets for green products (organic, gluten-free, eco-labeling) 4. SLM in climate change funding - Global Climate Change Alliance - UN-REDD Programme - Forest Investment Program (FIP) - Forest Carbon Partnership Facility - Amazon Fund - International Climate Initiative - BioCarbon Fund - ICFI - Green Climate Fund 5. SLM within financial international development (solidarity public-private partnership, and catalytic mechanisms)

NAP 2014 Operational Objective.	Potential Financing Mechanism		
	Internal	External	Innovative
			- Green bonds Conservational leasing/ trusts - Public-private partnerships - Long term concessional contracts - Removing investment barriers - Grants, loans, and equity investments (i.e. microfinance loans) 6. Environmental bond schemes 7. Salinity credit trading schemes
OO3. Science, Technology and Knowledge; to integrate the scientific and technical knowledge pertaining to desertification/land degradation and mitigation of the effects of drought	1. Private sector through promoting the concepts corporate social responsibility 2. Private-public partnerships (PPP) 3. Academic institutions	1. Regional research centers (ICARDA) and other international foundations R (ACSAD), AOAD	CSR funds - Participatory action-research funded by private sector
OO4. Capacity Building; to build capacity needed to prevent and reverse desertification/land degradation and mitigate the effects of drought	1. Private sector through promoting the concepts of corporate social responsibility 2. Private-public partnerships (PPP) 3. Academic institutions	1. Aggregated financial flows (i.e., ODA-bilateral & multilateral) 2 . Regional development banks (The World Bank, European Bank for Reconstruction and Development) 3. Private sources (foreign direct investment (FDI), commercial green loans, etc) 4. International NGOs 5. International/multinational partnership cooperation (i.e. GEF) 6. Expatriate funds 7. International philanthropic organizations 8. Sector-wide approaches (SWAps) 9. Debt relief instruments 10. Common, pooled, or basket funding arrangements 11. South-South and North-South cooperation 12. The Fair Trade Movement 13. CDM afforestation projects	As above

NAP 2014 Operational Objective.	Potential Financing Mechanism		
	Internal	External	Innovative
OO5. Financing and Technology Transfer; increased financial resource mobilization mechanisms and frameworks necessary to fund the NAP, in addition to the improved coordination of national and external financial and technological resources	1. General budget (parliament, councils, municipalities, ministries, budget reserve) 2 .Treasury operations (Trust funds/guarantees, national funds, Eco-tourism charges, etc.). 3. Local credit unions, banks, and private investments 4. Private sector local markets 5. Nonprofit organizations (NGOs, conservation foundations, and academic institutions) 6. Endowment vs. revolving funds 7. Special taxation, fees, and royalties imposed on practices that interfere with SLM 8. Community employment schemes		1. Environmental fiscal reform - Removing environmentally harmful subsidies - offering soft credits/ waivers 2. SLM offsets (compensatory conservation) - One-off approach, In-lieu arrangement, & bio banking. i.e. - Tradable quota systems - Tradable development rights 3. Markets for green products (Organic, gluten-free, eco-labeling) 4. SLM in climate change funding; - Global Climate Change Alliance - UN-REDD Programme - Forest Investment Program (FIP) - Forest Carbon Partnership Facility - Amazon Fund - International Climate Initiative - BioCarbon Fund - ICFI - Green Climate Fund 5. SLM within financial international development (solidarity, public–private partnership, and catalytic mechanisms) - Green bonds - Conservational leasing/ trusts - Public-private partnerships - Long Term concessional Contracts - Removing investment barriers - Grants, loans, and equity investments (i.e. microfinance loans). 6. Environmental bond schemes 7. Salinity credit trading schemes

4.6. Monitoring and Evaluation

The UNCCD Strategy calls upon parties to incorporate a monitoring and evaluation (M&E) system during the alignment of the NAP to guide its implementation (Decision 3/COP.8). The M&E is a tool for planning, tracking progress, and measuring impact of the NAP on SLM and local livelihoods. In addition, the generated knowledge of M&E processes can be shared locally and globally.

The M&E system builds on the Operational Objectives and the outcomes, which include indicators for monitoring, as well as some specific outcomes related to establishing monitoring systems. This section provides a narrative summary of the M&E strategy based on the five Operational Objectives.

- Actively influence relevant national and local processes and actors to adequately address desertification/land degradation and drought related issues.

✔ Objective 1 will contribute to monitoring and evaluation through increased awareness of DLDD and SLM issues and mobilization of multiple actors to contribute to national reporting processes. SLM actions outside government, and in multiple government institutions, will therefore be better coordinated and reported providing improved insight into current DLDD threats and progress towards SLM and restoration.

