Global Environmental Fund
Land Degradation Focal Area

SAFEGUARDING AND RESTORING LEBANON'S WOODLAND RESOURCES

UNDP Lebanon - Ministry of Environment

Midterm evaluation LEB/CO IC/76/11
11 October 2011 – 7 November 2011

Acknowledgements

I would like to acknowledge the remarkable assistance received from the UNDP country team and Project personnel, counterparts and colleagues, who met with me and who patiently shared their experiences and ideas.

While I take full responsibility for the views expressed in this report, I gratefully acknowledge the contribution of all these persons to the contents of the evaluation.

In line with Project document and sustainable land management principles, the conclusions and recommendations presented focus on the participatory and cross-sectoral aspects needed to cope with land degradation and improve degraded ecosystems.

I'm aware that this focus is still new and somehow "against the tide" in terms of strategic view of the sector and reforestation activities, but it represents the innovative aspect of the Safeguarding and Restoring Lebanon's Woodland Resources Project as pilot initiative.

Contacts

UNDP Lebanon	United Nations House Riad El Solh P.O. Box 11-3216 Beirut - Lebanon Energy & Environment Programme Ms Jihan Seoud (Programme Manager) Email: jihan.seoud@undp.org
UNDP Project Manager	Lazarieh Center, 8th Floor, Block A-4 New, A4-Old, A5 Beirut – Lebanon Mr. Garo Haroutunian Email: garo@moe.gov.lb
Consultant	Mrs. Raffaella Sardi Email: raffaella_sardi@hotmail.com

Printed on recycled paper and with recycled ink

Acronyms and Abbreviations

AFDC	Association for Forests, Development and Conservation
AUB	American University of Beirut
CBO	Community-Based Organisation or grassroots organisation
CDR	Council for Development and Reconstruction
DNRP	Department of Natural Resources Protection
ESCWA	Economic and Social Commission for Western Asia
EU	European Union
FAO	Food and Agriculture Organisation of the United Nations
GEF	Global Environment Facility
IBSAR	Nature Conservation Centre for Sustainable Futures
IC	International Consultant
IR	Inception Report
LARI	Lebanese Agricultural Research Institute
LBP	Lebanese Pound
LD FA	Land Degradation Focal Area
LF	Logical Framework
LRF	Lebanese Recovery Fund
M&E	Monitoring and Evaluation
MoA	Ministry of Agriculture
MoE	Ministry of Environment
MSC-IPP	Management Support Consultant – Investment Planning Program Environment
NAP	National Action Programme to Combat Desertification
NEX	National Execution (UNDP)
NGO	Non-governmental Organisation
NRP	National Reforestation Programme
PIR	Project Implementation Report
PMU	Project Management Unit
POC	Project Oversight Committee
RBM	Result Based Management
RDNRD	Rural Development and Natural Resources Directorate of MOA
(SRLWR) Project	Safeguarding and Restoring Lebanon's Woodland Resources Project
SLM	Sustainable Land Management
SOER	State of the Environment Report (issued by MoE)
ToR	Terms of Reference
UN	United Nations
UNCCD	United Nations Convention to Combat Desertification
UNDAF	United Nations Development Assistance Framework
UNDP	United Nations Development Programme
UNDP-CO	United Nations Development Programme Country Office
UNFCC	United Nations Framework Convention on Climate Change
USFS	United States Forest Service

Table of Contents

Acknowledgements....2
Acronyms and Abbreviations....3
Table of Contents....4
Executive Summary....5
1.Introduction....7
1.1 Purpose....7
1.2 Methodology....7
2. Development Context and Project Description....8
3. Findings....9
3.1 Project Formulation....10
3.2 Project Implementation....11
3.3 Project Results....17
4. Conclusions & Recommendations....22
Annexes....27
Annex 1 Terms of Reference....27
Annex 2 Itinerary....31
Annex 3 List of persons interviewed (in alphabetical order, by first name)....32
Annex 4 Glossary....33
Annex 5 Grants financed by the Global Environment Facility's Small Grants Programme....39
Annex 6 Bibliography....41
Annex 7 List of the technical materials prepared by the MSC-IPP....43
Annex 8 Technical Recommendations for Reforestation Trials....44
Annex 9 Monitoring and Evaluation Report....48
Annex 10 Features of some recyclable containers....49
Annex 11 Photos of the evolution of reforestations in Carsick landscapes....50

Executive Summary

Lebanon has been home of important forests; long-term depletion of natural resources has led to environment deterioration and degradation. In the last twenty years, many reforestation campaigns were carried out by different actors throughout the country. While these efforts are significant from the perspective of awareness-building and sense of territorial belonging, their impact on overall forest cover is almost negligible.

The Safeguarding and Restoring Lebanon's Woodland Resources Project builds on the National Reforestation Programme and it's expected to complement this baseline by addressing gaps related to capacity development, inter-agency coordination, conceptual development, mainstreaming of sustainable land management and the scale-up of reforestation activities.

The themes focused by the Project are complex. They tackle the institutional, social and technical aspects of land planning and forest management at landscape level. They encourage actions at the local and the national level, promoting the participative formulation of policies and the amendment of the forest law, based on lessons learnt from the field. They also support a cross-sectoral vision – with emphasis on public involvement – and an extensive use of participatory techniques with communities and institutions.

The Project is relevant for the Country: the Government of Lebanon is still engaged in his long-term commitment and many non-governmental and grassroots organizations, together with the private sector, are carrying out reforestation campaigns.

In the Inception Report, the Logical Framework was revised and activities in direct support of the third phase of the National Reforestation Programme were added as a forth output. In line with the revised action plan, main Project's achievements are:

- the systematization of Municipality's requests for reforestation activities in the behalf of the III phase of the National Reforestation Programme and their presentation in the web site of the Ministry of Environment;
- the promotion of the direct participation of Municipalities for the implementation of the reforestation efforts;
- the training of 45 Municipalities in the application of the correct administrative procedures in behalf of the III phase of the National Reforestation Programme;
- the implementation of some field trials for testing the effectiveness of different cultural techniques, in order to identify the most suitable options;
- a training system to promote the use of good planting stock, based on the use of the containerized technology for forest seedling's production.

The opportunities to identify a strategy for the implementation of the stakeholder involvement plan weren't explored and the Project had difficulties in the creation of a solid coordination with other institutions and local communities, following the principles of participatory approach and public involvement, described in Project document and promoted by GEF. Activities detailed in the Inception Report, and related to the identification of an improved institutional and legal environment, weren't promoted. Activities related to the realization of a large-scale reforestation effort with the adoption of locally adapted technologies are envisaged, but potential sites and stakeholders (including local inhabitants and potential beneficiaries) have not yet been identified.

Until the date, the Project could spend about the 50% of the planned budget, equivalent to the 32% of the total budget. From the analysis of the expenditure's fluxes, it appears that the Project couldn't take advantage of the opportunities offered by the different budget lines: the

voice “individual contractual services” represents the major expense (68%), followed by contractual services (10%) covering the expenses for two separate operations of air and hand seeding and the realization of three trials in West Bekaa.

In the Inception Report, the economic resources for consultancies and technical support have been reduced. The evaluation mission is arguing that an initial external support for a better understanding of the methodological approach of the Project would have been crucial. National or international consultancies to support the team in training and technical, institutional and social aspects of the reforestation and forest management are highly recommended. Other recommendations focus in some key elements that can simplify Project implementation.

Two priorities are defined for the achievement of the first output. The creation of a multi-stakeholder committee is recommended to promote inter-agency cooperation and public involvement. The technical committee will help in the definition of priority needs and their implementation. The committee is not only functional to the Project, but mostly conceived as a platform where stakeholders can meet and share opinions, in consideration of the need of a comprehensive forest policy and in line with the efforts of the Ministry of Agriculture and in coordination with the support of the German cooperation. The second priority is the reinforcement of knowledge and capacity building activities. In line with the activities began for nursery production, it's suggested to prepare a comprehensive training system, with the support of international experts, conceived to reinforce the technical knowledge of state officials and other stakeholders and share a new vision of the functions and services of forests and planted forests.

The second output focus on the implementation of activities at local level. Cooperation-research is suggested. Field performance tests vividly can illustrate the most important results and can persuasively communicate implications for reforestation. The active participation of multiple actors (Universities, NGOs and CBOs, Municipalities and private owners) that install and measure field tests, can permit to observe take-home lessons right on the planting sites. The identification of a large-scale pilot site for reforestation and forest restoration activities in collaboration with forest-users is highly recommended. The introduction of social forestry and the combination of reforestation with the improvement of the existing forest cover or *maquis*, and the prevention of forest fires, are two fundamental steps to tackle.

The third output is foreseen as functional to the previous two: communication and monitoring are part of a general awareness program that the Project is suggested to promote, also to facilitate the involvement of stakeholders and internal and external communication.

In the behalf of the forth output, a clearer position need to be identified in terms of support to the technical activities related to the III Phase of the National Reforestation Programme. An agreement between the Ministry of Environment and the Project Management Unit has been drafted and signed, but its proper application can improve Project's effectiveness and efficiency. In terms of project management, advices mainly focus in the need of: improve and apply the existing Monitoring and Evaluation system; report technical advances to UNDP CO and the MoE; increase field activities and strictly attain project calendar to the forest one.

1. Introduction

1.1 Purpose

The evaluation is intended to assess the applicability of the original activities, strategies and assumptions and to evaluate the modifications adopted by the Safeguarding and Restoring Lebanon's Woodland Resources (SRLWR) Project, identified by GEF with the Project ID N° 3028 and by UNDP with the ID N° 3371. It also provides an opportunity to assess early signs of success or failure and prompt necessary adjustments and the basis for learning and accountability for the SRLWR Project. It will also draw conclusions and make recommendations for way forward to ensure national and local ownership and effectiveness in achievement of results.

