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Facilitating Financing for Sustainable Forest Management in Small Islands Developing States and Low Forest Cover Countries

An analytical report prepared by Indufor
for the United Nations Forum on Forests

Country Case Study: Jordan

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**The views expressed herein are those of the author(s) and do not necessarily reflect the views
of the United Nations.**



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Table of contents

EXECUTIVE SUMMARY	1
I. INTRODUCTION	3
A. Physiography of Jordan	3
B. Socio-economic setting and characteristics	4
C. Benchmarking Jordan's environmental performance (millennium development goals) achievements	5
II. FINANCING FOR SUSTAINABLE FOREST MANAGEMENT: CONCEPT, METHODOLOGY AND APPROACH	7
A. Objective	7
B. Methodology and approach	7
III. FOREST RESOURCES IN JORDAN	8
A. Features of the forest sector in Jordan	8
B. Socio-economics of the forest sector	11
C. Degradation of forest areas	11
D. Afforestation activities and plans	12
E. Extension and forestry conservation activities	12
F. Forestry income-generation activities	12
G. Key challenges and constraints	12
IV. POLICY FRAMEWORK IN JORDAN	14
A. Relevant policies and sectoral strategies	14
1. Forest policy draft	14
2. Water strategy and policies	14
3. National Strategy for Agricultural Development	15
4. Agricultural document	16
5. National Agenda 21	17
6. The National Agenda	17
7. Protected areas policy draft	18
8. National Biodiversity Strategy and Action Plan	18
9. National Action Programme to Combat Desertification	19
10. Integrated Financing Strategy for Sustainable Land Management	19
11. National Energy Strategy	20
12. Poverty Reduction Strategy	20
13. National Tourism Strategy	20
14. Conclusions	21
H. Legal and Regulatory Frameworks	21
1. Agriculture Law No. 44, 2002	21
2. Environmental Law No. 52, 2006	22
I. Institutional framework	23
1. Key government agencies	23
2. Non-governmental organizations	25
3. Academia and research centres	26
4. Private sector	26
5. Others	27
V. PRESENT FINANCIAL FLOWS FOR SUSTAINABLE FOREST MANAGEMENT	28
A. Internal sources of financing	28
1. Public sector	28
2. Private sector	31
B. External sources of financing	31
1. Key donors in Jordan	31
2. Thematic areas	33
3. Debt swap programmes	35
4. Clean development mechanism under climate change	35

5. The employment - Technical and Vocational Education and Training Fund	35
6. Distribution and retaining a proportion of fines/penalties	36
7. Charging a minimal fee for forest plants	36
8. Establishing a National Forest Fund	36
9. Public-private partnerships	37
10. Tourism fees	37
VI. DEMAND FOR FINANCING FOR SUSTAINABLE FOREST MANAGEMENT	38
A. National financing plans for forests	38
B. Demand by thematic areas	38
1. Afforestation and reforestation	38
2. Restoration of degraded forests	38
VII. FINANCING GAPS AND KEY CHALLENGES FOR INCREASING FINANCING FOR SUSTAINABLE FOREST MANAGEMENT	39
A. Financing opportunities and sustainability	39
B. Capability of forests for self-financing	39
C. Potential and future trends	39
D. Key conclusions	40
VIII. CONDITIONS FOR PRIVATE INVESTMENTS AND AN ENABLING ENVIRONMENT FOR FINANCING SUSTAINABLE FOREST MANAGEMENT	41
A. Current and potential private sector engagement and operations	41
B. Underlying factors behind private sector finance	41
C. Measures and recommendations to induce private sector investments	41
IX. CONCLUSION AND RECOMMENDATIONS	43
A. Conclusion	43
B. Recommendations	43
X. REFERENCES	45

List of tables

Table 1 Gross domestic product and inflation	5
Table 2 Sector contribution to GDP	5
Table 3 Progress towards meeting the MDG1 and MDG7 in Jordan	6
Table 4 Forest reserves in Jordan	11
Table 5 Total budget allocation for the selected agencies	29
Table 6 Summary of Foreign Assistance during 2004-2009	32
Table 7 Total ongoing projects financed through foreign assistance by sector	33

List of boxes

Box 1 Financial instruments in the Agricultural Law (Provisional Law No. 44 of 2002)/Forestry	30
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List of figures

Figure 1 Location of Jordan and its biogeographical zones	4
Figure 2 Land classification of Jordan	9
Figure 3 Vegetation cover of Jordan	10

ACRONYMS AND ABBREVIATIONS

CAS	Country Assistance Strategy
CBD	Convention on Biological Diversity
CCA	Common Country Assessment
CDM	Clean Development Mechanism
CEA	Country Environmental Analysis
CPI	Corruption Perceptions Index
CSP	Country Strategy Paper
CSR	corporate social responsibility
Donum	One donum = 1/10 hectare
ENPI	European Neighbourhood and Partnership Instrument
EPF	Environment Protection Fund
E-TVET	Employment - Technical and Vocational Education and Training Fund
EU	European Union
FAO	Food and Agriculture Organization
FD	Forestry Directorate
GBD	General Budget Department
GCEP	General Corporation for Environment Protection
GDP	Gross domestic product
GEF	Global Environment Facility
GM	Global Mechanism
GTZ	German Technical Cooperation
HCST	Higher Council for Science and Technology
HDR	Human Development Report
IFAD	International Fund for Agricultural Development
IFS	Integrated Financing Strategy
IUCN	International Union for Conservation of Nature
JAIMS	Jordan Aid Information Management System
JICA	Japan International Cooperation Agency
JPA	Jordan Protected Area
JVA	Jordan Valley Authority
LFCC	Low Forest Cover Country
MDG	Millennium Development Goal
MEMR	Ministry of Energy and Mineral Resources
MEDA	<i>Mesures d'Accompagnement</i>
MENA	Middle East and North Africa
MoA	Ministry of Agriculture
MoE	Ministry of Environment
MoF	Ministry of Finance
MoMA	Ministry of Municipal Affairs
MoPIC	Ministry of Planning and International Cooperation
MoT	Ministry of Tourism
MoWI	Ministry of Water and Irrigation
NAP	National Action Programme
NBSAP	National Biodiversity Strategy and Action Plan
NCARE	National Centre for Agricultural Research and Extension
NFD	National Desertification Fund
NGO	non-governmental organization
NSAD	National Strategy for Agricultural Development
NWFP	non-wood forest product
PA	protected area
PES	Payment for environmental/ecosystem services
PRS	Poverty Reduction Strategy
REDD+	Reducing Emissions from Deforestation and Forest Degradation+
RSCN	Royal Society for the Conservation of Nature
SFM	sustainable forest management

SIDA	Swedish International Development Cooperation Agency
SIDS	Small Islands Developing States
UNCCD	United Nations Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNEP	United Nations Environmental Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
US	United States
USAID	United States Agency for International Development
USTDA	United States Trade and Development Agency
WHO	World Health Organization

EXECUTIVE SUMMARY

Jordan has limited forest resources, with about 1 per cent of the country classified as forests. The forests in Jordan are generally neither productive nor capable of producing good quality wood for commercial or industrial purposes (i.e., they have low commercial value). However, they provide other kinds of important services, including contribution to soil conservation, watershed management, aesthetic and recreational value, biodiversity conservation and carbon fixing.

Jordan faces dual challenges in achieving sustainable forest management (SFM). In addition to dealing with forest degradation attributed to overgrazing, overexploitation and clearing activities, the country must mobilize new and additional funding to support SFM of its forests.

This report is prepared to research and analyse forest financing in Jordan in general, to discuss the aforementioned financing challenges in particular and to come up with relevant recommendations. The report aims to compile all pertinent forest financing information available in Jordan and to analyse the current and potential funding sources and flows, as well as the related gaps, opportunities and lessons learned.

The methodology adopted to carry out the analysis includes five parts: (a) a desk study, (b) data compilation from extensive existing databases and relevant sources, (c) analysis of the compiled data, (d) individual and group interviews, and (e) meetings of key experts. The main findings of the first draft of the analysis were discussed in a national consultation workshop held in Amman, Jordan on 26 May 2010, and all comments, suggestions and input from the participants have been integrated into this final report.

This report explores the linkages between the forest sector and other sectors. The review of the strategies and policies of the most relevant sectors reveals that several key ones (e.g., tourism and energy) do not integrate forests. Furthermore, it should be noted that the national Poverty Reduction Strategy (PRS) has addressed neither forests nor their role in supporting the livelihoods of the poor and providing opportunities for eradicating poverty through forest programmes and projects.

Analysis of the internal financial flow for forest management finds that most of the funding allocated to forests comes almost entirely from the public budget. The contribution of the private sector to this financial flow is very limited. The analysis discusses the involvement of this important sector and provides a set of recommendations that would improve the quality of the existing enabling environment, particularly concerning the legal and regulatory frameworks.

The level of foreign assistance (external financing resources) has increased in recent years. Assistance has been allocated to (a) support and finance priority developmental projects in various sectors, including the water and wastewater (considered high priority for most donors), health, energy and education sectors; and to (b) enhance economic opportunities, infrastructure, microfinance and budget support. Forests receive limited attention and recognition by donors. This is clear, as no foreign assistance has been allocated to forests in the last few years.

This report identifies several innovative finance sources for SFM in Jordan. These include retaining a portion of fines/penalties for forestland violations; charging a minimal fee for forest plants, which are currently provided free-of-charge to institutions and individuals; creating a National Forest Fund; and collecting tourism fees on forestlands. None of these innovative sources has been applied yet in Jordan; therefore, they should be further examined and explored in terms of their applicability and suitability.

Concerning current financing opportunities and sustainability, the implementation of SFM in Jordan requires external financing. Various options exist for obtaining foreign assistance. SFM could even be self-financing in the long term, assuming that there would be a set of measures to improve both the legal and institutional frameworks, and that the services and products provided by forests would also be enhanced and paid for.

This report provides recommendations that encourage resource mobilization. However, as a priority, specific actions must be taken to integrate forest development and management clearly and effectively

into relevant national development plans and strategies. There should be a focus on addressing forests in the PRS and action plans. Also, necessary steps should be taken to facilitate and support private sector investments as a source of financing in SFM. This means first carrying out policy reforms and strengthening institutions. The agencies concerned should work on raising awareness among decision makers on the potential contribution of forests in national sustainable development.

DRAFT

I. Introduction

Jordan is currently facing several environmental challenges. Recent studies and monitoring programmes have indicated that water scarcity and air pollution (although concentrated in hot spots of industrial and urban development) are at the top of the list and are expected to be aggravated by climate change. Land degradation (desertification) is another challenge that affects productivity of rangelands, forests and other ecosystem services in Jordan. Although Jordan has made considerable progress in conserving biodiversity resources and establishing protected areas (PAs), concerned agencies still need to address these areas. Moreover, Jordan is facing challenges with solid waste management

Concerning climate change, Jordan contributes very little to global emissions-- carbon emissions in Jordan are estimated to be around 0.1 per cent of global emissions. However, similar to many other countries, climate change will likely affect Jordan. Negative effects of climate change would include a reduction in agricultural productivity, drought, an aggravated water scarcity problem, coral reef bleaching and land degradation.

A. Physiography of Jordan

Jordan has a total area of about 89 200 km² (see Figure 1). The country has a Mediterranean climate characterized by predominantly winter rainfall and a dry and hot summer. Total precipitation and its distribution vary greatly from year to year. The rainy season extends from October until May, being at its heaviest between November and March. Due to the variable topographical features of Jordan, rainfall distribution varies according to location. Rainfall averages from less than 50 mm in the eastern deserts to 600 mm in the high plateau areas of North Jordan. Rainfall decreases gradually from north to south and sharply from west to east.

Jordan can be divided into four main physiographic and, subsequently, agro-climatic zones (see Figure 1):

(a) The Jordan Rift Valley: this valley extends from Lake Tiberias in the north to the Gulf of Aqaba in the south. The area between Lake Tiberias and the Dead Sea is called the Jordan Valley. This area is the major irrigated area in the country. Average annual rainfall is less than 200 mm over most of the valley. This area covers 1.1 per cent of Jordan's total area.