- Develop an enabling environment for solutions to combat desertification/land degradation and mitigate the effects of drought.

✔ Objective 2 will strengthen institutional mandates to address DLDD and to collaborate across sectors, further increasing the scope to track multiple actors and mobilize multi-sectoral engagements. In addition this objective will prioritize policies for implementation and monitoring.

- Strengthen the collection and use of scientific evidence and knowledge on desertification, land degradation and mitigation of the effects of drought.

✔ Objective 3 will provide targeted actions for improved data collection including establishment of DLDD monitoring methodologies and systems. This is the key objective for strengthening evidence-based monitoring as well as building on indigenous and local knowledge and perspectives on degradation and sustainable management.

- Build capacity to prevent and reverse desertification/land degradation and mitigate the effects of drought and to enable sustainable land and ecosystem management.

✔ Objective 4 will strengthen capacities of graduates and professionals to build a platform for monitoring country-wide. This will support institutional building (Objective 2) and will increase the caliber of professionals available to fill posts in newly formed institutions as well as staffing existing institutions with increased mandates for monitoring DLDD.

- Revised Objective 5: Increased mobilization and improved coordination of national and external financial and technological resources.

✔ Resource mobilization is critical for effective M&E, particularly to institutionalize M&E systems and routine data collection. Financial resources must be identified urgently for institutional development and to expedite the process of agreeing and establishing M&E systems, indicator development and data collection.

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Useful Web Links

http://www.unccd.int/Lists/SiteDocumentLibrary/conventionText/conv-eng.pdf

http://www.unccd.int/en/about-the-convention/Action-programmes/Pages/default.aspx

National Strategy and Action Plan to Combat Desertification 2006
http://www.moenv.gov.jo/En/EnvImpactAssessmentStudies/Documents/Desertification%20strategy.pdf

Jordan Poverty Reduction Strategy -
www.jo.undp.org/.../jordan/docs/Poverty/Jordanpovertyreductionstrategy.pdf

National Climate Change Policy for Jordan.
www.jo.undp.org/.../jordan/.../Climate%20change%20policy_JO.pdf

Jordan integrated financing strategy for sustainable land management.
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Maps

Tables

The Aligned National Action Plan to Combat Desertification in Jordan 2015 - 2020

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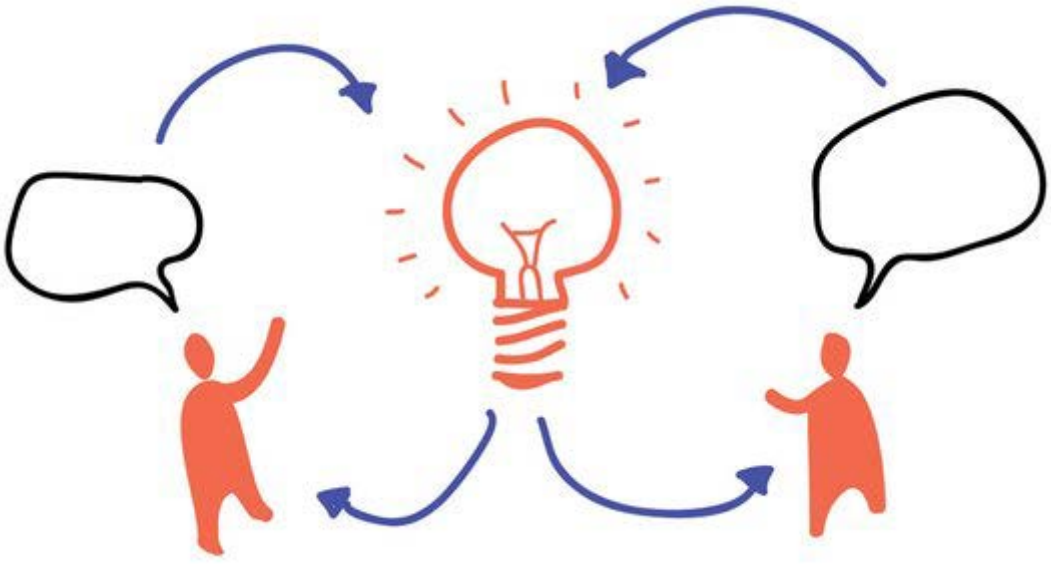
Comprehensive Communication Strategy



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CONVERGING COMMUNICATIONS TO THE JORDAN NAP

As part of the new 10 strategic goals for the UNFCCC, this communication strategy will act as a national roadmap to effectively influence different key stakeholders to address desertification, land degradation and drought through effective advocacy, awareness and education.