1.2 Methodology

This is a mid-term evaluation (Annex 1) executed according to the Evaluation Policy of the United Nation Development Program (UNDP, 2011) and the directives for the assessment of Global Environmental Fund (GEF) financed projects (UNDP/GEF, 2011). The approach is to assess project results against project outputs, in line with Result-Based Management (RBM) approach.

Relevance, efficiency and effectiveness are the evaluation criteria that have been analysed together with stakeholder involvement[1]. It has been considered premature to evaluate the impact, sustainability of the Project. Conclusions and recommendations have been developed following the principles of adaptive management of projects related to natural resources.

The evaluation was carried out as a combined approach of desk review, interviews with stakeholders, field visits, information analysis and elaboration of conclusions and recommendations.

For the preparation of the mission the following desk review activities were carried out:

- document revision;
- identification of main stakeholders and preparation of the agenda;
- drafting of key questions;

The implementation activities included:

- preparation of a list of main stakeholders
- interviews with main stakeholders and field's visits;
- revision of information collected;
- triangulation of the information collected with existing documents and analysis of the LF and amendments;
- identification of conclusions and recommendations;
- research of technical specifications and methodological approaches;
- redaction of the draft-report;
- reception of comments by UNDP, project's staff and the Department of Natural Resources Protection (DNRP) at Ministry of Environment (MoE);
- presentation of the final report.

The evaluation manager of this mission is Jihan Seoud, Programme Analyst/Officer in charge of the Energy & Environment Programme at UNDP Lebanon, the evaluation International Consultant (IC) is Raffaella Sardi, an expert in reforestation with previous experiences in Lebanon and the monitoring and evaluation (M&E) of environmental projects.

1 Annex 4 is a glossary describing main concepts adopted for this evaluation, together with specific technical words.

In all phases, the IC strictly follows the participatory approach of the exercise to grasp the opinions of the Project Management Unit (PMU) and stakeholders and promote ownership of the results and recommendations.

2. Development Context and Project Description

Lebanon has been home of important forests; long-term depletion of natural resources has led to environment deterioration and degradation. The forests of Lebanon cover an area of about 140.000 ha and are dominated by broadleaf species; the famous coniferous stands of cedar and other coniferous reduced to small relicts. The majority of the forests consist of stands of poor quality, often overexploited and threatened by illegal cutting for fuel wood gathering or charcoal production. Thus, contribution of the forest sector to the national economy is marginal. In some rural areas, however, wood and non-wood products present one of the rare income generation opportunities to sustain the livelihood of the local population.

Forest cover is characterised by a dynamic twofold process of changes: on one hand there is a continuing process of deforestation and degradation due to the pressure of population growth and urban sprawling, on the other hand the forest recuperates areas due to the abandonment of agricultural land.

Institutions related to sustainable land management (SLM) and forest related issues are:

- MoE, responsible for national lands and protected areas and, through its Department of Natural Resources Protection (DNRP), in charge of the National Reforestation Plan (NRP);
- Ministry of Agriculture (MoA), responsible for forestry activities, the maintenance of forest plantations, coordination of the National Action Plan to Combat Desertification (NAP) and forest law enforcement, with municipal guards and the police;
- Ministry of Interior and Municipalities, in charge of the management of municipal lands and coordination of the strategy for the management of forest fires (Civil Defence) with the Army (Ministry of Defence);
- Ministry of Energy and Water in charge of watershed management planning.

The NAP, the NRP and the recently forest fire management plan are the reference basis for the sector. These elements cannot replace an official policy statement, but they give orientations and a basis for the forest development aiming at the production of forest goods and services, the conservation of the environment and biodiversity, and the protection of soil and water.

In the last twenty years, many actors carried out reforestation campaigns throughout the country, mainly in public lands. While these efforts are significant from the perspective of awareness building, their impact on overall forest cover is almost negligible.

The SRLWR Project builds on the NRP and will complement the baseline by addressing gaps related to capacity development, inter-agency coordination, conceptual development, mainstreaming of SLM, and development of sustainable financial mechanisms for implementation of SLM.

The expected outcome of the SRLWR Project is to upscale successful practices and promote innovative solutions for reforestation and forest restoration activities. The Project aims at triggering large-scale reforestation measures or other methods to improve forest cover.

The Project is expected to build national capacities to provide the technical skills for introducing innovative approaches. The training to State officers is going to ameliorate their managerial and technical skills, enhancing the understanding of ecosystems and landscape restoration principles (including restoration of services and functions), in line with the objectives of the GEF Land Degradation Focal Area (LD FA). At institutional level, one of the most relevant out-put is

the definition and set-up of a new institutional or organisational framework so to overpass the constraints due to the high fragmentation of functions between different governmental bodies.

The Project is also designed to support the Private sector as service providers in the field of reforestation and (SLM).

In parallel to these actions, the Project will support reforestation activities on a pilot scale, to develop and test innovative methods and processes for ecosystem restoration. The development and application of participatory approaches, which are still quite new in Lebanon, are at the core of these efforts. Public involvement and awareness raising are principles of GEF-funded projects to enhance country's ownership, address the social and economic needs of affected people, and make use of skills, experiences, and knowledge, in particular, of non-governmental organisations (NGOs), communities, the private sector and landowners to promote reforestation and forest restoration and management in private lands[2]. Although there is a strong commitment of the Government of Lebanon (GoL) to apply participatory approaches to combat land degradation (see e.g. NAP) experiences are still limited, and skills and methods have to be further developed and adapted to local needs, perceptions and traditions.

3. Findings

3.1 Project Formulation

Analysis of Logical Framework

In its structure the logical framework (LF) is consequential: one outcome and three main outputs exist, strictly related between them and tackling the technical, social and institutional barriers to SLM.

The expected outcome is the removal of those barriers that are hindering the effective implementation of SLM and reforestation activities through the implementation of pilot actions, based on a participatory approach, for the scale-up of reforestation activities.

The first output focuses in creating a coherent legal and institutional framework, it facilitates coordination between actors and it identifies incentive and legal measures to promote forestry activities at public and private level. Its action is mainly at national level, with the involvement of policy-makers, public institutions and strengthening of the technical and managerial capacities of State officers.

The second output is designed to insure the implementation of new techniques based firstly in the involvement of direct beneficiaries - through the implementation of a participatory approach - and then in the identification of new techniques to insure the implementation of effective SLM. Its action is mainly at the local level for the involvement of forest users, local governments and those institutions that are acting in the field.

The third output is designed to link the two project levels (national and local), promoting communication, knowledge sharing and awareness raising for decision-makers, stakeholders and a vast public.

Finally, in the budget, a forth line is related to the management of Project's activities.

Relevance

The outcome and outputs of the Project appear to be still relevant at national and local level.

2 Following data of the Forest Resources Assessment (FRA, 2010) Private lands represent 60% , State 27% and Municipality 10% of forest cover (other 2% are communal and unknown properties), the first one mostly covered by broadleaves forests with low productivity and highly susceptible to be converted to other land uses.

During the last five years, reforestation activities in the behalf of the MoE, suffered from a halt, but the GoL is still engaged in its action: an allocation of LBP 5 billion (about US$ 3,3M) has been recently renewed for the implementation of Phase III of the National Reforestation Plan (NRP).

In its work-program of September 2011, the Ministry of Environment (MoE) identified two working priorities strictly related to the forest sector: "Activation of the national strategy for the management of forest fires" and "Follow up the implementation of the national plan for reforestation and combating desertification" (Box 1).

The MoE work program identifies SRLWR Project Output 2 as part of its agenda, showing the need to promote a better knowledge of all reforestation phases for achieving successful results. Land cover rehabilitation activities are even more pertinent, considering the need to recover the forests affected by intense fires of years 2007 and 2008. A new relevance it's acquired by the existing awareness about water scarcity and the need to promote an integrated approach of water resources management.

Reforestation appears also important at local level: municipalities, NGOs and grass-root organizations are carrying out reforestation activities. Fund-raising is with the private sector or through bilateral and multilateral cooperation[3].

Box 1 MoE goal and activities related to the National Reforestation Plan (from The Work Program of the Ministry of Environment at the Government of "All to Nation...All to Work" - 2011-2013).

Goal: Follow up the implementation of the National Plan for Reforestation and combating desertification.

Short-term Initiatives:

- Complete the implementation of the national reforestation plan (receive sites and study new reforestation requests)
- Follow-up the experiments on the new techniques of reforestation
- Coordinate with the concerned authorities to issue a unified map of sites under reforestation and those requiring support
- Support the national campaign to increase the green cover

Medium-term Initiatives:

- Adopt new technologies in light of the local experiments
- Mobilize the resources needed for the reforestation of additional sites as needed

The Project is coherent with the new United Nation Development Assistance Framework (UNDAF) program: environmental sustainability is one of the UNDP key Millennium Development Goals. In this area, priorities are the support and capacity building of MoE in policy making and to MoA in SLM and combating desertification.

Assumptions and risks

Most of the risks confronting the Project have been evaluated, and risk mitigation measures have been internalized into the design of the Project, also thanks to a broad formulation of outputs and activities that allows adaptation management.

Unfortunately, the following elements have been undervalued or not included:

- the abrupt interruption of field reforestation activities during about 5 years, with a decrease of staffing of the already reduced reforestation team at the DNRP;
- a diminished interest about the revision of the institutional and legal framework by environmentalist lobbyists and an overestimation of the potential political influence of the Project;

3 From 2006, the GEF small grants program has been financing various small reforestation or forest-related projects with CBOs, NGOs and Municipalities. The 19 GEF small grants represent 47% of financed projects and are equivalent to 42% of GEF small grants portfolio in Lebanon (for more details please also refers to Annex 5).