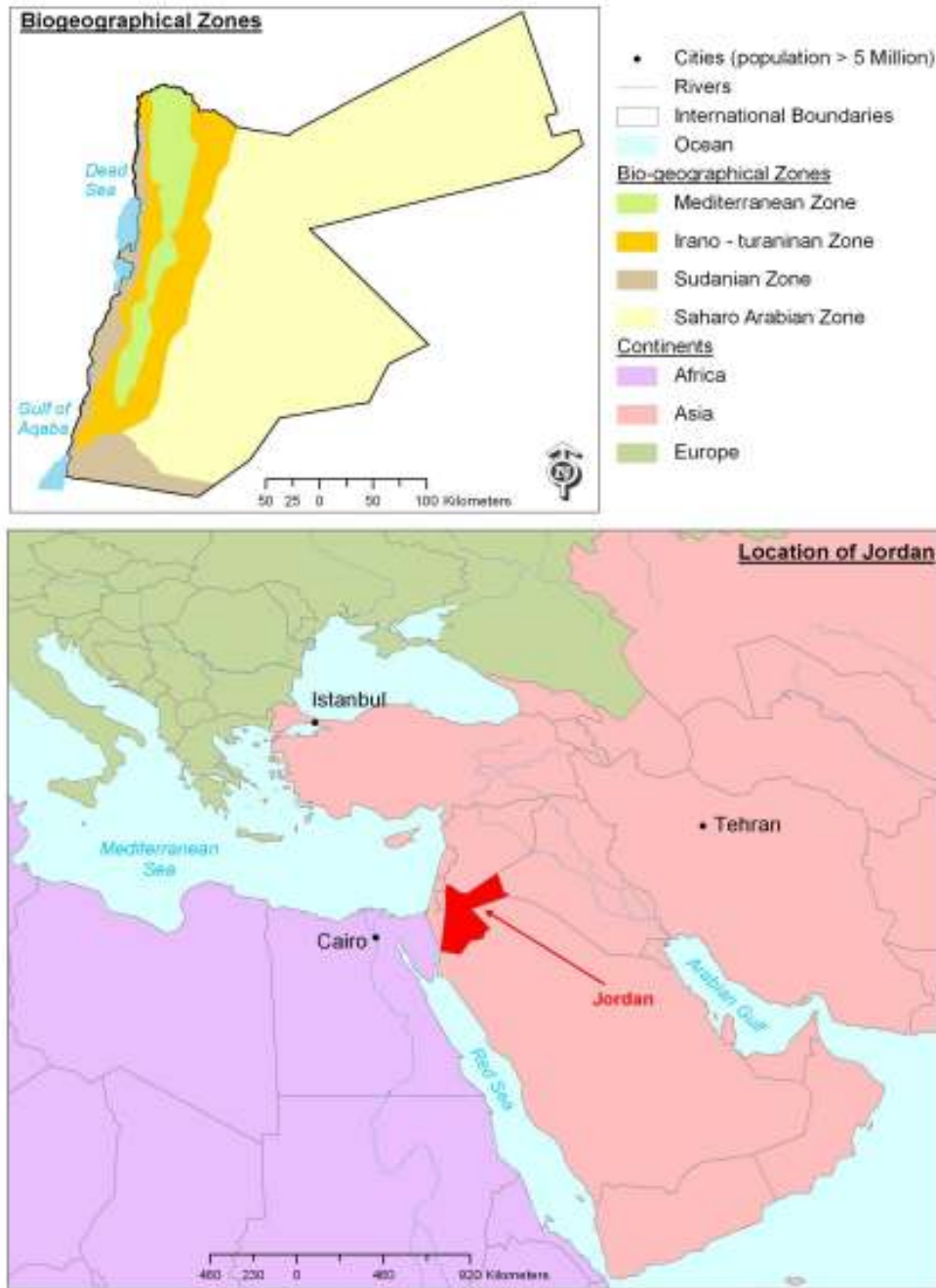
(b) The Semi-arid and Semi-humid Zones of the Highland: this highland area overlooks the Jordan Rift Valley and encompasses the mountain ridges. Average annual rainfall exceeds 350 mm. Most potentially productive land occurs in this zone, especially in the north, and it covers 2.5 per cent of the total area of the country.

(c) The Steppe Zone: this zone lies to the east and south of the Highland Zone. The elevation descends gradually towards the east. Average annual rainfall ranges between 200 and 350 mm. This zone covers 6.3 per cent of Jordan's total area or about 0.56 million ha (5.6 million *donums*¹).

(d) The Arid Zone: this zone is called *Badiah* in Arabic. It includes desert plains of the granite and sand stone mountains in the Eastern, North Eastern and Southern deserts. Average annual rainfall in that area is less than 200 mm. This area covers the remaining 90 per cent of the total area.

1 A *donum* (or dunum) is a unit of measure for land area which is commonly and widely used in Jordan as well as in several other countries in the Middle East. One donum = 1/10 hectare.

Figure 1 Location of Jordan and its biogeographical zones



Source: Royal Society for the Conservation of Nature-RSCN, 2010

B. Socio-economic setting and characteristics

Jordan is a small, middle-income country with an open economy, a limited natural resource base and active trade flows. Exports accounted on average for almost 50 per cent of gross domestic product

(GDP) from 2000-2005. In comparison, exports accounted for about 30 per cent of GDP for Middle East and North Africa (MENA) countries and average lower middle-income countries. Growth of exports in Jordan has been twice as fast as the MENA average in the last five years. As the integration of Jordan into the world economy progresses, improving Jordan's environmental management will not only improve the wellbeing of Jordanians, it will also enable the country to compete better in increasingly environmentally conscious markets.

Over the last decade, Jordan's economy performed well, achieving macro-economic stability and a GDP of about USD 3 420 per capita in 2009 (Ministry of Planning and International Cooperation -MoPIC & Ministry of Finance-MoF, 2010). The economy is mostly based on services (67 percent of GDP), industry and mining (30 percent of GDP). Moreover, illiteracy among the poor dropped by 41 percent due to the Government's literacy campaigns and "Education for All" strategy, whereas the infant and child mortality rate among the poor declined by nearly 33 percent (World Bank, 2009). Table 1 and Table 2 show the main economic indicators.

Table 1 Gross domestic product and inflation

	2005	2006	2007	2008	Until third quarter 2009	Feb 2010
GDP at market prices (USD in billions)	12.61	14.66	17.03	21.27	17.13	-
GDP at constant prices (USD in billions)	10.42	11.26	12.26	13.21	10.18	-
Real GDP growth rate (%)	8.1	8.0	8.9	7.9	2.7	-
GDP per capita at current prices (USD)	2 303	2 618	2 976	3 636	3 840	-
GDP deflator	121.0	130.2	139.0	160.8	168.3	-
Inflation (% of GDP deflator)	2.2	7.6	6.7	15.7	-	-
Inflation (% in CPI*)	3.5	6.25	4.7	13.9	-0.7	4.4
Food item inflation (%)	5.2	7.4	8.7	18.6	1.7	2.9

* CPI=Corruption Perceptions Index
Source: MoPIC & MoF, 2010

Table 2 Sector contribution to GDP

Sectors	2008	Until third quarter 2009* Percentage
Manufacturing Industry	17.1	16.9
Telecommunications, transport & storage	14.9	15.2
Producers of government services	12.6	12.8
Real estate sector	10.3	10.4
Whole sale & retail trade	8.9	9.5
Finance & insurance services	7.6	7.1
Construction	4.8	5.2
Community, social & personal services	3.9	3.8
Agriculture, hunting, forestry & fishing	3.0	3.3
Electricity & water	2.4	2.4
Mining & quarrying industry	2.1	1.5
Restaurants & hotels	1.1	1.2

Source: MoPIC & MoF, 2010

C. Benchmarking Jordan's environmental performance (millennium development goals) achievements

A comprehensive review of the Millennium Development Goals (MDGs) to measure achievement of the global targets will be conducted in 2015. However, Jordan's report on achievements of MDGs (MoPIC &

United Nations Development Programme-UNDP, 2004) reflects the country's progress on the environmental sustainability goal in reference to its three targets and seven indicators. Overall, the country achieved its target on access to safe drinking water by 2002. The targets of integrating the sustainable development principles into Jordan's policies and programmes and the contribution to improving the lives of 100 million slum dwellers in the world may both potentially be achieved (see Table 3). Available data suggest good progress is being made, particularly concerning forested land, areas protected for biodiversity, and access to improved water sources and safe sanitation.

Table 3 Progress towards meeting the MDG1 and MDG7 in Jordan

Goal	Target	State of achievement 2004
1- Eradicate extreme poverty and hunger	1- Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day	On track
	2- Halve, between 1990 and 2015, the proportion of people who suffer from hunger	On track
	9- Integrate the principles of sustainable development into country policies and programmes	Potentially
7- Ensure environmental sustainability	10- Halve by 2015, the proportion of people without sustainable access to safe drinking water	Achieved
	11- Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers	Potentially

Source: MoPIC & UNDP, 2004

II. Financing for sustainable forest management: concept, methodology and approach

The concept of SFM has been introduced to guide management practices in order to ensure that the economic, ecological and social values of forests are maintained. SFM is described as a dynamic and evolving concept, which aims to maintain and enhance the economic, social and environmental values of all types of forests for the benefit of present and future generations.

Currently, there is no universally agreed upon definition of SFM. However, according to the Food and Agriculture Organization (FAO, 2002), SFM is “the stewardship and use of forests and forest lands in a way that maintains their biological diversity, productivity, regeneration capacity, vitality and their potential to fulfil, now and in the future, relevant ecological economic and social functions, at local, national and global levels, and that does not cause damage on other ecosystems”.

According to the universal definition adopted in the Forest Instrument², SFM incorporates a set of key sustainability concepts: (a) stewardship; (b) enabling environment; (c) continuous flow of goods and services without undermining the resource base; (d) maintenance of ecosystem functioning and biodiversity; (e) maintenance of economic, social, and cultural functions; (f) benefit-sharing; and (g) stakeholder participation in decision-making.

A. Objective

The objective of the present report is to produce a high-quality analysis on forest financing in Jordan. The analysis aims to compile all available, relevant forest financing information in Jordan and to analyse the current and potential funding sources, flows and the related gaps, opportunities, and lessons learned.

B. Methodology and approach

The methodology includes:

- A desk study
- Data compilation both from a variety of existing databases (e.g., FAO, Ministry of Agriculture-MoA, MoPIC), and from all relevant institutions (the reference year for the analysis is 2009)
- Analysis of the compiled data
- Individual and group interviews and meetings of key experts

The scarcity of data was among the difficulties faced during the preparation of the present report. Owing to that, the national consultant met with some of the former retired staff (as the turnover in staff during the last five years was high) at the Forestry Directorate (FD), in addition to meeting with experts and specialists in academia and at NGOs.

² Source: UNFF: <http://www.un.org/esa/forests/faq.html>

III. Forest resources in Jordan

A. Features of the forest sector in Jordan

Forests in Jordan consist of both natural and man-made forests, including windbreaks and shelter belts. The forests cover an area estimated at 870 000 *donums* (i.e., 87 000 ha), in addition to about 2 405 km of roadside plantations. The forests are mainly located in the north (where there is Mediterranean type vegetation), where the rainfall exceeds 200 mm/year.

Although Jordan has less than 1 per cent forest cover, some governorates are well covered with forest (i.e., Jarash and Ajloun Governorates are covered by 20 per cent and 30 per cent of the total area respectively). The forest lands consist of scattered fragments with little natural regeneration (see Figure 2). Cultivated agricultural fields are integrated into the forest lands, making it difficult to control grazing, tree cutting and land encroachment for urban and agriculture expansion. The forests in Jordan are generally not productive and not capable of producing good quality wood for commercial or industrial purposes. They are primarily managed for protection and environmental benefits, and produce very little wood for either fuel or industrial purposes. Local production, mostly from man-made forests, produces limited amounts of firewood and raw material for furniture, joinery and fruit boxes (Ministry of Environment-MoE, 2003).

Forests in Jordan, especially natural forests, are fragmented, open in density, slow growing, degraded, and, consequently, of low commercial value. Commercial forests are only viable in areas receiving more than 400 mm of precipitation annually. Such lands constitute only 9 per cent of the forestlands. Areas receiving rainfall of more than 250 mm/year could be afforested. Such areas constitute 83 per cent of the total land (MoE, 2003).