In the 3rd Jordanian National Action Plan (NAP) to Combat Desertification, communication was absent. As part of the new UNCCD strategy, it was found that communications that help achieve effective advocacy and behavioral change is needed. Therefore, the fourth Jordanian NAP converges' a communication plan and strategy into its effort to address desertification, land degradation and drought.

To overcome the persistent challenges of DLDD stakeholders from different sectors and local communities themselves will need to *change their behavior* to create effective partnerships that aim at reversing and preventing desertification, land degradation and efficiently mitigate effects of drought. This requires a sophisticated communication strategy that considers all the steps from communication to sustained action and behavioral change.

From a communications perspective this presents some challenges:

- It is evident that there is a gap in communications between the local community and government bodies. This poses as challenge when taking advocacy and social marketing into consideration, especially that local knowledge is not incorporated in local policies and plans
- There is a weak institutional imperative; weak active roles of the National Desertification Committee which therefore affects the link between strategies and operational aspects as well as coordination with climate change and CBD national committees for alignment actions and interests.
- Having a weak link between operational/implementation and strategies directly affect the sustainability of initiatives on land management causing huge gaps between awareness and behavioral change.
- The image of drylands is still somehow seen as unproductive land with no economic and/or social value.

AIM

This communication strategy will act as a national roadmap to effectively influence different key stakeholders to address desertification, land degradation and drought through effective advocacy, awareness and education. It plans to produce high quality technical assistance in advocacy and social marketing to contribute to progress towards long term goals with clear objectives and indicators to assess outcomes and the effectiveness of actions.

- Raising the understanding of desertification, land degradation and drought across sectors
- Create synergies between desertification, land degradation and drought, and climate change adaptation, mitigation and biodiversity conservation.
- Increase governments capacity and capability for monitoring sustainable dryland management and desertification
- Increase local community and government knowledge of cost effective sustainable land management solutions
- National policies better integrate local knowledge of dryland restoration
- Increased mobilization of multiple stakeholders in addressing desertification, land degradation and drought
- Effectively monitor the efficiency of communication and the role of different stakeholders in improving sharing knowledge and information.

TARGET AUDIENCE

It is important to note that creating a plan for behavioral change can only be sustainable if proper incentives are created. Change in behavior can only be possible if awareness is combined with incentives and alternatives.

This section outlines the communications objectives by target group.

Group	Description
Government	- Policy makers - Ministries - Municipalities
Local	- Local communities - CBOs - NGOs (local)
Key professionals	- Universities - Research institutions - Professionals
International Organizations	- Donors - Research organizations - International organizations - Implementing organizations
Media	- Local media channels - Social media - Online blogs etc.

Ministers, high-ranking government officials and parliamentarians

Objectives:

- Jordan aligned NAPS and SLM and DLDD issues integrated into developing plans and relevant investment plans and policies
- Effective communication of DLDD synergies with climate change and biodiversity conservation
- Establish or update an existing data base and information unit about DLDD and other collaborating sectors

Desired Change:

- Integration of Local knowledge including women and economic benefits in policies and plans.
- Establishing a committee to help initiate the integration of SLM, and green technologies in national policies taking into consideration the gender representation and needs
- Establishing a scientific body that monitors and assesses biophysical and socio-economic trends and having a communication expert on board.
- Raising awareness on threats of land related issues, living conditions, food security and others.
- Raising awareness on the link between DLDD and climate change and biodiversity conservation
- Enriching the knowledge of ambassadors on the conditions and mechanisms of DLDD
- Engaging the local community ; including women and youth as main stakeholders in all communication plan processes to address their needs and knowledge
- Investing in public funds for developing supportive local policies that include awareness raising and social marketing and the use of green technologies
- Improving knowledge on biophysical & socio-economic data to help in improving decision making.
- Using positive models from local traditional knowledge to showcase achievements
- Developing a framework with clear and effective mechanisms to mobilize resources across institutions
- Collecting sufficient data collected nationally for baseline data and M&E
- Creating a robust baseline with data about socio-economic and biophysical trends

What can be done?

- Exposure to best practices, positive local community (users groups and their local knowledge including women) activity models.
- Using economic valuation studies
- Produce gender sensitive local community awareness plans.
- Integrate DLDD issues within educational curriculums.
- Increased exposure to best practices, positive local community activity models.
- Produce a social marketing and awareness plan targeting behavioral change aimed at decreasing human influenced effects.
- Design and implement training workshops to enhance capacities of monitoring units on data storage, analysis and reporting
- Design and implement a set dissemination plan
- Design and implement a M&E plan

International organizations

Objective:

Creating an effective strategy towards SLM projects

Desired Change:

- Setting implementation strategies that target DLDD and related issues
- Diverting financing and funds towards new approaches (green technologies)
- Increasing the capacity of local communities and government institution about DLDD, SLM ensuring gender equity and mainstreaming issues.