- the national understanding and practical experience concerning SLM, reforestation and landscape restoration activities are still in an early stages;
- some positive experiences that UNDP have been carrying out with local communities[4] haven't been sufficient to promote a more participative/bottom-up approach in the planning of Project and MoE activities.

3.2 Project Implementation

The principal implementation phases of the Project are briefly described in Figure 1, where they are related to main events at national and counterpart level.

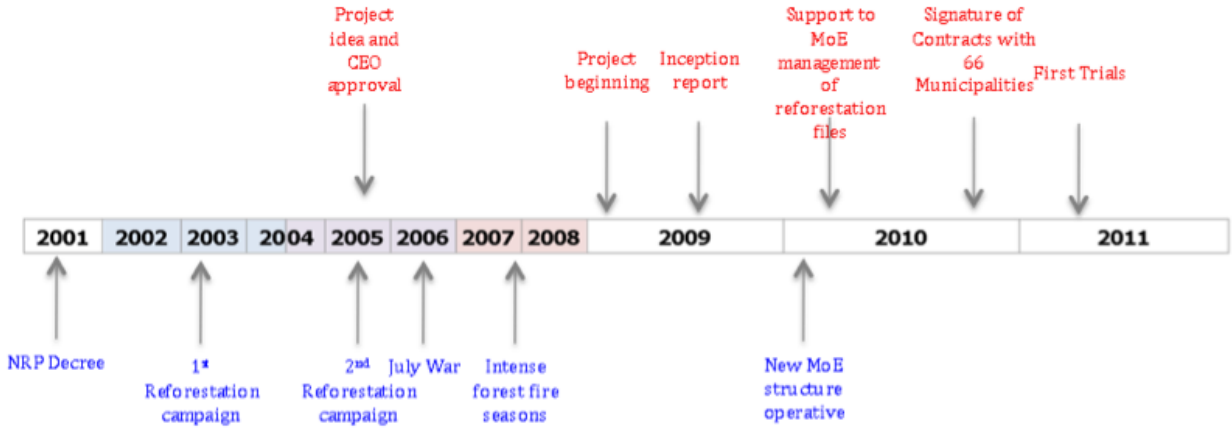

Fig. 2 Milestones and deliverables and main external/internal events related to the Project (National/MoE events in blue, lower line; Project's events in red, upper line).

The Project performed various activities that can be subdivided in four main groups, based on their target and stakeholders involved.

Activities in direct support of the MoE, and the III phase of NRP, included:

- promotion of a system of direct contracts with Municipalities for the implementation of Phase III of the NRP;
- management of the applications, including their reception, the preparation of a new format, selection criteria and following phases of signature;
- organization of two training sessions for the Municipalities selected for the implementation of the III phase of the NRP, coordinated with the support of Hanns Seidel Foundation;
- follow-up of activities related to the Lebanon Recovery Fund (LRF) implemented by the Food and Agriculture Organization (FAO) and the Association for Forests, Development and Conservation (AFDC) in coordination with MoE;
- coordination of trials' activities for carrying airplane seeding operations in 12 sites and of direct seeding operations in an area (Box 2).

Activities related to the identification of new reforestation techniques were:

- identification of possible alternative to watering of forest's seedlings, as key element for increasing survival rates and decrease reforestation costs;
- preparation of investigation trials and their implementation and follow-up in three field sites in West Bekaa (Fig. 4);

4 Conservation & Sustainable Use of Dryland Agrobiodiversity in the Near East (LEB/97/G34), implemented in collaboration with the Lebanese Agricultural Research Institute and based in rural communities of the Bekaa, between them Aarsal, Nabha y Nabha-Kailile.

- preparation of a new proposition of investigation for season 2011/2012, including tests for seedlings of different ages and direct seeding.

Activities for the improvement of seedling production at nursery level were:

- coordination with an associated United States Forest Service (USFS) nursery expert of three training activities for four local nurseries (July 2010, February and May 2011);
- training trips to a forest nursery (California) in May 2010 and July 2011.

Specific project management activities included:

- establishment of a Project Management Unit (PMU), composed by a Project Manger, an Assistant and a Field Assistance;
- submission and approval of the Inception Report (IR);
- transfer of a vehicle for Project use;
- agreement for coordination activities with the DRNP at MoE;

Box 2 Airplane seeding operations in 12 sites (Source: Project IR)

Mohafaza	Locality	Area (Ha)	Quantity (kg)	Kind(s) of seeds disbursed
Mount Lebanon	Kfifan	10	100	Oak & carob
	Reshmaya	30	250	Pine & carob
	Karem Sadde	10	250	Pine
	El-Kbayet	10	250	Pine
	Andeet	20	500	Pine
	El-Debbiyye	10	250	Pine
	Deir El-Ahmar	10	250	Pine
	Jrabta	10	250	Pine
	Jran	6	150	Pine
Bekaa	El-Qaraoun	30	600	Pine
	Bakkifa	10	200	Pine
	Dahr El-Ahmar	40	200	Pine
	Total area	**196**		

Logical Framework changes

The IR introduced changes at the level of outputs (reformulation and introduction) and of activities (reformulation, suppression, introduction and definition of sub-activities).

Changes are obviously justified and needed by the events occurred from Project formulation until its implementation. Unfortunately, a misunderstanding of the "cascade" approach of the LF occurred: the terms outcome, outputs and activities were inappropriately used[5]. Their distinction is not a mere linguistic sophism: changes in the different levels of intervention strongly affected the intervention logic of the Project, its assumptions and risks and M&E activities.

Thus, the introduced changes are affecting the innovative focus of the Project of tackling the institutional and social barriers of SLM, rather than focusing merely on the technical ones. Other elements have been slightly considered, like: i) the suspension of the NRP during a long period; ii) the occurrence of intense forest fires in 2007 and 2008; iii) the role of forest activities in livelihoods for rural communities and iv) the emergent awareness about water scarcity and climate change effects.

5 For more details see also IR page 6 and forwards

Changes appear in the Output 1, in terms of involvement of decision-makers in the reforestation project and in the Output 2 and 3, and affect the participatory and public involvement approach for a greater participation of the different stakeholders.

The exclusion of activity 1.3 (focused in increasing knowledge and abilities of the personnel and decision-makers involved in SLM) let the Project more vulnerable to the political will of decision-makers.

The creation of steering (multi-stakeholder) committee is positively suggested in place of a named Forest Agency, due to the decreased interest of environmental groups in a new institutional framework. This effort would be in line with the support of the German Cooperation to the MoA.

The identification of new funds (activity 1.5) is critical either in the short and long term: in the short term it can allow the Project to carry out activities in those areas where national funding or Project budget can't be easily invested (eg: promotion of reforestation and agroforestry activities in private lands, support activities to the private sector, …) and in the long term, it is fundamental for the scale-up of the NRP. It is clear that CDM are not suited for Lebanon, but the opportunity to introduce the Payment for Environmental Services concept at national level is a great opportunity; other mechanisms for promoting adaptation and mitigation to climate change are also of interest, including the theme of restoration of forest biomes.

Activity 3.1 (project understood by the government as national cross-sectoral effort) is crucial to smooth asperity and diversity between the different ministries involved. The fragmentation of functions between the different governmental bodies is one of the elements that is hampering the success of SLM and reforestation activities either at local and national scale.

In the new LF, a forth output has been introduced, related either to project management (setting-up of the PMU) and activities in support of the management of NRP by the MoE:

- identification of MoE funded reforestation sites;
- support in the management of the information related to the Phase III of the NRP;
- workshops for Municipalities.

Stakeholders' involvement and partnership agreements

In its initial phases, the Project has promoted, as part of its supporting activities to the MoE, a new implementing modality for contracting reforestation at local level. The new approach consisted of directly contracting with Municipalities, so to insure a greater involvement of beneficiaries (the Municipalities and their inhabitants) in the design, implementation, and evaluation of the reforestation process and insure economical incentives at municipal level. Due to the high number of Municipalities concerned, and the small size of the reforestation plots, a direct involvement of Municipalities in a technical support system – that could insure the application of a new strategic vision of reforestation or landscape restoration techniques – didn't occur[6].

The table 1 identifies the key stakeholders of the SLM sector in Lebanon, with a special attention to reforestation and forest-related activities, and the kind of relationship and coordination with the Project.

Table 1 Key stakeholders of the SRLWR Project.