Figure 2 **Land classification of Jordan**

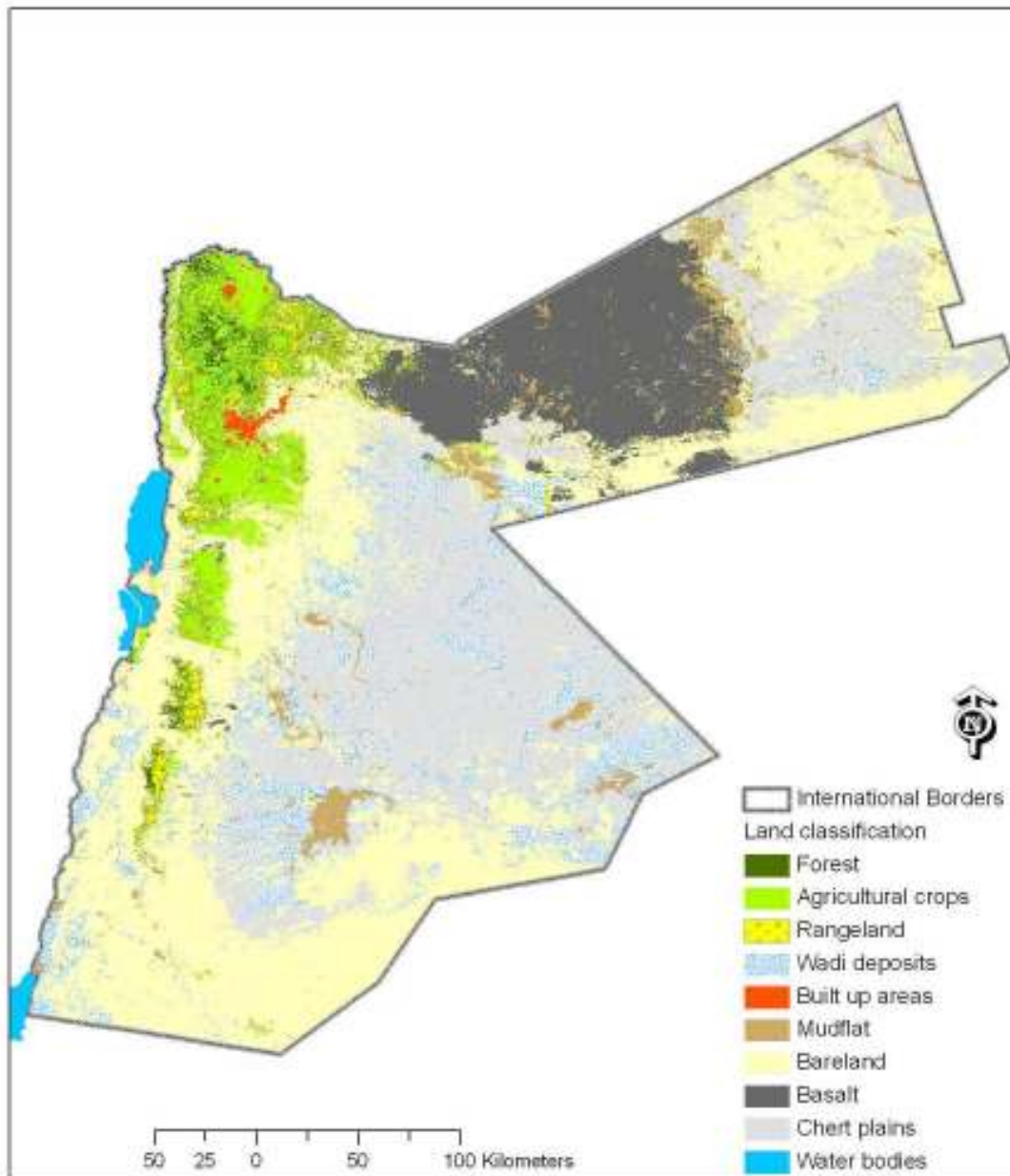
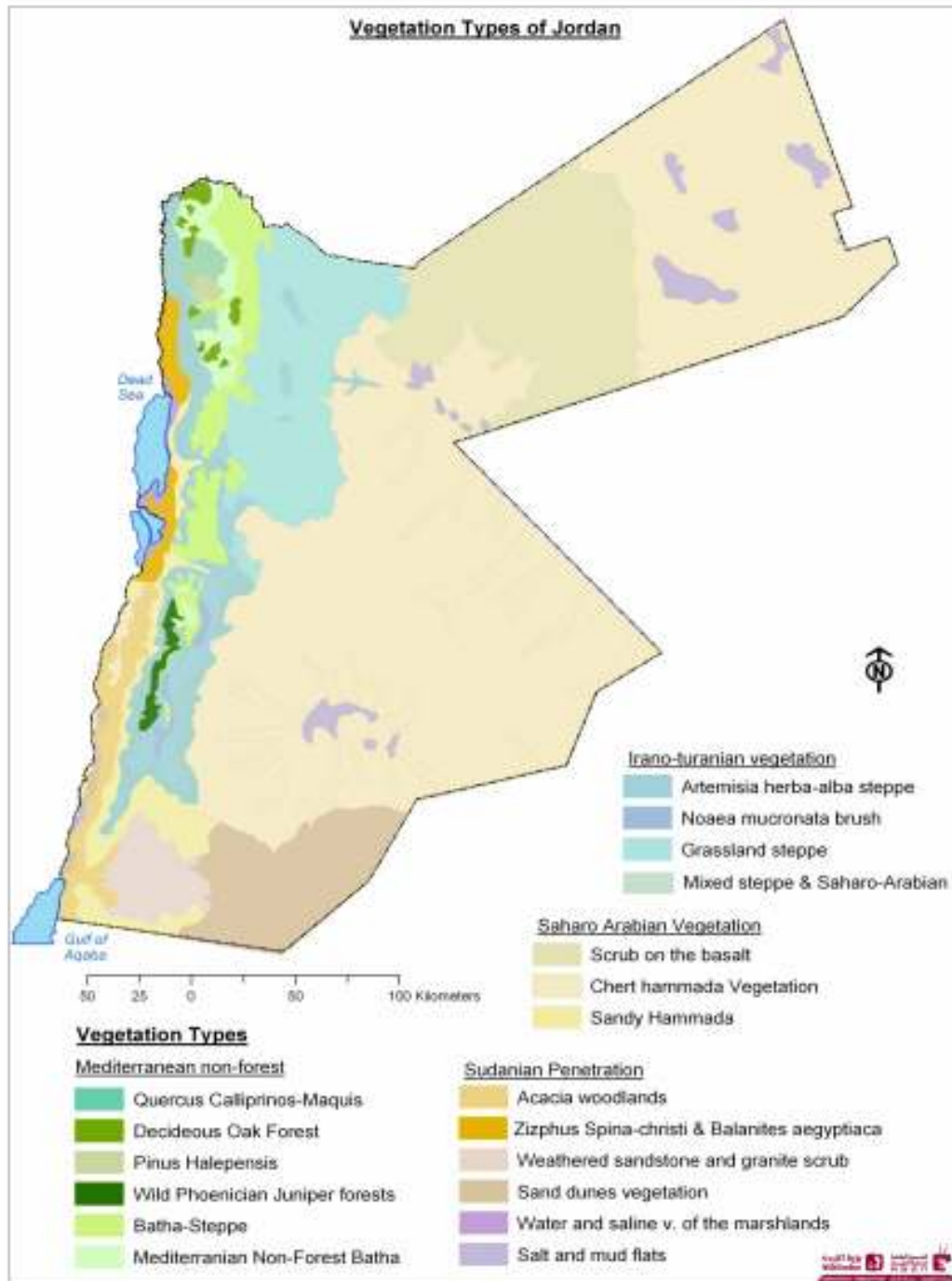


Figure 3 **Vegetation cover of Jordan**



Currently there are four forest reserves already established and operating (see Table 4). The Royal Society for the Conservation of Nature (RSCN) manages them in coordination with the FD and the MoE. Private forests do not exceed 4 per cent of the total forestland area and are managed under the same legislation as that for public forests.

Table 4 Forest reserves in Jordan

<i>Forest reserves</i>	<i>Year of establishment</i>	<i>Area in hectare</i>
Ajloun	1988	1 200
Dana	1989	30 800
Dibben	2004	800
Yarmouk	2010	2 300

B. Socio-economics of the forest sector

Forests in Jordan play only a modest role in meeting the demand for timber products. Nevertheless, they do support other economic sectors. The forest sector creates job opportunities and generates income mostly for rural people, which contributes to poverty alleviation and reduces the unemployment rate (MoE, 2003).

There is no forest industry in Jordan to speak of, since the forest sector has very limited commercial value. The existing limited industry produces firewood, furniture, joinery, fruit boxes, and a significant amount of non-wood forest products (NWFPs). Firewood production, mostly from planted forests, is estimated to be 6 000 to 10 000 metric tons per year, which is very low compared to the total forest area. NWFPs, such as mushrooms, wild fruits, aromatics and medicinal plants, are produced and used at the household level.

In addition, forestland produces large amounts of fodder from annual and perennial plants. The FD gives permission in certain seasons for strictly controlled grazing. According to the internal reports of the Directorate (2008 and 2009), nearly 228 650 *donums* (or 22 865 ha) of forestland were opened up in 2008 for more than 300 000 heads of livestock for periods between 15 to 30 days each with a total of more than 8 600 000 grazing days. The value of grazed forage was around USD 1 186 000.

The other services provided by Jordanian forests include:

- Contribution to soil conservation
- Watershed management
- Aesthetic and recreational value
- Biodiversity conservation
- Carbon fixing

No estimates have been made on the economics of such services.

C. Degradation of forest areas

Many factors contribute to the degradation of Jordanian forests. Overgrazing, overexploitation and forest clearing are causing a serious depletion in forests, because these practices lead to soil erosion, watershed destabilization and microclimate changes. There is a permanent threat to sustainable soil and water management for agriculture due to the environmental degradation of upper watersheds. In addition, fuelwood is illegally harvested in several areas at a faster rate than natural regeneration can support. Inadequate forest management and fire control exacerbate this problem. The available data on forest fires (1993-2009) at the FD reveal that average fire occurrence is around 40 fires per year, destroying more than 15 000 *donums* (1 500 ha). Conversion of forest lands into other land uses such as agriculture, buildings and development zones is also contributing to the depletion of forest areas.

D. Afforestation activities and plans

The FD is in charge of afforestation, with the Afforestation and Nurseries Division being the responsible entity. In Jordan, there are currently 14 permanent tree nurseries that make different species of plants available for afforestation programmes (FD, 2009). Afforestation is carried out to protect and improve existing forest as well as to improve the semi-arid conditions, soil conservation (windbreaking), and greening the landscape. According to the present policy, no direct economic benefits are expected from afforestation.

The draft forest policy addresses as a priority the quality and survival rates of such plantations. There is a need to conduct an evaluation for these activities in order to improve the afforestation activities.

Afforestation activities on degraded land have at times caused serious conflict with local people who previously used such areas as free grazing land. Ongoing afforestation activities include roadside afforestation, at an average of 120 km per year; afforestation at dam banks; and production of forest seedlings in forest nurseries, at a rate of five million seedlings annually.

E. Extension and forestry conservation activities

Extension and awareness activities are conducted by the Extension Unit at the FD. The activities are intended to raise awareness of the role of forest resources. However, less focus is given to activities that promote the participation of the local communities in conservation efforts and the sustainable management of resources. The FD is not responsible for carrying out extension activities. On the other hand, NGOs have taken the lead on several initiatives focusing on specific target groups, such as schools. Forest resources and conservation issues have been integrated into school curricula years ago through a project coordinated by Ministry of Education in coordination with the MoA/FD and RSCN. Among the common and regular activities organized by the FD are the annual plantation campaigns, where different target groups are usually invited to join in planting trees in degraded forests or newly open areas.

F. Forestry income-generation activities

The forest sector contributes to eradication of poverty and offers employment opportunities in rural communities. Products such as medicinal plants, fodder and seeds are significant in amount and could be compared in value to that of timber production. However, no surveys have been conducted to research the potential of these products and how they could be utilized efficiently and sustainably.

Currently, not enough data and information exist on the potential and value of products that are harvested in forest areas (e.g., medicinal plants, fruits, seeds, fodder). The way such products are harvested should be controlled and reviewed as well, since irresponsible harvesting might affect other species and consequently the ecosystem itself. The relevant legislation should be effectively enforced, and, if necessary, reviewed and amended.

G. Key challenges and constraints

The forest sector in Jordan is facing multiple challenges. Technically speaking, the FD is understaffed in necessary technical capacities, especially in areas related to scientific research, monitoring and socio-economics of forestry (products, services and income generation activities). The FD lacks a well-established basic survey database as well as consistent management plans for forests. Institutional difficulties include an unclear mandate for the FD and overlapping, inadequate coordination and inter-linkages of the forestry sector with other institutions. Furthermore, the institutional structure of the FD needs to be reviewed in order to assign an appropriate mandate for the internal units, such as the Biodiversity and Extension units.

One of the main problems in Jordan in managing natural resources, and forests in particular, is the weak enforcement of laws and regulations. The failure to have appropriate legal enforcement and to take legal

action against some violations certainly affects the sustainable and effective management of the forest resources.

The annual allocated budget for the FD does not cover all actions needed for SFM and development. The review of the 2010 budget (USD 5 169 491) reveals that it has decreased by around 20 per cent, compared with that of 2009 (USD 6 594 632). An additional 20 percent cut in the overall budget of the MoA, which includes the FD, was recently requested by the MoF (pers. comm. in May 2010).

The FD has other difficulties in the field. For example, forest areas are fragmented without clear demarcation, and some locations contain no clear boundaries.

The current management approach for forest areas lacks the proper mechanisms to involve the local community or other key stakeholders, such as the private sector. Nevertheless, the FD has developed special regulations to allow local communities to benefit from forest lands in conformity with the technical conditions and criteria.

The insufficient budget allocation to the FD in general and to extension in particular results in a lack of awareness and extension activities that focus on forest resources and the role they play with respect to the environment and the local economy.

IV. POLICY FRAMEWORK IN JORDAN

A. Relevant policies and sectoral strategies

1. Forest policy draft

Jordan has prepared a set of strategies, policies and action plans to conserve and manage natural resources and forests included into these documents. These include a national strategy to combat desertification, a national biodiversity strategy, and a national policy for PAs. However, currently there is no approved special national forest policy in Jordan. A draft policy document was formulated in 2007, but it was neither adopted officially nor submitted for discussion and comment by the stakeholders.

The main goal of the draft policy was the conservation and sustainable development of forest resources (water, soil, flora and fauna) and the improved use of products and services for the benefit of the people and the national economy.

In order to achieve this main goal, the draft policy identifies the following objectives:

- Institutional strengthening to develop an adequate institution with financial and administrative autonomy, in order to support sector activities and efficiently manage forest resources. I
- Forest management to protect and manage, in a sustainable, participatory manner, the forest resources, and to improve income generation through sustainable use of wood and NWFPs. F
- Promotion of participatory forestry to develop partnerships with local communities, secure their rights and build their capacity to manage the natural resources, in order to improve their livelihood. P

The implementation strategy addressed the following three main themes:

- Capacity building and institutional strengthening C
- Forestry information, management and conservation F
- Community forestry C

Among the priority issues addressed in the document are (a) the diversification of forestry products and services that would meet the needs of community and (b) the search for opportunities for additional financing.

With regard to financing, the policy draft addresses the need to create a legal mechanism (Jordan Forest Fund) to secure financial resources for forest sector management and development.

2. Water strategy and policies

The Ministry of Water and Irrigation (MoWI) adopted a Water Strategy in 1998 and supplemented it with policies in four water sectors, aiming to achieve a balance between water demand and supply. The four policies are outlined below.

Water Strategy

The five main elements addressed in the strategy include: (a) establishment of a comprehensive national water data bank; (b) prioritization of water resource allocation to meet basic human needs, followed by tourism and industrial purposes; (c) collection and treatment of wastewater, marginal quality water and brackish water sources; (d) protection of water resources against pollution; and (e) sustainable mining of renewable groundwater aquifers.

Groundwater Management Policy

The groundwater management policy addresses the management of groundwater resources. This includes development, protection and management of resources, as well as reducing extraction for each renewable aquifer to sustainable rates. It also covers agricultural use, water quality and efficiency.

Irrigation Water Policy

The six main elements of the Irrigation Water Policy of potential relevance to forests include (a) protection of irrigation water sources against pollution; (b) enhancement of on-farm irrigation efficiency; (c) the provision of surplus surface water during the wet season to farmers to leach soils; (d) the use of brackish water in irrigation and the monitoring/mitigation of soil salinity; (e) the monitoring of irrigation water quality from the conveyance and distribution network; and (f) the use of marginal quality water, such as treated wastewater effluent.

Wastewater Management Policy

The five key policy issues included in the wastewater management policy are (a) protection of the environment and public health; (b) consideration of treated effluents as a source for irrigation reuse; (c) treatment of wastewater towards producing an effluent fit for reuse in irrigation; (d) processing of sludge, which may be used as a fertilizer and soil conditioner; and (e) blending of treated wastewater with fresh water.