What can be done?

- Use annual national studies to support.
- Include national experts in the field
- Use needs assessments for local communities including women, Pastoralists, farmer, youth, local CBOs and different land users groups
- Conduct training and capacity building workshops
- Be part of any DLDD and SLM scientific body

The media

Objective:

DLDD and relevant issues like climate change and biodiversity conservation are highlighted in the news, stories and have a bigger audience

Desired Change

- Writing positive stories about dryland restoration and local community engagement
- Writing stories to increase awareness about DLDD effects on other sectors
- Creating a solid rationale and information behind dryland restoration and local community engagement
- Highlighting that dryland in Jordan as an opportunities for improving affected population livelihoods.

What can be done?

- Increase awareness about dryland issues by showing interest and attending national and local initiatives
- Helping locals in advocating for their rights and showcase positive local models including a unique local knowledge in addressing impacts of DLDD including women, Pastoralists, farmer, youth, local CBOs and different land users groups
- Greater interest in addressing positive outcomes rather than tragedies

Key Professionals

Objective

Data and case studies produced for effective dissemination (showcasing DLDD effects and synergies)

Desired Change

- Annual case studies produced show casing specific area DLDD effects
- Annual case studies produced and allowed for dissemination locally/nationally
- Produced cases analyzing the drivers of (policy, institutional and financial and socio-economic) of land degradation from different stakeholder perspectives including local communities indicators in dealing with DLDD

What can be done?

Being part of governmental scientific bodies

Non-governmental organizations and civil society organizations

Objective

Individual ability to manage and protect their environment

Desired Change

- Increasing the ability to manage grazing as a pest practice for SLM..
- Increasing the ability towards sustainable Dryland management.
- Increasing awareness and capacity towards DLDD and SLM and related issues
- Increasing local community ownership
- Increasing coordination and collaboration among CBOs and municipalities and women groups at local level.
- Increasing the use of greener and newer technologies on the ground to support SLM.

What can be done?

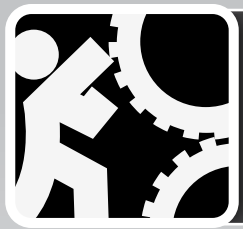
- Advocate & lobby for local interests while capturing indigenous knowledge.
- Participate in and get involved in local initiatives.
- Be part of the change process and planning process
- Attend capacity building and training workshops
- Attend TOT workshops to widen capacity building in local areas

TOOLS

- Through proper dialogue with line institutions
- Through participatory engagement.
- Documenting local knowledge for sharing and builds on.
- Through proper dialogue with local community reps including women, Pastoralists, farmer, youth, local CBOs and different land users groups
- Through participatory engagement.
- Use: field visits, interviews, workshops, problem analysis tools, showcasing positive models and alternative benefits, local media
- Through proper dialogue with local community reps including women, Pastoralists, farmer, youth, local CBOs and different land users groups
- Through participatory engagement.
- Through collaboration with different research institutions and departments of statistics
- Being part of local/national and global conferences and workshops
- Strong participatory approach in all local initiatives (national or local) through implementing agencies
- Annual conferences and workshops aiming at disseminating valuable information
- Interviews, video, workshops and being part or attending local initiatives and conferences
- Newspaper , Celebrating World Earth Day, Combat Desertification day .....

AIM

This communication strategy acts as a national roadmap to influence key stakeholders to address DLDD



- Raise understanding of DLDD
- Create synergies between DLDD and climate change adaptation, mitigation and biodiversity conservation.
- Increase governments capacity and capability for monitoring sustainable dryland management and desertification
- Increase local community and government knowledge of cost effective SLM solutions
- National policies better integrate local knowledge of dryland restoration
- Increased mobilisation of multiple stakeholders in addressing DLDD
- Effectively monitor effectiveness of communication

AUDIENCE

- Government
- Local Community
- International Organization
- Key Professionals
- Media

COMPLEXITY & UNCERTAINTY OF COMMUNICATION

TOOLS

Participatory Approaches	Two Way Communications	One Way Communications
All level capacity devlopment	Non- governmental pilot projects	Gender mainstreaming and equity
Joint Management	Policy Change	Capacity Building and Awareness
Pilot Projects	Public investments	Empowerment
	Skill development	Ownership

DESIRED CHANGE

change in knowledge	change in Practice	change in Attitude
Translate information & data to common language	Policy Change	Capacity Building and Awareness
Awareness building	Public investments	Empowerment
Updated Knowledge databases	Non-governmental pilot projects	Gender mainstreaming and equity
	Skill development	Ownership