6 Technical support system to local authorities in the management of their lands usually includes: Support in the preparation of a reforestation plan, with the identification of the site, the preparation of forest fire prevention and soil and water conservation measures, the selection of the most appropriate species, the support in the choice of health seedlings of well know origin, etc…

Institution	Reference Person	Kind of relationship
UNDP mid-term evaluation manager	Jihan Seoud, Energy & Environment Programme UNDP	Internal.
Reforestation Project Staff	Garo Haroutunian, Project Manager; Krystel Rizk, Project Assistant; Richard Riachy, Project Field Assistant.	Internal.
MoE NRP staff	Adel Yacoub, Acting Head, Department of Natural Resources Protection	Internal, agreement signed. Subdivision of roles unclear
Other MoE programs or projects related	N.A.	Not created.
MoA RDNRD staff	N.A.	Not created.
MoA UNCCD/NAP	N.A.	Not created.
CDR or Land Planning Unit	N.A.	Not created.
Water or River Authorities	N.A.	Not created.
LARI	N.A.	Not created.
Civil Defence	N.A.	Not created.
Universities	University of Saint Joseph American University of Beirut	External, agreements not yet identified or ratified.
Municipalities with trials	Kefraya, Aytanit, Lala (04/2011) and Arz, Bkassine (2011-2012)	External, direct contact with the Mayor and a Municipal worker.
Other Municipalities involved	47 Municipalities benefited by a training system for improving the comprehension of administrative procedures	External, occasional contacts with the Mayor and another member of the Municipal Council.
Other UNDP/GEF project coordination	Flood Management, LRF	External, exchange of experiences, no agreements identified or signed.
UNDP/GEF small grants program		Not created
Other reforestation/forest and SLM projects	LRF-14 Forest Fires Management - Forest Fires Prevention, Forest Fires Fighting (Control) and Damaged Forests Assessment and Rehabilitation, MoE/FAO/AFDC; Lebanon Reforestation Initiative, USAID	External, coordination for specific activities. No agreements identified or signed.
NGOs / CBOs involved	AFDC, AUB-IBSAR, Friends of the Cedars, Saint Joseph-Jouzour Loubnan, Hanns Seidel	External, coordination for specific activities. No agreements identified or signed.
Private and NGOs nurseries	AFDC, AUB-IBSAR, Friends of the Cedars and Kouroum	External, coordination for specific activities. No agreements signed.

Stronger relationships were established with internal Project's stakeholders: UNDP CO and MoE. Coordination occurred, and in many cases is still on going, with other UNDP/GEF projects (mainly the Project Flood Risk Management & Water Harvesting in Baalbek-Hermel), bilateral cooperation initiatives (Forest Fires and Lebanon Reforestation Initiative) and the research units of two private Universities: Saint Joseph and the American University of Beirut (AUB).

The small size of the Country helps establishing personal contacts with all relevant actors, an initial phase for the identification of actors and local initiatives was planned to promote mapping of actors, based on a preliminary definition of stakeholders and their characterization (Project document, Annex 8). The actions carried out for the involvement of the different stakeholders have been punctual and referred to a single part of the reforestation chain (eg.: 3 NGOs and 1 private nursery benefited from training for improving forest seedling's production; Municipalities took part to trainings for the management of MoE procedures, etc.).

Functional partnership agreements with interface or external stakeholders haven't been identified or signed (with the exception of the MoE). A stronger relationship with the different actors of the sector is needed to insure impact and sustainability of the activities, mainly in terms of country ownership.

Monitoring system

The Project timely reported to GEF, but in the description of the achievements (in execution, planned and results achieved) a reference to a system of M&E is missing: although changes have been introduced in the LF after the approval of the IR, indicators haven't been amended or improved and the use of preliminary indicators (Annex 8) appears limited.

Strongly related to the M&E system are the communication channels for transparency of Project management and the participation of the different achievements to internal and external stakeholders. The communication channels with the MoE and the UNDP-CO even if fluent, are mostly informal. Internal technical and financial reports – describing and analysing the activities executed and the results achieved – are missing.

The initial communication strategy with the public was good: notes about the goals of the Project are available either in specialized web sites for development and forestry activities and in the Lebanese press. A similar effort is missing in terms of awareness raising for the promotion of reforestation forest restoration activities and their role for ecosystems functions and livelihoods.

An awareness campaign about forest, forest restoration, protection and reforestation activities, also in relationship with the International Year of the Forests, was not carried out.

Timing of Project Implementation

The timely delivery is an important element of efficiency, as project development and project approval are always time-consuming processes (Kasparek, 2007). Time elapsed between project idea and implementation is crucial, as it affects relevance and strongly decrease the opportunities created during Project formulation.

The preparation of the SLRWR Project started in January 2005 and the Proposal was submitted in October of the same year. Approval occurred by the end of 2008, almost 4 years after the onset of drafting the Proposal. This long period necessary for getting GEF projects approved are well-known and beyond the responsibilities of UNDP-CO. Other factor responsible for the relative late onset of the Project, is the delay of signature by the executing entity.

Financial management

A strict relationship between Project's effectiveness and its financial management exists. This statement is confirmed by the budget fluxes:

- only the 48% of the total planned budget could be executed (equivalent to the 32% of the total budget);
- executing capacities were decreasing: in 2009 were equivalent to about the 70% of the planned budget, in 2010 were less then the 50% and in 2011 are expected to be about the 60% of the planned budget;
- by the end of September 2011, the allocated budget for individual contractual services (budget line 71400) increased from 41% of the total planned budget to 68% of the total executed budget;
- the voices that covered the higher percentage of expenses were: contractual services (budget line 72100), covering the expenses for two separate operations of air seeding of a mixture of forest seeds over burnt areas of Lebanon (Box 2), a hand seeding in the East

Bekaa and the purchase of materials and man-power for the realization of three trials in West Bekaa (Fig. 4).

From the analysis of the expenditure's fluxes, it appears that the Project couldn't take advantage of the opportunities offered by the different budget lines, in terms of local and international technical support, and the implementation of practical activities, as showed in Table 2.

In the budget presented in the Project doc, a larger amount of resources was designated to consultancies due to the need to better introduce the strategic approaches of SLM following the GEF policies. In Lebanon, a great comprehension of the biodiversity approach exists, meanwhile there is the need for increasing the appropriation of the LD theme and its possible solutions and to facilitate a comprehensive training system, including practical experiences.

Table 2 Revised budget and cumulated expenses by September 2011

Budget Line	Total Planned Budget revised 2009 in US$	Total disbursed budget September 2011 in US$	% Disbursed of Total Planned Budget
71200 International Consultants	59.000	0	0%
71300 Local Consultants	115.900	10.502	3%
71400 Contractual Services - Individuals	396.907	213.222	68%
71500 UN Volunteers	83.371	25.785	8%
71600 Travel	75.596	4.564	1%
72100 Contractual Services - Companies	78.000	32.800	10%
72200 Equipment and Furniture	1.398	494	0%
72300 Materials and Goods	65.000	8.086	3%
72400 Communication & Audio Visual Eq.pmt	6.100	823	0%
72500 Supplies	12.078	2.280	1%
72800 Information Technology Equipment	4.000	83	0%
73400 Rental & Maintenance of other Eq.pmt	0	3.540	1%
74100 Professional Services	2.500	0	0%
74200 Audio Visual & Print Production Cost	29.850	0	0%
74300 SIOC	0	502	0%
74500 Miscellaneous Expenses	50.300	11.671	4%
Total	**980.000**	**314.351**	**100%**

Co-financing

Two major co-financiers were identified during the Project formulation phase: the GoL, through its budget for the NRP, and EuropeAid through the Management Support Consultant Investment Planning Program (MSC-IPP) Environment Project (table 3).

At the date, the MoE signed contracts with about 60 Municipalities for the reforestation of small plots in Municipal lands. The financing covered the 60% of the expected costs, that are calculated for living tree after a two-year period from the beginning of plantation. Following the costs applied by MoE, till date, co-financing can be estimated of about US$ 800 000.

The Project didn't take advantage of the co-financing of the MSC-IPP Project. Few efforts had been done to recuperate and use the technical materials produced[7].

7 Co-financing from the MSC-IPP was mentioned in §103, 113, 177 and Annex 11 of the Project doc. Copies of the documents produced in support of the SRLWR Project were available with: the EU Delegation, the previous MoE reforestation team, the MoE web-manager, the MSC-IPP Team Leader, Dr. W. Hager, resident in the country at the launching of the Project, Mr. S. Simonet in charge of the formulation and approval of the SRLWR project plus other national experts involved with the Project.

Table 3: Details of project financing (all amounts converted to US$).

Project outcomes	GEF in US$	Co-financing EU in US$	Co-financing Government (min.) in US$	Total in US$
1. An appropriate management framework and management capacities for the rehabilitation of forest areas.	330.000	420.000	60.000	810.000
2. A set of innovative technologies and instruments for the rehabilitation of forests and woodlands, and their subsequent sustainable management, has been designed and validated in pilot areas.	380.000	-	700.000	1.080.000
3. Learning, evaluation, and adaptive management	270.000	30.000	65.000	365.000
Total	**980.000**	**450,000**	**825.000**	**2.255.000**

A co-financing of US$ 20 000 was obtained from the Hanns Seidel Foundation, for the realization of administrative training activities with the Municipalities as follow-up for the signature of the reforestation's contracts.

3.3 Project Results

Findings[8]
Output 1

Undoubtedly, the most important Project's achievement is represented by the momentum created by its launching: the Project's signature engaged the GoL to mobilize the national funds for the implementation of the III Phase of the NRP, an effort that was almost suspended during its second phase in 2006.

The second achievement is represented by the direct involvement of Municipalities as beneficiaries and implementers of the reforestation activities, promoting a more participative approach with a greater commitment of local governments' authorities (for more details see also output 4). The accomplishment is thus related to the administrative and legal measures that have been promoted to insure a new institutional framework or institutional arrangements.

No results have been achieved in terms of the involvement of the different stakeholders and their participation in the revision of the institutional framework or the amendment of the forest law.

Output 2

Since Green Plan activities in the '60, no trials or tests about reforestation were carried out. Research for the forest sector is also a neglected theme of forest development projects worldwide. Thus, the innovative value of the trials is great.

Some preliminary results can be deducted from the trials, in general terms, in function of seedlings' ages and cultural treatments applied.

About 50% is the survival rate of seedlings in the field tests (Fig. 3); this low result is due to a series of factors, between them:

8 The mission is aware that differences can exist between what it's described and evaluated in the PIR and the present mid-term evaluation report. The PIR describes activities (and consequent outputs) that, in some cases have been planned, but not yet been executed. In other cases they have been executed in relationship with the III phase of the NRP of the MoE, but achievements are still unclear due to poor communication exchange and lack of field visits (e.g. number and names of Municipalities involved, number of ha already planted and eventually the survival rates).