Although the water sector is closely linked to forests, the water strategies mentioned above do not address this important point. The exceptions are in the groundwater policy, which addresses the protection of the recharge area (watershed), and in the wastewater policy, which points out that the recycled wastewater and wastewater sludge are particularly suitable for use in irrigating and fertilizing tree plantations because of very small risk of contamination and health hazards.

It should be noted that treated wastewater is already used to irrigate newly planted forest areas in a few locations.

3. National Strategy for Agricultural Development

The National Strategy for Agricultural Development (NSAD) for the 2000-2010 decade was prepared in 2002 by the Consultative Economic Council. The strategy stressed sustainable agriculture and protection of natural and biological resources. It is the most comprehensive environmental strategy. In addition to combating desertification, it includes strategic and operational programmes covering most issues of biodiversity conservation and sustainable use.

The NSAD identifies certain environmental added value and benefits that implementation of the strategy would achieve. These are as follows:

- To conserve land, water and natural vegetation (including forests and trees), and utilize these within their production capacity to ensure sustainable and long-term agricultural production.
- To conserve Jordan's biodiversity and utilize it in supporting agricultural development.
- To halt unplanned expansion of urban areas on agricultural land.
- To stop violations of current legislation that prohibits building on agricultural land through denial of services to buildings on such land.
- To combat desertification.
- To secure requirements for sustainable development to protect the environment, agro-biodiversity and agricultural resources.

- To conserve agricultural land by controlling soil erosion in mountainous areas with steep slopes through improved agricultural practices and water harvesting techniques.

The NSAD states policies and strategies for sub-sectoral developments (Rain-fed Agriculture Sub-sector, Livestock and Rangeland Sub-sector, Irrigated Agriculture in the Jordan Valley Sub-sector and Irrigated Agriculture in the Highlands). The projects and activities listed in the document are not directly linked to the forest sector; however, they are of some relevance as they take into consideration the conservation of natural resources and the combating of desertification.

4. Agricultural document

The Agricultural Document, launched in 2009, aims to discuss and address barriers to agricultural development. Its formulation and development were based on a comprehensive revision of the NSAD (the review implemented and disbanded programmes, and identified obstacles hindering implementation), since NSAD represents the general framework for agricultural development plans and programmes. Therefore, the Agricultural Document is an updated version of NSAD. The Agricultural Document identifies obstacles and proposes solutions adopted according to the conditions of each governorate. These challenges and proposed solutions are classified according to sector for easy follow-up and monitoring.

A proposal for procedures, programmes and projects required for the execution of the National Plan for Agricultural Development was prepared and included (after approval by a national forum) in the Agricultural Document. This document clearly addresses both the protection and development of forest and pasture resources as a main concern in the coming phases of the implementation of the NSAD. The document discusses in detail priorities, challenges and objectives reflected in projects and actions.

Priorities:

- Utilization of non-traditional water sources in agricultural production (production of fodder and forest development).
- Development and protection of the health of forests and pasture.
- Enhancement of infrastructure for forests in order to guarantee proper protection for forests.
- Activation of legislation related to the protection of forest and pasture resources.
- Execution of afforestation projects and establishment of an information system on forest resources.

Challenges:

- Inefficiency in the development and protection of forest projects, due to the lack of financing, human resources and proper infrastructure for the implementation of these projects.
- Inefficiency in fire fighting, due to both the lack of protection and surveillance personnel and the lack of modern control systems, technology and infrastructure necessary for firefighting, such as control towers.
- Ineffective sanctions against those who carry out illegal activities in forests, and non-application of penalties provided by the Law on Agriculture, resulting in an increase of attacks on forests.
- The failure of many implemented afforestation projects because of the lack of irrigation water.
- Lack of courts specialized in forest-related criminal cases.
- Lack of area for the creation of grazing reserves, compared with pasture areas, in view of the growing demand for grazing resources.
- Degradation and misuse of pastoral resources, due to unsustainable management, the lack of pertinent legislation, and the ownership of large tracts of these lands by citizens who cannot rely on or refer to any plan for management and maintenance.
- The failure to make optimal use of treated water from water purification plants in the development of forestry resources.
- Poor public awareness of the importance of forests.

The document addresses the issue of financing for SFM as a challenge hindering the execution of the NSAD in general and forest projects in particular.

The main actions proposed for the development and protection of forest resources include:

- Producing 5 million forest tree seedlings per year
- Afforesting 1 415 ha (14 150 donums) of land in the Kingdom
- Planting 100 km on roadsides
- Replanting 607 ha (6 070 donums) of land in the Kingdom
- Replanting 50 km on roadsides (reforestation).
- Maintaining 526 000 ha (5 260 000 *donums*) of forest lands

5. National Agenda 21

Jordan's National Agenda 21 outlines several key areas directly related to natural resources, dry land issues and energy. It promotes a participatory approach at all levels to ensure success and sustainability. Agenda 21 also reflects an integrated approach to environment and development and converges with objectives of poverty alleviation and sustainable human development. Agenda 21 is an umbrella document that identifies combating desertification as a national priority. It promotes its integration into the national policy and calls for the involvement of all stakeholders in the implementation of proposed programmes and actions.

Agenda 21 provides clear linkages between the forest sector and other sectors, including water resource management, land resource management, agricultural resources, energy resources and mineral resources.

Chapter I addresses Forest Resources Management. Objectives for this sector include the following:

- Expand areas under forest vegetation and improve forest quality with plantations and extensive afforestation of bare or degraded lands best suited for forest crops.
- Organize, maintain and improve all forest stands so as to ensure maximum returns of forest products, impact, services, etc. from them.
- Meet, to the extent possible, the needs of the people for forest products, thereby reducing dependency on imports.
- Protect and conserve existing forests, particularly in mountainous regions.
- Set up a national forest monitoring system.

6. The National Agenda

The National Agenda was prepared in 2005 and launched in 2006, comprising a comprehensive political and socio-economic reform plan for the country until 2017. The National Agenda is based on extensive research and integrated inputs from key players and organizations from within and outside the government. The main goal of the National Agenda is to achieve consistent policies and ensure that they will not be subject to government change, all the while taking into consideration the need to regularly develop and update these policies.

The National Agenda contains a special section on environmental sustainability. This section focuses on six issues, two of which are desertification and sustainable land management. Forests and forest reserves are addressed under these. The National Agenda policy and practical measures include the following relevant actions in sustainable land management and desertification:

- Survey and define criteria for desertification hazards; map areas accordingly.
- Establish a monitoring system and use it efficiently.
- Conduct socio-economic surveys in drought-threatened areas.
- Establish other alternative livelihood measures that could provide incomes in drought-prone areas.
- Document traditional knowledge on soil protection measures and on combating desertification.

7. Protected areas policy draft

A recent national policy for PAs in Jordan is in the process of being adopted officially. The policies presented in this document are all related to the creation and maintenance of a national network of PAs, including forest reserves, known as the Jordan Protected Area (JPA) system. This JPA system is regarded as critical for ensuring that Jordan's natural and cultural resources are safeguarded for the future. The mandate of the JPA system is to conserve, protect, restore, perpetuate and interpret Jordan's significant natural, archaeological, cultural and recreational resources.

The policy document outlines the overarching national position concerning PAs, and the effective management and sustainability thereof. The policy statements provide a standard set of principles and guidelines for decision-making about management and use. They have been designed to support several goals, including (a) critical long-term resource protection and sustainability of use; (b) long-term environmental benefits via increased public environmental awareness; (c) generation of economic returns to Jordan, the local communities and traditional users, and the JPA system itself; (d) effective institutional and legal arrangements that coordinate resource management; and (e) establishment of financial sustainability of JPAs individually and collectively.

The policies cover (a) the designation and establishment of PAs, (b) the use of land use management tools, (c) the recognition of private and community managed areas as part of the PAs, (d) the delegation of management, (e) climate change and global warming, and (f) integration into the national and regional land use systems. In addition to these, other thematic policies cover, for instance, outreach, education and awareness; economic benefits and mechanisms for sustainable financing; socio-economic concerns and community participation; and governance and institutional coordination.

Once adopted, the policy will provide another framework for the management of forest areas in Jordan, in particular addressing financial support. It will also improve the level of participation of all stakeholders and will facilitate the management of private forest areas.

8. National Biodiversity Strategy and Action Plan

The Jordanian National Biodiversity Strategy and Action Plan (NBSAP) is a response to the obligations of the Convention on Biological Diversity (CBD). The NBSAP has been developed as a guide to the implementation of the biodiversity convention in the country. It was published by the MoE in 2002 and based on a national consultation process.

Among the main strategic goals of the NBSAP are the following:

- To conserve biodiversity and use biological resources in a sustainable manner.
- To manage natural resources and distribute roles among institutions in a way that conserves the basic natural resources.

The NBSAP contains five main themes under which specific projects were proposed:

- Protection of biological resources
- Sustainable use of biological resources
- Reduction of the impact of mining on biodiversity
- Promotion of integrated land use planning in water resources development, and linkage of land tenure and land use planning
- Action towards a biodiversity-oriented society

Forests are discussed in the strategy under theme 2: A Sustainable Use of Biological Resources. The strategic goal for the "Forest" subtheme is to "recognize the social, economic and ecological values of forests and ensure their conservation and sustainable management".

Among the actions identified in the strategy that have relevance for forests are:

- Improving management and conservation of forest resources.
- Assessing forest and windbreak values vis-à-vis their environmental functions such as pollution control, air filtering, particulate removal, noise abatement and temperature amelioration in the cities.
- Updating forest conservation regulations and bylaws.
- Capacity building of scientists and forest department staff on issues relevant to the conservation and management of soil and forest resources.
- Assessing the medicinal values of different plant species in natural forests.
- Setting up a national strategy for conservation and management of forest ecosystems.

9. National Action Programme to Combat Desertification

The National Action Programme to Combat Desertification (NAP) provides guidelines of the national actions needed to combat desertification in Jordan. It outlines in detail the basis for performing the relevant tasks, objectives, activities and methodology for combating desertification in Jordan. This National Action Plan to Combat Desertification also describes the present institutional framework of government institutions and non-government organizations responsible for or active in the field of combating desertification.

The overall objective of the NAP is to provide an integrated development plan and subsequent programmes targeting local communities and environmental components in areas under threat of desertification. The specific objectives of the NAP are:

- To highlight desertification as a national priority and develop an action plan to be integrated within the national policy.
- To outline measures needed to combat desertification and mitigate the effects of drought and the misuse of land through effective action at all levels.

The NAP includes six major programmes that are mainly project-based. The programmes include several proposed projects related to desertification monitoring and control, capacity building, natural resources rehabilitation and development. These programmes and projects provide the framework for an action plan to combat desertification. The proposed programmes are:

- Desertification Information System
- Drought prediction and desertification control
- Capacity building and institutional development
- Restoration of degraded ecosystems of rangelands and forests
- Watershed management
- Human, social and economic development initiatives

The NAP is one of the most relevant strategies to forests, as all objectives and actions are of benefit to this sector. It clearly addresses the degradation of forest area at the strategy level, and its action plan includes specific projects to conserve forest resources and to restore the degraded forests.

10. Integrated Financing Strategy for Sustainable Land Management

The MoE and the MoPIC have developed, with the help of the Global Mechanism (GM), an Integrated Financing Strategy for Sustainable Land Management (IFS). This strategy aims at facilitating the resource mobilization needed to implement the National Action Plan to Combat Desertification.

Contained in the IFS is an action plan to delineate activities for increasing different financial resources and for promoting resource mobilization-friendly changes in the enabling policy, regulatory, planning and budgetary frameworks.

The IFS clearly discusses interlinkages with forests. For example, it includes the definition of land degradation as “reduction or loss of the biological or economic productivity and complexity of rain-fed

cropland, irrigated cropland, or range, pasture, forest and woodlands". The strategy also confirms the link between deforestation, carbon emissions and global climate change in addition to the impacts on environmental goods and services provided by forests, which will be negatively affected if the appropriate measures and actions are not taken.

As part of the IFS development process, the IFS examined the prioritization of projects included under the National Action Plan to Combat Desertification. The "Rehabilitation and Development of Forest Environments" project, identified under programme 4, was one project ranked as high priority to be executed. This reflects the understanding of the significance and the priority of conserving and sustaining forest resources for the products and services they provide.

11. National Energy Strategy

The National Energy Strategy includes environmental components in its focusing on the development of renewable and sustainable energy sources that connect environmental protection and transition to sustainable energy. The strategy does not include issues of climate change and opportunities for both environmental protection and sustainable energy through the Kyoto protocol, but it is considered a suitable planning road map for sustainable energy production and consumption.

The energy strategy states a target of 2 per cent contribution of renewable energy in the total energy mix in Jordan and increases the share of renewable energy for generating electricity to 8 per cent.

This strategy does not explicitly address the potential negative impact on forest resources resulting from significant pressure put on these resources by poor people who collect firewood to use for heating as an alternative when fuel prices increase.

12. Poverty Reduction Strategy

The National PRS was launched in 2002, aiming at improving living standards of all poor segments of the society. The strategy includes short-, medium- and long-term initiatives in each policy area. Policy objectives include social safety, employment, education and healthcare. The strategy recommends comprehensive measures to reduce poverty and to build on current experiences by addressing issues of health, environment, education, sustainable micro-finance, improving economic security of low-income workers, and increasing employment opportunities in rural areas and secondary towns. It limits its scope to poverty alleviation and does not attempt to build a comprehensive social policy.

The PRS does not reflect a deep and clear understanding and appreciation of the "sustainable livelihoods" concept and the connections between poverty eradication and natural resources management. This is a major omission in the PRS.

This strategy does not address links with forests, and there is no mentioning of the role of forests in supporting the livelihoods of the poor. The strategy thus does not take advantage of opportunities that forest programmes can provide for eradicating poverty. This may reflect a lack of understanding and/or low governmental priority given to forests. This could consequently reduce opportunities for the donor community to get engaged in forest sector development.