- wrong planting window;
- seedling's quality;

A significative variance exists between the survival rates achieved in Kefraya trial site with the others two. This diversity can be related to the distinct soil preparation technique employed before planting of seedlings (mechanized work instead of hand-made holes) that should have influenced soil water retention capacities, but also to the need to carefully evaluate each site and the most suitable species[9].

Box 3 Characterisation of the trials

400 seedlings were planted in the 3 trial sites of the West Bekaa: Aytanit, Kefraya and Lala, as showed in the map in Fig. 4. Out-planting date was April 2011, and 9 different tests were considered, based on different seedlings' ages (8, 10 and 12-month olds) and cultural treatments (no-irrigation, irrigation, rechargeable and no-rechargeable water).

Site's selection has been based on availability of Municipal lands, accessibility and proximity between sites. Their visibility is hindered by the presence of a garbage disposal (Kefraya), increasing also the risk of incidental fires and by slope (Aytanit).

Despite their proximity, the sites present specific differences, in terms of geology, pedology, soil texture, slope, exposition and number of vegetative days, that influenced the results as showed in Fig. 3.

For the trials, the trees have been planted as per reforestation distances and the different tests distributed along the lines, marked with different colours. The field officer in charge of the reforestation plots (with the support of municipal workers) and of data collection. Annex 8 presents some suggestions for improving the procedures for selection of the information to be analysed and its' analysis and share.

Seedling with the non-rechargeable solid water system

Seedling with the no irrigation

Concerning seedling's ages, the following conclusions can be deducted:

- for the 8-month-old seedlings, mortality is up to 90%, showing clearly the low quality of the root system of this planting stock;
- the difference between 10 and 12 month old is not very significative, better achievement are obtained with 12 month old in Aytanit and Lala trials sites, in Kefraya the 10-month old seedlings are more performant.

About the cultural treatments adopted, the most significative results are:

- in Kefraya a survival rate of 90% has been achieved with 10-month old seedlings and no other cultural treatments than weed's control;

9 For more details please refer to P. del Lungo Reforestation Project and Annex 9

- there is not a very significative difference between the non-rechargeable water and the traditional irrigation systems (average of survival for the 3 sites is of 76% and 72% respectively);
- the growth rates of seedlings between the two systems need to be compared;
- a significative difference exists between the no-rechargeable and the rechargeable system (average of survival for the 3 sites is of 76% and 62% respectively);
- the no-irrigation treatments present a high variability: survival rates fluctuate from 4% to 90%; showing the need to consider other two important variables: seed source and quality of the planting stock.

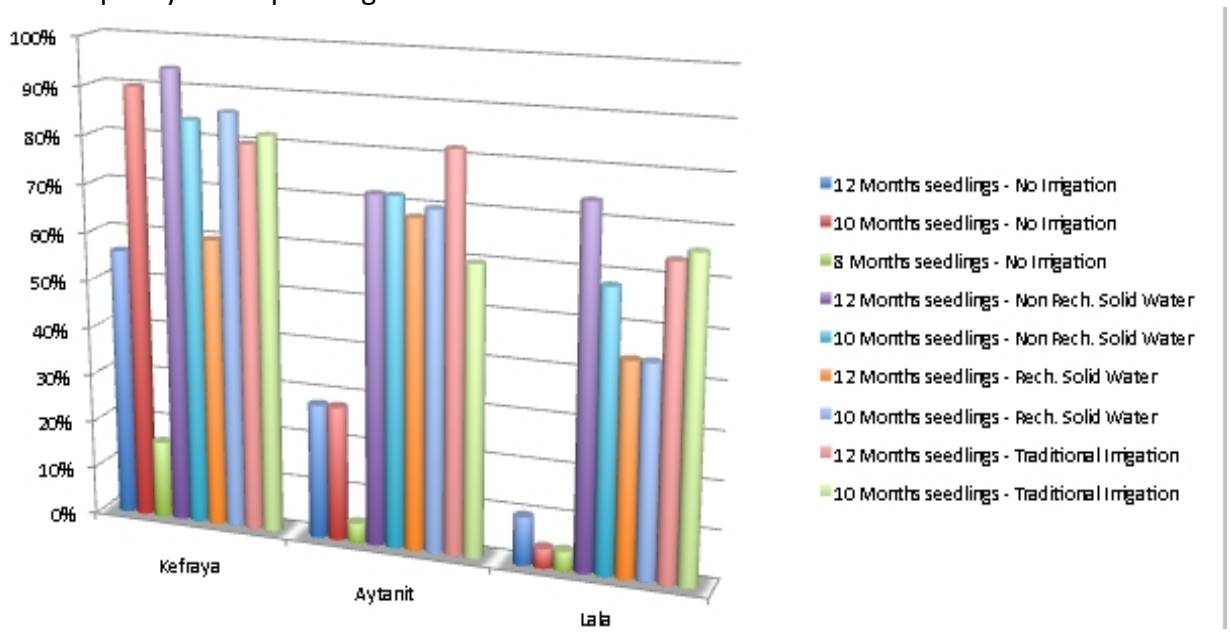

Fig. 3 Survival percentage by site and treatment until 15 October 2011 (Source: SRLWR Project)

The quality of forest seedlings is a major issue for the sector: planting stock quality is poor and cost are high. The incentives for improving nursery techniques are poor: an erratic demand exists and the request focuses on a limited number of species, with preference for 2 or 3-year old seedlings, but with no other specifications about plant's morphology. The Project – with an initial coordination with the USFS and the Lebanon Reforestation Initiative Project – has been supporting the training of experts of 4 forest nurseries by an international expert about the production of young seedlings of resinous species with the containerized technique.

The nurseries involved in the trainings are key-stakeholders of the sector: AFDC and the Friends of Cedars are 2 NGO-run nurseries: the first one specialized in *Pinus pinea,* but recently promoting other native species; the second one specialized with *Cedrus Libani;* Nature Conservation Centre for Sustainable Futures (IBSAR) is a NGO related to the AUB research activities; the forth one is a private nursery with experience as contractor for the NRP.

An extensive use of this technique can be hindered by a series of factors that should be faced in the next future: the cost for importing the containers and other in-puts, as fertilizer or substrate and the use of high technology and the need to adjust it to local situations.
The Project is evaluating the opportunity to produce a mould for the production of styrofoam reusable containers. It's suggested to consider the benefit of the costs of this operation, estimating the existing and potential demand for containerized plants, the opportunity to use agricultural substitutes and an analysis of the products and costs of importing the different containers[10].

10 For more details, please refer to Annex 10 and to the publication of Landis (2010) where advantages and disadvantages of the different containers are presented. It's also important to mention that a web research will

Map 4282 United Nations
January 2010

Department of Field Support
Cartographic Section

Reforestation Project: Indicative location of the reforestation plots.
In red and marked with °: implemented in April 2011
In blue and marked with *: to be implemented Autumn-Winter 2011

Fig. 4 Indicative localization of the forest trials implemented and planned by the SRLWR Project (Source: UN maps, .adapted by the IC).

permit to identify main producers in Europe and the USA and evaluate the best models. The Firms also are very willing to collaborate with technical information and commercial material.

Results in terms of a more participative approach of reforestation activities – including the involvement of direct users of the forests or forestlands – and of economic incentives for local communities couldn't be achieved.

Output 3

The third output is related to the identification of forest experiences at national and local level and the creation of a monitoring system for forest cover. An activity of awareness about reforestation and SLM issues is also included.

Communication of Project's goals in the press has been successful, but the other activities have been partially executed and then no results can be quantified.

Output 4

Most of the activities carried out by the Project are listed in this Output and are designated to administratively and technically support the MoE and the DNRP.

The support of the Project permitted to identify the most opportune administrative mechanisms that allowed the direct financing to Municipalities. Contracts have been signed with about 60 Municipalities[11], where reforestation efforts are implemented in a small scale (reforestation plots are of about 3-4 ha for an estimated area of about 200 ha).

Clearly, the number of Municipalities involved, as well as the inconspicuous size of the reforestation plots, didn't permit to promote a participatory approach for the application of SLM practices, promoting the appropriation of land planning principles by local governments and the correct identification of benefits and services for the different reforestation plots, as identified by the GEF principles and presented in Box 3.

Box 3 Comparison between the ecosystem services in forest landscapes [*modified from Millennium Ecosystem services (2005)* and *Global Environment Outlook (2007)*] and main functions and services provided by the Reforestation plots executed with the MoE (in the boxes and with blue text).

Provisioning	Regulating	Supporting	Cultural
Food & Nutrients Fuel Animal Feed Genetic Resources	Erosion Control Climate regulation Natural hazard regulation (droughts, floods, fire) Water flows and quality	Soil Formation Soil protection Nutrient cycling Water cycling Habitat for biodiversity	Traditional land management practices Sacred groves as sources of water

11 The decision of the MoE was to promote a greater participation of Municipalities. In line with previous two reforestation campaigns, the MoE decided to involve the higher number of Municipalities as possible, in order

4. Conclusions & Recommendations

Conclusions

The themes focused by the Project are complex. They tackle the institutional, social and technical aspects of SLM in forest landscape. They encourage actions at the local and the national level, promoting the formulation of policies and the amendment of the forest law, based on lessons learnt from the field. They also support a cross-sectoral vision – with emphasis on public involvement – and an extensive use of participatory techniques with communities and institutions.

The pilot valence of the SRLWR Project resides mainly on its innovative methodological approach, plus the technical one for testing new methods for the upscale of reforestation and restoration of woodland resources activities.

In its initial phases, the PMU and the MoE had difficulties to delineate the strategic vision based on the principles promoted by the GEF LD-FA.

The PMU is almost new to the SLM, forest and reforestation themes, but didn't take advantage of the support of international or national consultancies for the:

- identification of the most suitable strategic approach of the Project;
- definition of the mechanisms for the implementation of the Stakeholder Involvement Plan (Annex 8 of the Project Doc);
- preparation of the IR, with the most appropriate changes in function of the main events occurred at Country level;
- strengthening of the operative functions at field level, considering also MoE constraints.

In the initial phases, the availability of the MSC-IPP technical documents could have been useful to better delineate the themes to be focused, and the possible way to implement them, considering their additional value to the GEF financial planning and their specificity in relationship with the NRP and the Lebanese context.

The changes realized in the output 1 and 3 are hindering the abilities of the Project of creating long term public involvement and a more participative approach of activities, so to insure country ownership.

The main amendments operated in the IR are reflected in the output 4. Most of the new formulated activities have been identified with the aim of supporting the MoE in the initial management of the III phase of the NRP. Thus, the identified activities have been functional to the short-term requirements of the NRP.

Following these main issues, till date, Project's achievements are:

- engagement of the GoL to promote the III phase of the NRP;
- promotion of Municipalities' direct participation in reforestation activities;
- beginning of trials for testing the effectiveness of some cultural techniques to improve seedling's survival rates;
- training system to promote the use of good planting stock, based on the use of the containerized technology for forest seedlings.

Activities focus mainly at the administrative level with a relative engagement at field level, where the MoE's debilities are more evident.

The absence of a comprehensive stakeholder involvement plan has hindered the opportunities to interact with different actors at national and local level. The main existing contacts are now

with NGOs dedicated to the forest sector, two of them related to Universities. Links with the Public sector are weaker and concentrate more with the MoE and some Municipalities.

Project's activities have been mostly directed in support of the III phase of the NRP. Based on previous experiences and similar decision processes, the MoE engaged in the implementation and follow-up of about 60 small reforestation sites (between 3-4 ha) in all the Country. The expected output of the III phase of the NRP is unclear: the influence of all these small efforts on the livelihoods of rural communities or in the regulation of forest services is undermined by their fragmentation. The reduced size, and the presence of a high number of actors (municipalities and the services contracted locally for purchase of seedlings, soil preparation and maintenance), hinder the economy of scale and increase reforestation costs due to difficulty of offering a technical assistance to assure good seedlings (at a lower cost) and cut-off expensive measures as the extensive use of watering[12].

The decisional and monitoring system – as well as the communication of Project's results – has been mostly carried out in an informal way. These elements, together with the mixing of the "cascade" system of the LF and a M&E system poorly applied, has caused an insufficient track and sharing of Project's achievements.

The Project has promoted the presentation of the information required by the MoE for its III NRP on the MoE website. With this exception, there has been a reduced use of technological support media (between them GIS, IT, videos, ...) as decisional tools or in support of the MoE for managing technical information or reduce work's charge.

The efficiency and effectiveness of the Project are hindered by the ability to implement the activities related to output 1 to 3. This is confirmed by the relationship existing between the invested and the planned budget (less than the 50%), and that one existing between the resources invested in salaries versus the resources invested in other activities (68%).

Recommendations
Based on the above conclusions, recommendations have been elaborated for each out-put. In order to simplify the Project approach, some activities have been privileged, considering either their importance for the general outcome and the results achieved until date.

Output 1
In order to achieve an enabling environment and capacity for SLM, coordination and participation of sector and cross-sectoral actors are a must.

The policies proposed by GEF are still new for the Country; despite the good will, the Project is missing of a strategic vision for their positioning in the MoE and with the other Institutions. For these reasons, it is suggested to look for the support of external experts that can help:

- support the PMU and the MoE in reinforcing the strategic vision of the Project;
- facilitate public involvement, participatory approaches and the smooth implementation of a forest multi-stakeholder committee, representative of the different actors at national and local level;
- planning and implementing training sessions for the different stakeholders.

It's highly recommended to promote any activity that will ensure the existence of communication, coordination and synergies of actions between the different stakeholders. In the work-plan, presented in the Project Implementation Report (PIR), the creation of a steering committee was envisaged. The suggestion is to promote a technical committee that can

12 For the maintenance of the reforestation plots, the Municipalities follow the schemes adopted for fruit trees farming.

enhance the activities already implemented by the different sector actors and support the Project in the achievement of its results. Considering the broad range of people and sectors impacted by forests, decision-making in forestry can no longer be the exclusive domain of governments and the privileged groups of people. For forest management to be successful in today's world, mechanisms must be established to ensure effective participation of diverse stakeholders in decision-making processes. The purpose of such multi-stakeholder processes is to balance the perspectives and priorities of all affected and interested individuals and groups, leading to forest management approaches that better serve the needs and priorities of all. Such processes also serve to foster wider support and a sense of ownership for the decisions that are taken, so that their implementation will be more effective. The Committee should not be only functional to the NRP, instead it should be working as a national platform for the coordination of efforts either in the public and private sector. An interesting analysis of possible mechanisms for the promotion of multi-stakeholders effective interaction and their value for the implementation of a comprehensive national forest plan are presented in an interesting FAO publication (see bibliography Gilmour, 2007). A long-term objective of the forest committee is to promote interest and propositions for a forest policy, comprehensive of reforestation and forest management activities.

The possible indicators for this result are the number of committee, the number of stakeholders (systematized per gender, age, affiliation, etc) and their representativeness of the different sectors and the number of agreements or activities carried-out.

Based on the positive results achieved in the training sessions about seedling's production, it's highly recommended to reintegrate the activity 1.3 and prepare a training system articulated in different modules, covering the complexity of SLM activities and strongly related to field experiences.

Indicators in this case are the number of courses, the number of themes, the number of participants (systematized per gender, age, affiliation, etc), the number and kind of teacher and number of practical activities in the fields or in laboratories.

Output 2

Reforestation trials are important for the definition of best techniques and benchmarks. The validity and functionality of the data collected (biological and economic) resides in the number of elements analysed, the number of trials carried-out and their duration (Annex 8 for more technical details). With the conclusion of the Project, isolated efforts can lead to a double fold effect: the lost of information or the duplication of experiences (that are hardly evaluated and compared in an effective way). To insure the sustainability of this innovative activity, thus it's highly recommended to implement the trials with a cooperative and participatory approach that can facilitate country-ownership.

Cooperation-research is an effective way to implement the research trials and to insure good dissemination and use of the recollected information, also after the end the Project. In line with the participatory principles, cooperation-research permits to join the interests of different sectors and can thus reinforce the links between the Project, the MoE and other stakeholders, as Universities, nurseries working with forest species, rural communities in areas where the forest sector can improve their livelihoods, private firms and NGOs.

Cooperation-research can begin with the Universities that are already coordinating with the Project (Saint Joseph, IBSAR), it's recommended to evaluate the opportunity to involve also the Public sector, either through its University and/or LARI. Detailed recommendations about reforestation trials are presented in Annex 8. The recommendations focuses on seedling's and

testing of planting stock quality. The number of variables related to direct seeding does this practice more susceptible to the risk of failure (see literature references).

It's very important to underline that cooperation-research is not volunteering, but a coordinated effort between institutions, that are regulated by agreements.

During the next months, activities related to the trials should be a high priority, so to insure a representative number of sites, for an increased quantity of species and considering a longer engagement for the trials, evaluating the opportunity of using laboratory techniques for the evaluation of root's growth.

Reforestation costs in Lebanon are usually expressed per plant, without considering the nature of the site to be reforested. The Project is planning to prepare cost's analysis for the different trials executed. The contracted local consultant is suggesting to introduce different soil and water conservation measures in the trials to be executed in Bcharre and Bkassine (see fig.). It's highly recommended to express values for area and not just only for plant, considering which are the elements that mostly influenced reforestation costs at each site and region.

The indicators of the successful implementation of this activity are identified in the number and kind of agreements signed, the number of plots executed, the years of replication and the cost-share for the preparation of sites and laboratory's analysis, survival rates, number of technical and scientific communications.

A key output is the realization of three pilot plots, with the direct participation of local communities, for the up-scaling of reforestation activities. From these experiences, it was expected to extrapolate lessons learned to be reflected in terms of law amendments and policies.

It's suggested to persecute this activity and identify at least one area where a series of landscape restoration activities can be carried-out in collaboration with other actors. For this reason, a list of CBOs implementing reforestation activities has been provided in Annex 5, as a starting point for the identification of key-stakeholders. Another opportunity of collaboration it's given by other UNDP projects, where a cooperative aptitude can create synergic results, mostly in terms of exchange of experience for the active participation of forest's and land's users or other potential beneficiaries of reforestation efforts, so to interact with new stakeholders other than NGO's and Municipalities. Technical coordination exists with the Project; it's suggested to strengthen relationships with those projects that are working directly with local inhabitants in rural or forest areas. An opportunity exists with the MAP Project. Reforestation is a long-term effort; association of forest trees with MAPs is an opportunity for integrating livelihoods with fighting to land degradation, enhancing biodiversity and promoting traditional knowledge[13].

The DNRP is in charge of the NRP and of the Quarries. Another opportunity is offered by the role of reforestation in the rehabilitation of quarries, showing the existing synergies between the two activities, and permitting to potentiate the reduced human resources present in the Department.