13. National Tourism Strategy

The Ministry of Tourism (MoT) developed the 2004-2010 National Tourism Strategy with a private-sector led perspective on placing tourism as a major income generating sector. The tourism strategy states as its mission: "Jordan will develop a sustainable tourism economy through a partnership of government, the private sector and civil society to expand employment, entrepreneurial opportunity, social benefits, industry profits and state revenue".

This strategy is based on private sector investments for promoting national tourism, and includes such ecotourism sites as forest reserves as "assets" for national tourism. The strategy fails to address some

basic concepts of "sustainable tourism" such as carrying capacity, conservation and sustainable use of natural resources, or guidelines for management of natural heritage sites and ecotourism locations.

The strategy states that tourism development in Jordan will be sustainable and characterized inter alia by:

- Preserving the environment and adopting ecologically sound policies
- Respecting the lifestyles and cultures of its people and communities
- Balancing the principles of profits with the need for socially responsible business practices

Although forests (e.g., Dana Biosphere Reserve, Dibe'en Forest Reserve and Ajloun Forest Reserve) are one of the main eco- and nature-based tourism attractions in Jordan, there is no mention in the National Tourism Strategy of the role of forests. Integration of forest resources into this important sectoral policy and the development of appropriate cost- and benefit-sharing mechanisms among the tourism and forest sectors are a priority and necessity for both sectors.

14. Conclusions

The review and analysis of the above policies and strategies reveal that most of the agencies reflect a sectoral approach in natural resource management. SFM is a multi-dimensional task that requires a multi- and cross-sector coordination among all involved parties; i.e., SFM is greatly dependent on the policies of various sectors. However, the aforementioned strategies and policies of each agency are unsynchronized and inconsistent; they do not explicitly complement forest development efforts management and they tend to focus on each sector separately. Coordination is crucial and contributes to the facilitation and development of a long-term strategy and plan for forest sector development and financing.

H. Legal and Regulatory Frameworks

A number of laws pertaining to the forest sector exist in Jordan, including the following:

- Agriculture Law No. 44, 2002
- Environmental Law No. 52, 2006
- Management and Administration of Government Properties Law No. 17, 1974
- Management of Natural Resources Law No. 12, 1968
- Municipalities Law No. 29, 1955
- Land Use Planning Law, 2007
- Water Authority Law No. 18, 1988

The following section describes in brief the two main laws: Agriculture Law No. 44, 2002 and Environmental Law No. 52, 2006. These are of high relevance to forests in Jordan. Annexes 2 and 3 contain the text of these relevant legislations.

1. Agriculture Law No. 44, 2002

Forest protection and utilization is regulated legally through Agriculture Law No. 44 of 2002 (see Annex 2), of which the main relevant articles are Nos. 27 to 35.

While the present law (with its relevant articles) seems more appropriate for forest protection when compared with the former law of 1973, it focuses mainly on prohibitions, limitations and sanctions. It hardly approaches forests from development and habitat perspectives at all; therefore, forest development issues are missing in this law.

The present law of 2002, which repealed the law of 1973, brought some improvements, in particular on the protective status of forests.

Nevertheless, forest and legal experts are of the opinion that there is a need to deal with some gaps, conflicts and overlap with other laws and regulations, such as the law of the “Department of States Properties”, the regulation of the stone mines and the law of Jordan Valley Authority (JVA).

The present Agriculture Law No. 44 of 2002 and its relevant articles to forestry do not contain specific provisions regarding forest policy, public involvement and participation, and the role of the private sector.

Forest legislation has provided a financial framework only for some financial measures, such as fines and sanctions. Fines and sanctions are generally very modest. They are ineffective in preventing highly profitable illegal activities, and in many cases do not provide sufficient compensation for the damage caused. No specific financing instruments exist in the law for forest management and development. The law does not make any provisions for instruments that would secure financial support for sector management and development (e.g., a national forest fund).

This law does not clearly define the role or mandate of the FD (as the responsible entity for the forestry sector in Jordan) and the provincial levels. The law disregards the NWFPs that contribute to income generation and poverty alleviation in rural communities.

Several recommendations have been made to revise the current forest legislation in order to avoid the weak enforcement of regulations, which is regarded as one of the largest problems in managing forest areas and other natural resources in Jordan. Weak enforcement of regulations is also due to deficiencies in the capacity and capability of controlling, monitoring and reporting of the concerned institutions.

However, it is worth mentioning that the FD is currently working with the Legislation Bureau to review, amend and update the existing forest legislation in Jordan. The new proposed revision focuses inter alia on:

- Delegation and exchange of forest lands to individuals or entities
- Forest land exchange³
- Toughening of financial penalties to suppress forest crimes
- Development of public/private partnerships for forest law enforcement
- Allocation of forest plants to any entity for plantation purposes⁴

2. Environmental Law No. 52, 2006

This law contains 27 articles. The first set of articles (1-4) provides necessary definitions as well as specifies and lists the duties and responsibilities of the MoE with respect to environment protection. Articles 1-4 include, inter alia, the following seven elements: (a) determining the public policy for the protection of the environment; (b) preparing plans, programmes, and projects necessary for the realization of sustainable development; (c) preparing the specification and the standard criteria; (d) monitoring and measuring the environment elements and components; (e) coordinating all the national efforts aimed at preserving the environment; (f) approving, establishing, and managing the natural reserves and national parks; and (g) preparing environmental emergency plans.

Regulations under article 25 of the law having relevance to forestry include:

- Regulation of nature protection
- Regulation of air protection
- Regulation of natural reserves and national parks
- Regulation of soil protection
- Environmental Impact Assessment Regulations

³ The Government provides bare land for owners to develop and benefit from and receives equivalent forest land in exchange.

⁴ Plants are allocated for free under the current forest law, but it is recommended to pay at least the minimum cost for them.

Among the important provisions (Articles 16, 17 and 26) pertaining to the resource mobilization is the establishment of the Environment Protection Fund (EPF). According to the regulation, projects and activities that are of relevance to the protection and development of forest sector are eligible for funding from the EPF.

I. Institutional framework

A strong and adequate institutional framework is a critical factor in the success of the strategies, programmes and resource mobilization.

An overview of the key stakeholders and their roles in SFM and resource mobilization as well as the means for coordination is provided below.

1. Key government agencies

Ministry of Agriculture

The MoA is comprised of several directorates and departments, of which close and direct relevance to forest sector are the Directorate of Rangelands, the FD and the Agricultural Extension Directorate.

The MoA is responsible for the formulation and implementation of national policies and programmes aimed at achieving rapid agricultural growth through optimum utilization of the country's land, water, soil and plant resources, including forests. The MoA is responsible for collecting and maintaining a wide range of statistical and economic data (a) related to agriculture, forests, land use and land degradation, and (b) required for development planning and organization of an agricultural census.

The FD is part of the MoA, and it has the national mandate to manage and protect forests in Jordan. The FD maintains several forests in Jordan and is in charge of re-forestation schemes of roadsides and highways. The headquarters of the Directorate is responsible for the following:

- Afforestation and nurseries
- Management and utilization
- Forest land and survey
- Administration and finance

In addition, the Biodiversity and Extension Unit and a Seed Centre are at headquarters.

At the provincial/governorate level, there are 42 field offices with the same mandate as headquarters. The field offices are under the FD in technical matters, and they are under the Agriculture Directorates of the governorates in administrative matters.

The FD tries to compensate the loss of forests through various activities:

- Afforestation and road-side plantations
- Management of forests
- Law enforcement
- Seedling production, selection and distribution
- Protection of the national forests, in particular the highly endangered forests.
- Management of watersheds

In terms of staff numbers, FD headquarters has a staff of 70 employees, including 13 Agricultural engineers and 3 technicians in addition to the administration staff, rangers and labourers. The total number of FD staff in the provincial offices is 950 (of which 42 are agricultural engineers).

Ministry of Environment

In January 2003, the MoE ⁵ was established with the aim of promoting protection of the environment, improving its various elements and executing environmental policy in cooperation with the relevant authorities. All pertinent environmental matters come under its jurisdiction.

The MoE is responsible for planning, promoting and coordinating environmental issues in the country. Within the sustainable development framework, a number of guidelines have been prepared for major development projects (energy, infrastructure, transportation, etc.) which take into account impact assessment of the project and suitable measures for conservation of the environment.

As a part of the institutional structure of the MoE, the Directorate of Nature Protection addresses desertification, biodiversity and PAs, all of which are related to forests. The directorate is a focal point for both the United Nations Convention to Combat Desertification (UNCCD) and the CBD.

The Directorate is in charge of the preparation of an environmental plan for nature conservation, the protection of natural resources, and the determination of optimum utilization of land.

The MoE has two national coordinating bodies with relevance to forestry: the National Committee for Combating Desertification and the National Committee for Biodiversity. The two committees coordinate different efforts in combating desertification and biodiversity through the implementation of national strategies and plans. The FD is represented in these two committees to address any forest-sector issues.

Ministry of Water and Irrigation

The MoWI is responsible for the overall planning, policy formulation, coordination and guidance in the water resources sector. First, MoWI is in charge of irrigation. MoWI formulates policy, plans and provides guidance in respect to irrigation. It also provides technical guidance, scrutiny, clearance and monitoring of irrigation. It plans and implements multipurpose projects. Secondly, MoWI conducts overall planning for the development of ground water resources and establishes utilizable resources. It formulates policies for exploitation, and then oversees and provides support to national-level activities in ground water development. MoWI formulates the national water resources development plans and determines the water balance of different basins/sub-basins for possible interbasin transfers.

Ministry of Planning and International Cooperation

The MoPIC is responsible for reviewing and coordinating planning at different institutions in the country and for coordinating with donors. MoPIC has no direct role in forest development.

MoPIC guides and coordinates government socio-economic policies, programmes and priorities, and enhances international cooperation aimed at addressing Jordan's priorities. The specific duties of MoPIC which could have a link to forest management and financing are as follows:

- Setting general policy for the social and economic development processes and regulating plans and programmes for process implementation.
- Providing, sourcing and managing the necessary funds for development projects through loans, grants and technical assistance, in coordination with the MoF and the General Budget Department.
- Networking and liaising among international donors, local ministries and governmental institutions.
- Assessing and coordinating monetary, financial and trade policies with development strategies and programmes.

⁵ The Ministry of Environment was established in accordance with the interim Law No. (1) for the year 2003 (which was later repealed by the current Environmental Law No. 52 for the year 2006), which repealed the Environment Protection Law No. (12) from the year 1995, and, consequently, cancelled out the General Corporation for Environment Protection (GCEP).

- Coordinating with the General Budget Department (GBD) and institutions and departments concerned in preparing the National Capital Budget to ensure its compliance with long- and short-term strategies and programmes.
- Managing domestic and external public debt in cooperation with the MoF.
- Ensuring that project deadlines and objectives are met, particularly those related to the MDGs.

MoPIC has established a Government - Donor Coordination Working Group to enable more focused and in-depth discussions on priority sectors, with key donors and stakeholders from each sector. The group has direct links to forest development and management through the sub-groups of water and agriculture, environment, poverty alleviation and local development, and trade and investment.

The main objectives of establishing these working groups are (a) to develop a structured and technical level dialogue with donors on Jordan's developmental needs and priorities, and (b) to better coordinate development assistance efforts in the various priority sectors. This coordination mechanism is a potential source of funds and a forum for the FD to raise and discuss priorities related to forest development and management with the key donors in Jordan.

The Projects Department receives and studies financing requests from concerned organizations and ministries. It also monitors financed projects. Monitoring includes follow-up reports, periodic field visits and direct contact with executing parties. The Environment Section and Water and Agriculture Section of the Projects Department are in charge of follow-up projects and activities related to forest management.

Ministry of Finance

The MoF is responsible for the development of plans for implementing the fiscal policy of the State. In this capacity, it follows up the realization and collection of public revenues, manages the cash flow, and supervises the disbursement of public expenditures according to financial regulations. According to the law that regulates the general budget (No. 39 for the year 1962), the MoF is responsible-- through the General Budget Department-- for the preparation of the general annual budgets. Furthermore, MoF is in charge of examining requests for financial allocations⁶ submitted by all governmental institutions. MoF may reduce, increase, add to, compare and/or revise amounts requested. Finally, MoF has a key role in monitoring the financial efficiency of public expenditure through reviewing the financial reports that are submitted monthly by each institution.

Other relevant government agencies include:

- Ministry of Municipal Affairs (MoMA)
- MoT

2. Non-governmental organizations

Non-governmental organizations (NGOs) play a significant role in the protection of natural resources in Jordan. However, there are very few NGOs specialized in forests. The RSCN is mandated by the Government to establish and manage PAs, including forest reserves. In addition, there are two newly established NGOs: "Al Shajarah" Society and the Jordan Society for the Protection of Forests and Environment. Both of these are aimed mainly at raising awareness among the different target groups on the importance of forest resources.

NGOs generally do not rely on public funding, as many of them have funding from private sources. This enables them to work independently of the government and sometimes even to challenge its decisions. The exception is for RSCN, as it receives annual support of about USD 300 000 to contribute to the cost of managing seven established reserves according to the government mandate.

⁶ The public fund allocated by MoF to the governmental institutions, including the FD, is made based on the cost estimates of their operations, which are submitted to MoF for examination and review. However, in most cases institutions overestimate their requests because MoF in most cases reduces –after examination and review– the requested amounts.

However, a number of well-organized NGOs are actively involved in the environment, nature conservation and combating desertification. They are effective entities and their actions are well accepted and appreciated both by the government and general public. These NGOs collaborate with government institutions, including the MoA and MoE, in implementing programmes, participating in meetings and similar events, and being members of specialized councils and committees, in which they play a major role in education and awareness raising.