Activities should begin as soon as possible with the identification of communities and sites, so that will exist enough time to prepare:

- a detailed reforestation and forest restoration plan, defining responsibilities and cost-sharing between different actors;
- identify the most suited reforestation species, including seed provenance;

13 In a interview with Dr. Magda Bou Dagher Kharrat, she mentioned the scientific evidences of the role of shrubs and other species for protecting forest's seedlings in difficult climatic and edaphic conditions.

- request the production of seedlings following Project's specification;
- implement the needed soil and water conservation measures before the rainy season;
- implement the other silvicultural works identified, including the opportunity to introduce other multipurpose species for livelihoods.

It's strongly suggested to implement a large-scale pilot plot in the next winter (October or November 2012 until January 2013), so to insure the proper follow-up at least until the end of the Project (December 2013). The support of external consultants for the preparation of the reforestation project, the identification of seedling's specifications and other elements related to the participation of beneficiaries is highly recommended.

Other two GEF/UNDP Projects worked both on a national scale and on community level, where they were expected to implement pilot measures for testing innovative approaches. It will be interesting to better understand which are the mechanisms that can facilitate a direct relationship between GEF projects, their executing agency and local communities, so to extrapolate lessons learned for the SLRWR Project.

Output 3
The activities presented in this output can become functionals to the activities implemented in the behalf of the other outputs.

The Project is aiming in supporting the MoE through the identification and mapping of the forest plots financed with the III phase of the NRP, using the services of a GIS expert. It's recommended to use the services of the GIS expert for the preparation of the maps of the existing and future trials and in the preparation of the reforestation and forest restoration plan. Mapping is an important exercise for the identification of the site's characteristics.

The identified activities of follow-up of the MoE reforestation plots haven't began yet. The human resources in behalf of the DNRP are insufficient to carry-out this effort alone, the MoE, UNDP-CO and the Project should convene for identify the most suitable solution for the follow-up of so many and dispersed reforestation plots. The most important are those that haven't been implemented yet: the MoE and the Project can support in identify the best planting stock, the most suitable conservation measures and other elements that can insure positive results (see also points below).

The system of indicators need to be updated and used, so to better quantify the efforts done to achieve the outcome, suggestions have been presented above for the most salient activities.

The communication and awareness raising campaigns are functional to the outputs 1 and 2. The communication and dissemination tools become functional for the creation of the Steering committee, meanwhile the awareness campaign can be used to reach different stakeholders (from decision-makers to the rural inhabitants, passing throughout local authorities) and finally to describe the achievements of the Project.

Indicators in this case are the number of communication activities, number and kind of stakeholder reached and perception about the quality of the campaign.

Output 4 and adaptive project management
The support of the Project can represent a feasible answer to the impelling needs of the MoE and its limited capacities for the monitoring of the reforestation plots. An alternative to insure the satisfactory conclusion of the III phase of the NRP is the hiring of local temporal consultants for the monitoring of the implemented plots. *Conditio sine qua non,* it's the creation of a more transparent system of communication and the definition of the roles and responsibilities of

contracted external consultants in the behalf of a monitoring system that determines the payment of governmental funds to the Municipalities.

In terms of Project management, it's highly recommended to increase the number of activities implemented by the Project, mainly related to the output 1 and 2. The relationship between the office work, face to the field activities, is almost of 2:1. This relationship should be unversed, assuring a stronger presence of the Project in the field and with a stronger relationship with the different stakeholders, including local inhabitants.

It's also suggested that a seasonal planning system can be applied: a more careful attention on the forest calendar for the different activities to be implemented is needed, mostly considering that programming activities can require one year or more.

It's highly suggested to better share the activities implemented and the results achieved with UNDP CO and the MoE, adopting the system of indicators presented above or those found more opportune.

The drafting of short technical and financial report will permit to:

- share the information about the field experiences (otherwise difficult to be reached);
- quantify the efforts devoted to the Project or other parallel activities in the behalf of the MoE;
- confront the planned activities and budget with the obtained results;
- identify and analyse how activities carried out helped in producing the different outputs;
- qualify possible main barriers that can difficult the achievement of the expected outcome.

Annexes

Annex 1 Terms of Reference

Annex 1 - TERMS OF REFERENCE – Mid-Term Evaluation Expert Individual Contracts (IC)

Project Name: Safeguarding and Restoring Lebanon's Woodland Resources Project

Reference Number: 00061783

Subject: International expert for a midterm evaluation for the Reforestation project

1. Background

The long-term goal of the Safeguarding and Restoring Lebanon's Woodland Resources Project is to complement the on-the ground investments undertaken through the National Reforestation Program through the creation of an enabling environment and by building capacity for sustainable land management as a contribution to greater ecosystem stability, enhanced food security and improved rural livelihoods. The rationale is to remove the institutional, economic, technical barriers to Sustainable Land Management in this sector in order to enable the National Reforestation Plan to meet its targets and up-scale forestry Sustainable Land Management models and approaches over 20 years at the national scale. The immediate objective is to develop a strategy for safeguarding and restoring Lebanon's woodland resources and assist its implementation through capacity building and execution of appropriate SLM policies and practices.

2. Scope of Work, Responsibilities and Description of the Proposed Analytical Work

Scope of Work

The mid-term evaluation is intended to assess the applicability of the original project activities, strategies and assumptions and to evaluate the modifications adopted by the project. It also provides an opportunity to assess early signs of project success or failure and prompt necessary adjustments and the basis for learning and accountability for the project. It will also assess lessons learnt and make recommendations for way forward to ensure national/local ownership and effectiveness in achievement of project results.

1

Objectives of the Evaluation

1) Assess the continuing appropriateness and relevance of the original project activities, strategies and assumptions. The project context, threats and opportunities (risks) may have changed during the course of the project. Assess what adjustments have been made and what others might be necessary;

2) Review of the status of the project activities, outputs and outcomes vs. the stated targets of the original project document and its agreed amendments;

3) Assess the major achievements of the project to date in relation to its stated objectives and intended outputs;

4) Assess the performance of the project in terms of timeliness, quality, quantity and cost effectiveness of the activities undertaken including project procurement;

5) Make recommendations on key strategic options for the future of the project;

6) Assess the prospects of the sustainability of the project outcomes and benefits and recommend measures for further improvement;

7) Describe any unforeseen impacts (whether positive or negative);

8) Identify any exceptional experiences that should be highlighted e.g. case-studies, best practice;

Methodology of Work

The work is expected to be carried out by one internationally recruited consultant with expertise on forestry framework management as well as adequate technical knowledge and experience.

The methodology of work will consist of desk review of relevant project documentation including the project document and its amendment (the inception report), annual and quarterly project work plans, progress and financial reports, monitoring mission reports, and progress implementation report (PIR) and direct consultations with the project management unit (PMU) and other key local stakeholders. Field visits to the project sites, beneficiaries and local communities will be held in coordination with the PMU.

Interviews with target beneficiaries, project partners, implementing agency, cooperating/responsible partners and individuals, project staff and local communities.

The International Consultant shall coordinate and work with the Energy and Environment Programme of UNDP Lebanon, and the National Reforestation Project management team located at the Ministry of Environment.

Expected Outputs

1) A comprehensive report and a summary/associated power-point presentation of the evaluation findings and proposed actions;
2) Any required reports/documents that need to be submitted to the GEF (to be determined).

3. Qualifications Required

Title: International Consultant: Mid-Term Evaluation

The International Consultant should possess the following minimum qualifications:

I- Academic Qualifications:

a. Advanced University degree in natural resources management/local development, with practical experience in organization management, strategic planning of associations and public organizations at the national level.

II- Years of Experience:

a. Local/Regional/International relevant experience of not less than 7 years.
b. Experience in the evaluation of similar projects;
c. Experience of at least 5 years in forest/management, natural resource management and/or socio-economic development or related field;
d. Experience in result-based management evaluation methodologies;
e. Experience in applying participatory monitoring approaches.

III- Competencies:

a. Perfect communication skills in English (Oral and written);
b. Working knowledge of Arabic is an asset
c. Demonstrable analytical skills;
d. Recent knowledge of the GEF Monitoring and Evaluation Policy is an asset;
e. Recent knowledge of UNDP's results-based evaluation policies and procedures is an asset;
f. Competence in Adaptive Management, as applied to conservation or natural resource management projects;
g. Teamwork;
h. Proficiency in computer use.

4. Duration of Contract

The overall duration of the tasks covered by this ToR has been estimated not to exceed 10 days, including the mission to Beirut and related desk-work to pre-review the required project documentation and submission of the final report.

5. Reporting

The International Consultant should submit one soft copy of the first draft of his/her report on CD as well as 2 hard copies.

The final report shall be submitted within 2 weeks from receiving the comments of the project management and UNDP on the draft report.