Currently there are 30 environmental NGOs. Most of these are national-level organizations. A few NGOs are village/community or grass-roots level organizations. Examples of such NGOs include cooperatives, interest associations, village institutions and resource user groups.

The activities of NGOs with respect to forests in Jordan generally either increase general awareness about the environment or contribute to specific issues (such as PAs in the case of RSCN).

The major problems NGOs face include the lack of funds and sustainability. NGOs have complained about a recent law which requires a permit for external fundraising. Either the MoE or MoPIC provides this permit. Nevertheless, some NGOs are well-equipped to raise funds, and are effectively engaged in management and conservation of natural resources.

Royal Society for the Conservation of Nature

The RSCN is one of the few voluntary organizations in the Middle East that has a public service mandate. This includes (a) setting up PAs to safeguard wildlife and scenic areas, (b) breeding endangered species to save them from extinction, (c) enforcing government laws for the protection of wildlife, (d) controlling illegal hunting, (e) raising awareness on environmental issues through education programmes, and (f) promoting the sustainable use of natural resources. The RSCN has established six PAs (another four will be established in the near future along the Rift Valley). The RSCN has pioneered the management of wildlife areas, currently being in charge of the protection and management of a Ramsar site in Jordan. The society is generally perceived as having a remarkable record in the conservation of nature since its creation in 1966.

The RSCN is the most active partner of the Government in the implementation of legislation pertinent to wildlife and in the establishment and management of natural reserves. Currently, the Dana, Dibeen and Ajloun Forest Reserves are all managed by the RSCN.

3. Academia and research centres

Academic and research institutions are often good, active partners in environmental governance because of their relative objectivity, independent funding base, and technical and analytical skills. Such institutions have supplemented the activities of NGOs and government agencies by undertaking analyses of problems or themes that NGOs might consider too long-term or narrow in focus.

Over the years, research institutes, in collaboration with all concerned universities, have been engaged in the study and analysis of problems related to the forest sector such as desertification and drought. The emphasis is on the development of appropriate and cost-effective technologies to react to these problems and to increase the productivity of affected areas.

Examples of research and academic institutions are the Faculties of Agriculture at Jordanian universities, the National Centre for Agricultural Research and Extension (NCARE), the Higher Council for Science and Technology (HCST), and the Royal Scientific Society /Environmental Research Centre.

4. Private sector

The private sector plays a minor role in SFM. However, the current and potential role of this important sector is discussed in detail in the following sections.

5. Others

Other actors in environmental governance that are involved with forest development and management in Jordan include:

- Ministry of Education
- Civil Defence
- Royal Geographic Centre
- Environmental Police
- International Union for Conservation of Nature (IUCN)/ West and Central Asia and North Africa

V. PRESENT FINANCIAL FLOWS FOR SUSTAINABLE FOREST MANAGEMENT

A. Internal sources of financing

1. Public sector

Jordan's public expenditure on natural resources management and conservation during 2002-2006 amounted to an average of 0.8 per cent of Jordan's GDP at real prices, and 2.3 per cent of total government spending. Jordan's public environmental expenditure as a percentage of GDP compares well with the European Union's (EU) similar expenditure.

Public budget

Jordan's economy is among the smallest in the Middle East, with insufficient supplies of water, oil and other natural resources, underlying the government's heavy reliance on foreign assistance. Other economic challenges for the government include chronic high rates of poverty, unemployment, inflation, and a large budget deficit.

Jordan's budget for 2009 was approved to be USD 8.677 billion dollars, which is USD 1.3 billion higher than the 2008 budget. The deficit in the budget has jumped to USD 2.046 billion in 2009, compared with USD 977 million in 2008. The data by the MoF attributed the rise to an increase in public expenditure (public spending jumped to USD 8.43 billion in 2009 compared with USD 7.67 billion in 2008) and a drop in foreign aid. The gross revenues (domestic revenues and foreign assistance) dropped by 11 per cent in 2009 to USD 6.39 billion, while domestic revenues (tax and non-tax revenues) were down by 4.1 per cent to USD 5.92 billion. Foreign aid had sharply dropped by 53.6 percent to USD 470 million (MoF, 2010).

According to statistics from the MoF, Jordan's public debt (internal and external) increased by 12.9 per cent in 2009 compared with 2008, reaching USD 13.64 billion. The internal debt comprised 59.9 per cent of the public debt, standing at USD 8.18 billion, up 17.9 per cent compared with 2008 (MOF, 2010).

The public budget is the main source of internal financing in Jordan. The GBD is the responsible entity for budget preparation and examination. The relevant legal framework for budget is the "Regulating the GBD" Law No. 39 of the year 1962.

The amount allocated in the public budget for the forest sector in general is mainly mainstreamed in the MoA and MoE budgets (Table 5 lists the budget of other selected institutions as well for comparison purposes). The following is a brief description of these budgets:

Ministry of Agriculture budget

The budget for the MoA (allocated by the MoF according to provisions within the draft budget law for 2009) amounted to **USD 73 748 587** and was distributed as follows:

- Current USD 30 661 016
- Capital USD 43 086 158

The budget for the FD in 2009 (as received from the MoA) was **USD 6 594 632** and was distributed as follows:

- | | |
|---------------------------------|---------------|
| • FD: | USD 4 617 231 |
| • Forestry nursery development: | USD 423 728 |
| • Green Belt project: | USD 353 107 |
| • Protection of forests : | USD 706 214 |
| • Afforestation: | USD 353 107 |

It is worth mentioning that the FD faced a significant decrease (about 20 per cent) in budget for 2010 that amounted to **USD 5 169 491**. An additional 20 per cent budget cut for the entire MoA, including the FD, was recently (in May 2010) requested by the MoF.

The role and responsibility of the FD discussed above indicate that there is a list of tasks that have to be accomplished. but the limited resources available for doing so is a constraint.

Ministry of Environment budget

The MoE received a budget of **USD 8 782 485** for 2009 that was distributed as follows:

- Current USD 1 720 338
- Capital USD 7 062 146

Since its establishment, the MoE budget for capital expenses and its predictability have generally increased, since the budget is based on the National Agenda action plan. A review of the MoE budget for the last three years shows that the MoE devotes a significant portion of its budget to environmental quality monitoring, support of the environmental rangers department (Environmental Police), waste management, protection of biodiversity, pollution abatement, and wastewater management.

Table 5 Total budget allocation for the selected agencies

<i>Ministry</i>	<i>2006</i>	<i>2007</i>	<i>2008</i>	<i>2009</i>
	<i>millions of United States dollars</i>			
MoA	34.7	50.279	65.909	73.748
MoE	9.32	9.913	11.274	8.782
MoWI	3.81	4.86	6.45	7.4
Jordan Valley Authority	75	68.5	71.1	69.2
MoMA	5.93	6.82	8.21	7.65
Water Authority of Jordan	431.23	401.66	431.36	438.84

Source: MoF 2010 (General Budget Department)

Box 1 Financial instruments in the Agricultural Law (Provisional Law No. 44 of 2002)/Forestry

Article 27-e

Anyone who infringes on the directives and conditions of the grazing licence in State-owned forests shall be fined one dinar for every livestock head that is caught in unconformity, in addition to a fine of fifty dinars for each forest or range tree or shrub that was harmed.

Article 31

Holders of licences for forestry products manufacture or utilization or transportation must present their licence upon request to Ministry officials, public security personnel or any other authorized entity. Should they refuse or fail to present their licences, their entire possession of forestry materials shall be confiscated. If this is not possible, the value of the confiscated materials will be assessed according to actual prices and shall be kept with the defendant, and the offender shall be sentenced to three months imprisonment and a fine of two hundred dinars.

Article 32 b

1-Anyone who violates forest lands by constructing permanent or temporary houses, buildings or establishments or by boring wells or caves shall be sentenced to three months imprisonment and a fine of two hundred dinars for each violated *donum* or part thereof. The same sentence shall be applied to the implementation contractor. The administrative governor must immediately stop the violation at the expense of the offender. Materials and tools caught in situ shall be confiscated.

2- Anyone who encroaches upon forest lands by performing tilling or agricultural activities shall be sentenced to three months imprisonment and a fine of one hundred dinars for each violated *donum* or part thereof. The administrative governor must immediately eliminate the violation at the expense of the offender.

3- Anyone who removes or destroys border signs or fences shall be fined ten dinars for each removed or destroyed corner and twenty dinars for each sign or bridge and shall be obliged to revert the site to what it previously was.

5- Notwithstanding provisions of any other legislation, anyone who dumps wreckage; waste; solid, fluid or radioactive residues; or any environment polluting substances in forest lands shall be sentenced to three months imprisonment and a fine of two hundred dinars for each violated *donum* or part thereof. The offender must imperatively remove the discarded substances.

6- Anyone who extends water, electricity or telephone lines or constructs drains or aqueducts, streets or roads in forest lands without the Minister's prior approval shall be sentenced to three months imprisonment and a fine of two hundred dinars for each violation. The offender must correct the violation at his own expense in addition to paying a damage fee and a fee for replacement of similar items.

Article 33

b- Anyone who causes a fire in public or private forests shall be sentenced to an imprisonment period ranging from three months to one year and a fine of fifty dinars for each tree or shrub destroyed by the fire. The offender must also pay the fire extinguishing costs.

Article 34 b

1-Anyone who violates the provisions of points (1), (2) and (5) of the section (a) of this article shall be sentenced to three months imprisonment and a fine of one hundred dinars for each tree that is cut in public forests and of fifty dinars for each tree that is cut in private forests. In both cases, forest products and cutting tools caught shall be confiscated.

2- Anyone who violates the provisions of points (3) and (4) of the section (a) of this article shall be sentenced to three months imprisonment and receive a fine of one hundred dinars for each ton or part of thereof if taken from forest trees or forest products, and a fine of ten dinars for each cubic meter if taken from stones, sand, soil and humus. Products caught shall be confiscated.

Article 35 d

Anyone who violates the provisions of sections (b) and (c) of this article shall be sentenced to three months imprisonment and a fine of five hundred dinars for each rare or old forest tree, of one hundred dinars for each rare or old fruit tree and of one dinar for each wild plant that is cut or damaged.

Environmental Protection Fund

The Environmental Protection Fund (EPF) is a new sustainable financial approach established under Law No. 52 of 2006 (Articles 16, 17 and 25). Its goals are to (a) secure funds to support the

government's environmental, social and economic policies; and (b) stimulate the MoE investment in the environmental sector in Jordan. It is also designed to favour private sector projects that comply with environmental regulations and to promote the sustainable use of Jordan's natural resources.

The main sources of money for the fund are expected to be carbon trading via the Clean Development Mechanism (CDM), through the selling of Jordan's polluting rights of greenhouse gases to international governments and companies, with an expected revenue of JOD 20.5 million between 2009 and 2012. It was agreed that 5 per cent of the revenue from the CDM would be transferred to the fund. Other fund sources are fines collected from violating industries, grants from donors and expected taxes. The EPF was officially launched in April 2010.

The fund is designed to benefit private sector projects that comply with environmental regulations, while promoting sustainable use of Jordan's natural resources. It will also be used to support the Environmental Police.

The EPF currently holds 1.5 million dollars channelled back to the fund from selling carbon credits from the Aqaba Thermal Power Station, which is the first venture registered as a CDM project in Jordan.

It is expected that forests will benefit from the fund either directly, through the funding of projects to sustain forests, or indirectly, through services provided by rangers or members of the private sector that are benefiting from the fund.

Revenues from the forest sector

Forestry plays a minor role in wood production in Jordan. It nonetheless significantly contributes to the growth and development of the economy and the maintenance of environmental quality by the provision of products other than wood and several services such as recreation, ecotourism, and wildlife habitats. However, no quantitative data is available on the values of this contribution to the national economy.

Entrance fees to forest areas and charges for tourist facilities and services do not exist except at the Ajlun, Dibein and Dana Forest Reserves. These revenues are usually returned (i.e., collected by the RSCN) to the site to contribute to forest conservation programmes.

2. Private sector

There is no available data on the involvement and contribution of the private sector in SFM and forest financing. Nevertheless, the role the private sector plays today in SFM in Jordan is very limited. Yet it can potentially have an important role, especially in resource mobilization. The key for future private financing (domestic and foreign) is the country's investment environment and enabling conditions, including legal and institutional frameworks.

FD has initiated a National Afforestation Project to encourage the private sector to take part actively in forest development. FD provides a number of forestlands to several firms to carry out specific activities such as fencing, maintenance and irrigation. In return, these firms are granted financial incentives in the form of tax deduction.

B. External sources of financing

The following section summarizes the main ongoing development projects and programmes funded by foreign assistance and implemented in Jordan.

1. Key donors in Jordan

The donor community and international agencies are active in Jordan. They provide assistance in the form of grants, soft loans and technical assistance offered by countries such as Germany, Japan and China. Key international agencies active in Jordan include the United States Agency for International Development (USAID), Japan International Cooperation Agency (JICA), German Technical Cooperation

(GTZ), UNDP, Swedish International Development Cooperation Agency(SIDA), AFD, the EU, the Islamic Development Bank, the Kuwait Fund for Arab Economic Development, FAO, Global Environment Facility (GEF), the World Bank, IUCN, United Nations Educational, Scientific and Cultural Organization(UNESCO) and United Nations Environmental Programme (UNEP). A review of the foreign assistance committed in 2009 shows that the main donors were the United States of America, the World Bank and France.

Foreign assistance committed in 2009

The total amount of foreign assistance (grants and soft loans) committed to the Government of Jordan by the donor community in 2009 amounted to USD 1374.7 million (compared with USD 1137.5 million in 2008). This foreign assistance was committed to finance priority developmental projects of various sectors, including water and wastewater, health, energy, education, enhancing economic opportunities, infrastructure, microfinance and budget support (MoPIC, 2009). The public forest sector (under the FD) has not benefited from official development assistance during the past five years. Some NGOs, however, have received foreign financing for forest sector work. The details of the foreign assistance committed in 2009 are discussed below.

The total grants committed by the United States of America, the EU, Japan, China, Canada, the World Bank, United Nations Programmes, the Kuwait Fund for Arab Economic Development, France, Spain, the Islamic Development Bank, and others reached USD 697.85 million (compared with USD 719 million in 2008). Moreover, the total amount of soft loans contracted in 2009 reached USD 676.85 million (compared with USD 418.5 million in 2008). These were provided through the World Bank, the Islamic Development Bank, the European Investment Bank, the French Development Agency, Germany, the Kuwait Fund for Arab Economic Development, and Sweden. (MoPIC, 2009).

The clear trend of increasing foreign assistance over the last years is attributable to the support provided by donors to the state budget (estimated to be around 25 per cent of the total aid in 2009), which suffered significant deficits. The increased foreign assistance also is attributable to the willingness of donors to support the reforms of the public sector in Jordan and fund vital development projects.

Table 6 Summary of foreign assistance during 2004-2009

Year	Grants	Soft loans	Total
	<i>millions of United States dollars</i>		
2004	473.99	141.53	615.52
2005	470.167	171.04	641.207
2006	485.4	189.6	675.0
2007	470.1	210.25	680.35
2008	719.0	418.5	1137.5
2009	697.85	676.85	1374.7

Source: MoPIC, 2010

Table 7 Total ongoing projects financed through foreign assistance by sector

Sector	Number of projects	Grants	Soft loans	Total assistance
		<i>millions of United States dollars</i>		
1) Water and wastewater	48	269.9	769.17	1039
2) Health	26	172.525	263.85	436.375
3) Education and scientific research	23	246.882	95.101	341.983
4) Infrastructure	7	6.96	253.67	260.63
5) Energy	16	15.162	198	213.162
6) Trade and Investment promotion, and private sector development	11	156.7	--	156.7
7) Tourism	9	35.39	116	151.39
8) Local development and poverty alleviation	10	20.484	76.1	96.584
9) financial reforms	3	93.458	--	93.459
10) Environment	15	45.616	25	70.616
11) Agriculture	18	40.43	21.673	62.103
12) human rights, good governance, and civil society	15	48.679	--	48.679
13) Microfinance	5	0.399	47	47.4
14) Transport	4	42.24	--	42.24
15) Youth	3	33.98	--	33.98
16) Employment and vocational training	8	18.80	7.5	26.304
17) Justice	5	26.3	--	26.3
18) Gender	5	9.655	--	9.655
19) ICT	4	8.703	--	8.903
20) capacity building	8	6.169	--	6.169
21) Demining	1	6.6	--	6.6
22) Others	5	47	--	47
Total	249	1351.9	1873.069	3

Source: MoPIC, 2010

In recent years, aid from the United States has increased significantly. The USAID Program in Jordan is among the fourth largest USAID programmes worldwide, in terms of both total assistance levels and per capita assistance levels. Since 1952, USAID assistance to Jordan has exceeded USD 4.4 billion.

In 2007, USD 254 million was provided to Jordan through the USAID program, and in 2008 there was an increase in the amount of annual regular economic assistance program to Jordan, which reached USD 363.5 million. Moreover, support is also provided to Jordan through the United States Trade and Development Agency (USTDA), which is a United States foreign assistance agency that delivers its program commitments through overseas grants, contracts with United States firms, and the use of trust funds at several multilateral development bank groups. USTDA started its activities in Jordan in 1996, and to date its total funding to Jordan has amounted to around USD 8 million in the areas of telecommunications, power, water, energy and transportation.

2. Thematic areas

Donors in Jordan contribute to various thematic areas. The following is a selection of the main areas to which key donors contribute by donor entity.

The United States provides support through various programmes. Development support is primarily provided through the USAID programme. The USAID programme in Jordan targets four major areas:

- Improved water resource management
- Social sector and governance, including population and family health; education; and civil society and gender

- Increased economic opportunities for Jordanians
- Balance of payment support cash transfer

EU assistance priorities are identified according to the priorities of Jordan, which are delineated in a general Country Strategy Paper (CSP). Jordan's CSP ends in 2013 and contains four main priorities: (a) political reform and good governance, (b) trade and investment development, (c) sustainability of the development process and institution building, and (d) financial stability and support to regulatory approximation. These priorities are in line with the priorities and objectives of Jordan's National Agenda initiative.

Prior to the present European Neighbourhood and Partnership Instrument (ENPI), EU assistance to Jordan was channelled through the MEDA (Mesures d'Accompagnement) programme, an EU financial instrument for the implementation of the Euro-Mediterranean Partnership. EU assistance under this instrument reached a total amount of EUR 591.7 million (including additional grants), covering the years 1996-2006. It mainly supported Government of Jordan efforts in the areas of trade enhancement; macroeconomic stability; economic reforms; social reforms; human resources development; industrial modernization; infrastructure development; and strengthening of pluralism, civil society and the rule of law. The current EU assistance to Jordan is wide in scope and includes:

- Political reform and good governance
- Trade and investment development
- Sustainability of the development process and institution building
- Financial stability and support to regulatory approximation
- Good governance, human rights and civil society
- Trade, investment and industry development
- Education
- Water resources
- Energy

The United Nations system has provided technical assistance to Jordan since 1952. United Nations agencies assist Jordan according to the Common Country Assessment (CCA) and the United Nations Development Assistance Framework (UNDAF) for Jordan for the period of 2008-2012.

The United Nations development cooperation programmes intended for implementation address all MDG goals. They contribute to the achievement of the following three UNDAF outcomes by the year 2012:

- Quality of and equitable access to social services and income generating opportunities are enhanced with focus on poor and vulnerable groups.
- Good governance mechanisms and practices established towards poverty reduction, protection of human rights and gender equality in accordance with MDGs.
- Sustainable management of natural resources and the environment.

The World Bank is among the donors that have a long history of cooperation with Jordan. It supports many programmes in Jordan. Relevant to forests, the World Bank is supporting one loan project entitled "Conservation of Herbal and Medicinal Plants Project", and one GEF Trust Fund grant of USD 6.15 million "Jordan Integrated Ecosystem Management Project in the Jordan Rift Valley", which is currently implemented by the RSCN in cooperation with other institutions.

The specific activities of support addressed in the World Bank Country Assistance Strategy-CAS- (2006-2010) for Jordan centre around four pillars:

- Productive job creation through strengthening the business environment and human resources for a skill-intensive and knowledge-based economy.
- Local development through increased access to services and economic opportunities.
- Social protection and expanding inclusion.
- Public expenditures restructuring and public sector reform.

Jordan has also benefited from several non-lending (grants and technical assistance) services in various arenas, such as health, public sector reform, family development, women and privatization. JICA has provided technical and financial assistance during the last two years in the form of grants and soft loans in key sectors, including water and wastewater, environment, health, industrial development, tourism and poverty alleviation. In addition, Japan has an extensive technical cooperation programme implemented by JICA. The programme includes tourism development, family planning, environmental protection, water resources management, information technology, agriculture, youth, social welfare and health. As part of Japan's technical cooperation program, there are several Junior and Senior Volunteers operating in Jordan in areas of youth, social welfare, tourism, environment, health, information technology, agriculture, etc.

Innovative Sources of Financing

New funds of potential relevance to SFM financing are emerging rapidly and should be investigated further. Examples are environmental funds and climate change-related funds. Mobilizing funds from non-traditional sources requires knowledge of the mechanisms and instruments that are applied in the country, as well as the measures and financing required to implement them. What follows is a summary of the main potential innovative sources proposed for the forest sector in Jordan.

3. Debt swap programmes

Debt swap programmes assist developing and poor countries in repaying their debts or financial obligations through initiating a project or programme that will serve the environment of the country. The cost of implementing this initiative is deducted from the debt. Governments usually make bilateral agreements concerning the debt swap. Jordan has used this mechanism through various agencies, so debt swap programmes could be considered to support SFM. The FD, in cooperation with MoPIC and MoF, could start reviewing existing experiences with debt swaps in Jordan and identify priority projects that would benefit from this approach.

4. Clean development mechanism under climate change

The CDM provides an opportunity to finance afforestation and reforestation projects. Under the CDM, innovative technical, institutional and financial interventions can be adopted to increase biodiversity and biomass growth, as well as strengthen the capacity of local institutions. Reforestation and afforestation project leaders in Jordan should consider co-financing through the CDM. The FD is urged to conduct awareness sessions on CDM opportunities linked to SFM and closely follow up with the MoE (CDM main actor) on any developments in forestry sector eligibility for CDM projects.

Voluntary carbon market projects on carbon sequestration in afforestation or reforestation are an attractive alternative to CDM, because they are easier to prepare and process than the fairly demanding and complicated CDM projects, which are constrained by highly complicated methodological requirements.

5. The employment - Technical and Vocational Education and Training Fund

One potential national and non-traditional financing mechanisms which could also support the SFM related activity of capacity development in the field of forestry is the the Employment - Technical and Vocational Education and Training Fund (E-TVET) Fund. The E-TVET Fund was established under Law No. 46 (2008) of the Employment – Technical and Vocational Education and Training Council. The Fund is a national financing instrument, with a vision to improve the efficiency and quality of demand driven, technical skills training, in collaboration with the private sector, in order to create new or expanded employment opportunities.

There are four aims of the E-TVET Fund. First, it supports projects and activities of employment, and technical and vocational education and training. Second, it develops training and employment in various public and private sector institutions. Third, it enhances the participation of these two sectors in

education, training and employment process. Finally, it must meet the lawful requirements, including increasing the participation of women and people with special needs in the workforce.

The Fund must use the financial resources it receives in accordance with the law.

The E-TVET Fund provides financial support to institutions and to training providers who qualify after an extensive screening and review process. Funding support may include:

- Training needs assessments
- Demand-driven training
- Curriculum development
- Training materials and equipment
- Training of trainers
- Student and instructor fees
- On-the-job training

According to Article (8) of the above-mentioned law, the financial resources of the Fund consist of the following:

- 1 per cent of distributable net profit of companies licensed to operate anywhere in the Kingdom; excluding joint liability and limited partnership companies.
- Government contributions to support the Fund and achieve the objectives thereof.
- Any gifts, donations or financial aid; excluding non-Jordanian funds which shall be subject to approval by the Council of Ministers.

The E-TVET Fund has funded several projects in different sectors including Agriculture and Tourism (e.g., Training & Employment of the Newly Graduated Agronomist - Second Stage; Vocational Training in the Tourism Sector; and Vocational Training in the Tourism Sector / Aqaba).

A review of the procedures and selection criteria of the E-TVET Fund reveals that potential exists to fund activities designed and implemented jointly with local communities, having the goal of reducing unemployment and encouraging economic growth in forest areas.

6. Distribution and retaining a proportion of fines/penalties

According to law, all fines and penalties collected by the FD for forest land violations are deposited into the public treasury, so currently the FD cannot make any use of those monies. If the laws were changed, the FD could retain a proportion of these fines. The FD could use such a funding source to cover certain types of routine activities or even to offer incentives to forestry staff (rangers) in order to improve their conditions. This in turn could reduce corruption and encourage staff to take care of the forests, thereby yielding higher returns.

7. Charging a minimal fee for forest plants

The FD plants and produces over four million forest plants in 12 nurseries annually. According to Article 30 of the forestry law, the Minister may allocate, free of charge, any quantity of forest plants to any entity for plantation, if he judges this to be beneficial. Charging minimal fees for that could help the FD in maintaining this type of activity. Moreover, paying the minimal cost would also bring about more appreciation of the plants and their real value.

8. Establishing a National Forest Fund

National environmental funds in general and National Forest Funds in particular have become common instruments in many countries to channel and administer financing for specified purposes. Jordan has recently established an EPF to secure funds and stimulate investment in its environmental sector to support the Government environmental, social and economic policies. The FD is encouraged to design a

National Forest Fund to set aside a portion of national revenue for forestry purposes. As a priority, the FD could conduct a feasibility study of establishing such a Fund.

9. Public-private partnerships

Public-private partnerships have become a common mechanism in financing mainly infrastructure investments in many countries. Although they may not be applicable in every type of forestry investment, they can be a useful means of arranging and financing several types of forest sector investments, such as management of some state-owned forest areas. The initiative discussed in section 5.1.2 on the involvement of the private sector in forest development through providing forest lands to companies and allowing them to carry out specific activities could be adopted on a larger scale and further institutionalized.

10. Tourism fees

Tourism fees could be another type of financing instrument. A fee would be charged to tourists (nationals and foreigners), to cover part of the estimated costs for maintaining forest areas. Examples of entrance fees and charges for use of facilities and services are present at the three forest reserves that are managed by the RSCN, and these contribute to around 50 per cent of the operational cost. While considering that such proposals might not cover a significant amount of the total costs of operating some locations, the feasibility of such fees should still be further researched.

VI. DEMAND FOR FINANCING FOR SUSTAINABLE FOREST MANAGEMENT

A. National financing plans for forests

Financing of forest interventions is possible only if national strategies, plans and budgets explicitly include forests. A match between the national strategic priorities and plans with the donor policies would likely lead to a favourable situation in which donor support to forest sector sustainable development would be much easier to achieve.

To illustrate this point, a review of World Bank CAS for Jordan (2006-2010) reveals that forests are not among the priorities in the Bank assistance programme. The United Nations CCA and UNDAF on the other hand have mentioned "sustainable management of natural resources and the environment" as one of the priority areas and outcomes related to MDGs. Nevertheless, none of these documents expressly mentions "forests".

Many bilateral donors refer to sectoral strategies of Jordan when they carry out consultations in the country in view of their future assistance. Donors refer to the PRS Paper (PRSP). They are often interested in linkages between forest resources and their role in supporting the livelihoods of the poor, contributing to economic development and improving environmental quality.

Previous chapters of this report review several sectoral policies of relevance, including the PRS for Jordan, in order to discover whether forests are addressed and discussed. The review reveals that demand for forest financing is relatively weak in Jordan, indicated by the absence of the word "forest" in most of the relevant national strategies, including the PRSP. This absence may reflect a lack of understanding of the potential role and contribution that could be made by this sector to sustainable development in Jordan.

B. Demand by thematic areas

Apart from the influence created by donor policies on the demand for financing, the following thematic areas demonstrate the most demand for forest financing in Jordan, taken mainly from the draft Forest Policy, Biodiversity Strategy and Action Plan, and NAP to Combat Desertification.

1. Afforestation and reforestation

- Develop and implement a National Afforestation Plan (NAP) with multipurpose objectives, including watershed protection, desertification control, recreation, firewood production, and grazing reserves, based on sound scientific and technical principles and including realistic annual targets.
- Increase forest cover by identifying bare lands suitable for tree planting and to provide adequate funding to increase the land areas under forest cover, and to protect and maintain new and existing plantations.
- Prepare management plans for each new planted forest with specific treatments including watering, weeding, thinning, pest control, fencing etc., in order to ensure the survival of planted trees.
- Conduct land-use zoning and planning in forest areas and buffer zones.
- Provide support to the Forest and Pasture Seed Centre to meet the need for providing seeds of good quality and adequate quantity.
- Provide support to the genetic bank in the National Centre for Agricultural Research to maintain the forest and pasture gene pool.
- Improve nursery and plant production techniques by introducing modern technology and equipment to produce plants according to the adopted standards to achieve the expected results of the afforestation program.

2. Restoration of degraded forests

- Improve forest governance of the restoration of degraded areas.
- Attract investments in the restoration of degraded areas
- Restore degraded forest ecosystems and establish timber plantations for carbon sequestration, wood production and conservation.

VII. FINANCING GAPS AND KEY CHALLENGES FOR INCREASING FINANCING FOR SUSTAINABLE FOREST MANAGEMENT

Lack of integration of forests in poverty reduction strategies and broader national development plans is the major limiting factor for increasing SFM financing in Jordan. Contribution of forests to poverty reduction and dependence of the poor on forests need further clarification to justify financing to forests.

The present analysis shows that there also might be a lack of clarity among some decision makers regarding the concept of SFM, resulting opportunities, and the instruments needed to finance SFM.

Forests in Jordan receive little attention or recognition by donors. They may perceive investment in this area as non-profitable, or they may believe that forests in Jordan are subject to complicated stakeholder interests.

Reliable, essential data on forest resources needed to identify priorities for taking action is missing.

A. Financing opportunities and sustainability

The present analysis demonstrates that the implementation of SFM for forests in Jordan currently requires external financing. The various options for obtaining new financing include (a) improving forest revenue collection; (b) receiving a share of the revenue from domestic water supplies for management of watersheds; (c) generating international and domestic income from PAs and tourism; and (d) receiving climate change financing for afforestation and reforestation, for adaptation of forests to combat climate change, and for reduction of emissions from deforestation and forest degradation. In Jordan, the scope for climate change financing in the forest sector is estimated to be narrow, though.

The private sector will have an increasingly important role in forest sector processing and marketing, as well as in forest management. This in turn implies strongly promoting an enabling environment for profitable forest-related activities and investment by the private sector.

It is also envisioned that integration of the forest sector into Poverty Reduction Strategies and programmes would secure greater attention by donors, as forests can contribute significantly to local livelihoods and to poverty eradication.

It is foreseen that SFM could be self-financing in the long term, assuming that the services and products provided by forests are valued appropriately (meaning that beneficiaries pay the appropriate cost).

B. Capability of forests for self-financing

Self-financing is an objective that is based on revenue generation from forests. Forests in Jordan have very limited commercial value, because there is no real forest industry, with the exception of a limited industry that produces furniture and fruit boxes. In view of this and of the existing and emerging financing flows and the gaps in the legislation and institutional frameworks, the forest sector in Jordan would not be capable of becoming self-financing at least over the medium term. Possibility for self-financing exists in the long term (see the assumptions discussed at the end of section 7.1).

C. Potential and future trends

Potential exists to mobilize further resources for forestry in the future. One of the emerging instruments is the integration of forests with the climate change regime, under which financing instruments could guarantee a substantial increase in funding volumes to forests. However, for such financing instruments to become a reality, a number of steps should be taken toward legislation and institutional set up improvements. Other potential resources that could be used in the future are payment for environmental services (PES) schemes; e.g., Reducing Emissions from Deforestation and Forest Degradation (REDD+) payments and watershed conservation payments. However, it is likely that various sources would be needed as it is unlikely that there would be a single major source. This instrument might not be

applicable for Jordan -- at least in the short and medium terms-- as the forest industry sector is limited and emissions are relatively minimal.

D. Key conclusions

One of the main conclusions of the present study is that currently the forest sector and SFM are not highly prioritized in Jordan. This is a slightly controversial conclusion because several public policy statements have underlined the importance of forests and trees. Self-financing is not an easy objective to achieve at least in the medium term. New non-traditional sources of finance may potentially be available, but these will not be successful without effective regulation.

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VIII. CONDITIONS FOR PRIVATE INVESTMENTS AND AN ENABLING ENVIRONMENT FOR FINANCING SUSTAINABLE FOREST MANAGEMENT

A. Current and potential private sector engagement and operations

It was mentioned earlier that the current legislation does not contain specific provisions for the role of the private sector. The role the private sector plays today in SFM in Jordan is very limited; but this could change, and the private sector could especially aid in resource mobilization.

The draft forest policy and agricultural strategy both emphasize the need for partnerships with the private sector and shared benefits and responsibilities in forest development. This could be achieved through carrying out field activities such as afforestation, watershed management, soil conservation, exploitation of forest products (in particular NWFPs), and extending the areas under forest cover.

A number of companies in Jordan already support initiatives with no financial returns in order to improve their green image and meet Corporate Social Responsibility (CSR) targets. The involvement of and investments by the private sector in SFM activities could be promoted by targeting private companies through their CSR policies. However, to make good use of this, the legal framework should include options to create more incentives for CSR to be adopted by industries and firms. This could help and encourage the private sector to get involved in SFM-related activities as well as mobilize significant resources.

The human resources necessary to manage the forest sector require a national commitment by the public and private sector to invest in training, professional exchange and incentives to support performance excellence. The private sector could become involved and assist in transferring new technologies necessary for SFM.

Private sector investment should be encouraged to help defray the costs of operating and developing forest areas (in particular forest reserves). Priority should be given to local business development. Private sector for-profit operators, providing services including food services, guided tours and sales of arts and crafts may play a role within forest areas, but only if management measures can ensure that activities do not negatively impact local livelihoods and benefits, or resource wellbeing and user experience.

B. Underlying factors behind private sector finance

The involvement of the private sector in SFM depends on the quality of the existing enabling environment, particularly the legal and regulatory frameworks. Furthermore, the availability of the appropriate infrastructure and data and information on the forest resources are crucial in encouraging the private sector to take serious steps towards investment into SFM.

Experience has shown that among the key factors needed to promote private sector investments in forestry are (a) the reduction of barriers to SFM resulting from an inadequate policy framework, and (b) operational constraints (skilled labor force, information on production potential, participation of stakeholders, markets, etc.).

C. Measures and recommendations to induce private sector investments

There are close connections between SFM and other sectors such as Sustainable Land Management, environment and agriculture. Any financing strategy should thus involve a broad range of stakeholders and try to ensure ownership of the process. This implies that stakeholders, including the private sector, are involved in all stages of strategy development and implementation, including decision-making concerning the strategy's scope, process and outcomes.

One of the new common mechanisms in financing SFM is public-private partnerships. This form of collaboration would bring together the resources, strengths and capabilities of both sectors. Examples of

such potential joint investment and collaboration could be forest road building and maintenance, and management of some state-owned forest areas.

An enabling environment for private sector involvement in forestry would be created mainly by reviewing and improving policy and legal framework for involvement of this sector in SFM (e.g., adjustment of regulations, administrative procedures, incentives, taxation). The following options for the improvement of such involvement are required as well:

- Providing the necessary and appropriate infrastructure
- Encouraging and supporting scientific research
- Facilitating transfer of technology
- Providing financial incentives and subsidy schemes
- Making necessary data and information on forest resources available to the investors
- Enhancing licensing/permitting procedures (i.e., eradicating unnecessary bureaucracy)
- Enhancing governance and balancing the roles of the public and private sectors
- Consolidating development and implementation of related policies

Among the additional measures to induce the involvement of the private sector in forest management is the inclusion of this sector as a possible source of financing for SFM into both national and local development plans (e.g., as part of the Tourism project of the Ajlun Governorate). Additionally, targeted information materials should be developed specifically for the private sector to understand the importance in investing in SFM-related activities and mobilize more resources.

IX. CONCLUSION AND RECOMMENDATIONS

A. Conclusion

A review of the allocated funds for forests in Jordan shows that they come almost entirely from the public budget. However, financing from other sources is likely to become available if Jordan's national policies document well the demand for forest financing and if the national legal and policy frameworks are sound.

Jordan's public expenditure on nature protection as a percentage of GDP is sizeable, especially considering that it is comparable to several EU countries. However, the largest portion of this expenditure and most priorities have been designated (at least in recent years) to areas such as wastewater management and air quality improvement. This confirms the Government's commitment to improving quality of natural resources in general, but at the same time may indicate that forests in particular receive less attention and are not among the top priorities of the relevant authorities. This conclusion is supported by several findings of fact; for instance, no efforts are currently being exerted to define and develop an SFM-specific funding mechanism or instrument; and some decision makers lack clarity on the concept of SFM itself, and on opportunities resulting from SFM and the instrument needed to finance SFM. Furthermore, forests are not integrated into national development strategies, and in particular the national poverty strategies. If no one corrects this situation, it is unlikely that there will be an increase in financing for forests.

Jordan is facing challenges in mobilizing new and additional funding to support SFM, and the gap between the needs and funding is still wide. This may be due to other pressing priorities in the current national development process and to the limited attention and recognition by donors. This is perhaps because investment in forest management and development might be perceived as non-profitable, or because donors believe that forest areas in Jordan are subject to complicated stakeholder interests.

There is an urgent need to further clarify the contribution of forests to poverty reduction and the dependence of the poor on forests in order to justify allocation of resources to forests, including budgetary support.

A review of the institutional set-up of the forests reveals that there is lack of coordination among concerned agencies. Restructuring the FD and building the capacity of its staff are among the priorities that require financing to strengthen this institutional framework.

The focus of legislations is mainly on prohibitions, limitations and sanctions, and they practically ignore forest development issues. They do not contain, for instance, any specific provisions regarding forestry policy, the FD, public participation, the role of the private sector or incentives.

Despite the difficulties in obtaining reliable data on private sector financing, there is potential for involvement of the private sector in SFM. A set of legal and institutional measures needs to be considered first, though.

B. Recommendations

The following recommendations are derived from analysis, are generally related to SFM or are formulated specifically for enhancing resource mobilization:

- (a) Clearly and effectively integrate forest development and management into relevant national development plans and strategies.
- (b) Facilitate and support private sector investment in forest management by carrying out policy reforms and institutional strengthening, which would create, for instance, incentives and tax exemptions.
- (c) Create adequate awareness among decision-makers with regard to the potential contribution of forests in national sustainable development.

- (d) Enhance forest products and services in terms of quality and diversity in order to be considered as a source for funding (e.g., by enhancing infrastructure, facilities and interpretation investments).
- (e) Return to the FD a proportion of forests entrance and service fees, such as concessionaire licences and fines to support protection, interpretation, and maintenance as well as to support local development. This re-investment is a key to funding proper operations and management.
- (f) Examine and explore the innovative sources proposed in this analysis with respect to their applicability for Jordan.
- (g) Develop and establish positive incentives for the private sector, NGOs, private citizens, etc., to reduce the loss of forests, to promote reforestation, afforestation and rehabilitation.
- (h) Maintain a special unit of the FD responsible for following up on proposals, projects and other administrative aspects related to forest development. The unit should consist of a strong scientific and management team capable of setting up technical and financial aspects of the projects.
- (i) There is an urgent need to have a coordination mechanism that is legally established or (at least) operable under current legislation. A coordinating body governing this mechanism should have a clear mandate, financial autonomy, and an institutional framework. This would allow the entity to coordinate efficiently different efforts related to SFM through the implementation of strategies and plans, thus satisfying the commitments made to achieving sustainable management objectives. This proposed coordination body could, during its creation, benefit from lessons learned from other similar coordination mechanisms (such the National Committee for Combating Desertification and the National Committee for Biodiversity).
- (j) Consider involving more than one party for possible financing when defining financial plans of projects. This will encourage the international parties to get involved in financing these projects as a multi-donor fund.
- (k) Classify project proposals based on the duration of projects (short-, medium- and long-term activities), based on the amount of expenditures of the proposed activities, or based on technical aspects of the proposed projects (e.g., capacity building and equipment). Other projects could be under the emphasis of capacity building, public, etc.). This would help the owner of the project identify the right donors, and it would make it easier to market the projects under such categories for possible donors.
- (l) Most international donors consider the water and environmental sectors as high priority in Jordan. Present the projects to those donors in such a way that shows the linkages between forests and water and environment management, such as watershed management. USAID, World Bank, and GTZ are examples of such donors.
- (m) Secure enough seed funding from the government or donors at the first stage of the resource mobilization plan to prepare the required feasibility studies, environmental impact assessment studies, detailed designs, socio-economic surveys and other project preparation documents.
- (n) Organize donor meetings and partnership conferences to present the proposed projects face-to-face with potential donors and receive commitments from them.
- (o) Elicit public participation in the projects, starting from the identification phase down to the final stages of the project implementation. Getting the public involved will build trust in the projects and may also build more confidence in the donors.
- (p) It is highly recommended that the MoA/FD investigate the feasibility of establishing a National Forest Fund. The experience of the establishment of the EPF and lessons learned could be reviewed.

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