Annex 2 Itinerary

Date	Time	Activities
Saturday, 15 October, 2011	07:00 – 17:00	International travel
Monday, 17 October, 2011	10:00 – 17:00	Meeting with UNDP Reforestation Project Team, presentation of the Team and Project.
Tuesday, 18 October, 2011	07:30 – 17:00	Field Visit to trials plots in West Bekaa (Kfaraya, Aytanit and Lala) and AFDC nursery in Ramlieh.
Wednesday, 19 October, 2011	10:00 – 11:00	Meeting with Mr. Michel Khouzami, National Consultant
	12:30 – 14:30	Meeting with Dr. Magda Bou Dagher Kharrat - Jouzour Loubnan, University of Saint Joseph
	12:00 – 01:00	Meeting with Mr. Adel Yacoub – MoE Technical Focal Point MoE
Thursday, 20 October, 2011	10:00 – 15:00	Meeting with UNDP Reforestation Project Team
	15:00 – 17:00	Drafting of first conclusions
Friday, 21 October, 2011	10:00 – 12:00	Meeting with Reforestation Project Team
	12:00 – 02:00	Meeting with Ms. Jihan Seoud , E&E Programme Manager UNDP CO
Saturday, 22 October, 2011	04:00 – 11-30	International travel

Annex 3 List of persons interviewed (in alphabetical order, by first name)

Name	Function	Contact Address
Mr. Adel Yacoub	Acting Head, Department of Natural Resources Protection	Lazarieh Center, 8th Floor, Block A-4 New, A4-Old, A5 Beirut-Lebanon. Tel: +961 1 976555 ext. 456 Fax: +961 1 976530 E-mail: a.yacoub@moe.gov.lb
Mr. Ahmad Saleh	Mayor of Kefraya	Mobile: +961 71 89 10 72
Mr. Charbel Rizk	UNDP Project manager Flood Project	Ministry of Agriculture Tel: +961 1 849645. Mobile: +961 3 84 84 12
Mr. Fady Asmar	Freelance Consultant Natural Resources	Mobile: +961 3 25 98 18 E-mail: fady.asmar@hotmail.com
Mr. Farouk Selman	Manager of AFDC nursery	Ramlieh Nursery Mobile: +961 03 71 13 86
Mr. Garo Haroutunian	UNDP Reforestation Project Manager	Lazarieh Center, 8th Floor, Block A-4 New, A4-Old, A5 Beirut, Lebanon. Mobile: +961 3 333711
Ms. Jihan Seoud	E&E Programme Manager UNDP CO	United Nations Development Programme Arab African International Bank Bldg, Riad El Solh Beirut 2011 5211, LebanonTel: +961 1 962 493. Mobile: +961 3 161 370 E-mail: jihan.seoud@undp.org
Ms. Krystel Rizk	UNDP SRLWR Project Assistant	Lazarieh Center, 8th Floor, Block A-4 New, A4-Old, A5 Beirut, Lebanon. Mobile: +961 3 833087
Dr. Magda Bou Ddagher Kharrat	Jouzour Loubnan Vice-Director, Associate Professor Universite Saint Joseph	Email: boudagher@fs.usj.edu.lb
Mr. Michel Khouzami	National Consultant for the UNDP SRLWR Project	Tel: +961 03 32 98 21- Mobile: +961 3 24 47 36 E-mail: michel.khouzami@gmail.com
Mr. Richard Riachy	UNDP SRLWR Project Field Assistant	Lazarieh Center, 8th Floor, Block A-4 New, A4-Old, A5 Beirut, Lebanon. Mobile: +961 3 279573
Mrs. Sawsan Abu Fakhreddine	Director general AFDC	Sagesse Street, Madi Bld., 1st floor, Jdiedeh, Lebanon, Tel/fax: + 961 1 89 84 75 / 6 E-mail:afdc@afdc.org.lb, Website:www.afdc.org.lb

Annex 4 Glossaries

This glossary of terms is drawn from UNDP, GEF and UNEG source materials, as well as from the OECD-DAC and MEA, FAO, IUCN and other technical tests. The terminology presented refers to the evaluation and the technical notes presented.

Term	Definition
Adaptive management	The mode of operation in which an intervention (action) is followed by monitoring (learning), with the information then being used in designing and implementing the next intervention (acting again) to steer the system toward a given objective or to modify the objective itself.
Baseline	A set of reference data sets or analyses used for comparative purposes; it can be based on a reference year or a reference set of (standard) conditions.
Categorization of Stakeholders	*Internal stakeholders* are those groupings of people who operate entirely within the boundaries of the organisation, e.g. administrators, clerical staff, nurses, food service personnel, housekeeping personnel, etc. *Interface stakeholders* are those who function both internally and externally in relation to the organisation. The major categories of interface stakeholders include the board of directors and the medical staff. *External stakeholders* fall into three categories in their relationship to the organisation: I) those who provide inputs to the organisation - members or patients, third-party payers, and equipment and material vendors; ii) those who compete with the organisation for members, patients and resources; iii) those with a special interest in how the organisation functions – the Chamber of Commerce or economic development organisations.
Co-Financing	Includes Grants, Loans/Concessional (compared to market rate), Credits, Equity investments, In-kind support, other contributions mobilized for the project from other multilateral agencies, bilateral development cooperation agencies, NGOs, the private sector and beneficiaries. Refer to Council documents on co-financing for definitions,such as GEF/C.20/6.
Conclusions	Point out the factors of success and failure of the evaluated intervention, with special attention paid to the intended and unintended results and impacts, and more generally to any other strength or weakness. A conclusion draws on data collection and analyses undertaken, through a transparent chain of arguments.
Cost Effectiveness	Assesses the achievement of the environmental and developmental objectives as well as the project's outputs in relation to the inputs, costs, and implementing time. It also examines the project's compliance with the application of the incremental cost concept.
Country Ownership	Relevance of the project to national development and environmental agendas, recipient country commitment, and regional and international agreements where applicable.
Decision analytical framework	A coherent set of concepts and procedures aimed at synthesizing available information from relevant segments of the given ecosystem manage- ment problem in order to help policy-makers assess consequences of various decision options. DAFs organize the relevant information in a suitable framework, apply decision criteria (both based on some paradigms or theories), and thus identify options that are better than others under the assumptions characterizing the analytical framework and the application at hand.
Decision-maker	A person whose decisions and actions can influence a condition, process, or issue under consideration.
Direct Use Value	In the total economic value framework, the benefits derived from the goods and services provided by an ecosystem that are used directly by an economic agent. These include consumptive uses (e.g., harvesting goods) and non consumptive uses (e.g., enjoyment of scenic beauty). Agents are often physically present in an ecosystem to receive direct use value. Compare indirect use value.

Ecosystem approach	A strategy for the integrated management of land, water, and living resources that promotes conservation and sustainable use in an equitable way. An ecosystem approach is based on the application of appropriate scientific methodologies focused on levels of biological organization, which encompass the essential structure, processes, functions, and interactions among organisms and their environment. It recognizes that humans, with their cultural diversity, are an integral component of many ecosystems.
Ecosystem services	The benefits people obtain from ecosystems. These include provisioning services such as food and water; regulating services such as flood and disease control; cultural services such as spiritual, recreational, and cultural benefits; and supporting services such as nutrient cycling that maintain the conditions for life on Earth. The concept "eco- system goods and services" is synonymous with ecosystem services.
Effectiveness	The extent to which the development intervention's objectives were achieved, or are expected to be achieved, taking into account their relative importance. Note: Also used as an aggregate measure of (or judgment about) the merit or worth of an activity, i.e. the extent to which an intervention has attained, or is expected to attain, its major relevant objectives efficiently in a sustainable fashion and with a positive institutional development impact. Related term: efficacy.
Efficiency	A measure of how economically resources/inputs (funds, expertise, time, etc.) are converted to results.
Evaluation	Project evaluations assess the efficiency and effectiveness of a project in achieving its intended results. They also assess the relevance and sustainability of outputs as contributions to medium-term and longer-term outcomes. Projects can be evaluated during the time of implementation, at the end of implementation (terminal evaluation),or after a period of time after the project has ended (ex-post evaluation). Project evaluation can be invaluable for managing for results, and serves to reinforce the accountability of project managers, COs, PTAs, etc. Additionally, project evaluation provides a basis for the evaluation of outcomes and programmes, as well as for strategic and programmatic evaluations and ADRs, and for distilling lessons from experience for learning and sharing knowledge. In UNDP, project evaluations are mandatory when required by a partnership protocol, such as with the Global Environment Facility.
Financial Planning	Includes actual project cost by activity, financial management (including disbursement issues), and co-financing.
Forest Lands	Forest lands or soils with potential for forest activities are "lands which are currently producing or can be capable of producing a forest ". These soils include: bare soils, degraded forest soils, abandoned agricultural lands (including terraces), rocky lands with pocket soils, degraded forests susceptible to reclamation".
Forest Landscape Restoration	Forest Landscape Restoration brings people together to identify and put in place a mix of land use practices that will help restore the functions of forests across a whole landscape, such as a water catchment. The aim of this approach is to benefit both communities and the natural world. Forest Landscape Restoration seeks to strengthen the relationship between rural development, forestry and other natural resource management and conservation approaches. It shifts the emphasis away from simply maximising tree cover on individual forest sites to optimising the supply of forest benefits such as clean water, timber production and nature conservation within the broader landscape. It does not try to re-establish the pristine forests of the past.
Geographic information system (GIS)	A computerized system organizing data sets through a geographical referencing of all data included in its collections. A GIS allows the spatial display and analysis of information.
Implementation Approach	Includes an analysis of the project's logical framework, adaptation to changing conditions (adaptive management), partnerships in implementation arrangements, changes in project design, and overall project management.

Indicator	Information based on measured data used to represent a particular attribute, characteristic, or property of a system. In project management indicators are expected to be S.M.A.R.T. (specific, measurable, appropriate or applicable, relevant and time-bounded).
Joint Evaluation	An evaluation to which different donor agencies and/or partners participate.
Land Degradation Focal Area	The Land Degradation Focal Area directly supports the implementation of the UNCCD, as an operating entity of the Financial Mechanism of the Convention, as well as indirectly the Non-Legally Binding Instrument (NLBI) on all types of forests of UNFF. At the same time, the LD FA fosters synergetic benefits with the UNFCCC, UNCBD and relevant international agreements on the sustainable use of waters.
Landscape	An area of land that contains a mosaic of ecosystems, including human-dominated ecosystems. The term cultural landscape is often used when referring to landscapes containing significant human populations or strongly changed by the long-term human activity a sit results in the Mediterranean Basin.
Lessons Learned	Generalizations based on evaluation experiences with projects, programs, or policies that abstract from the specific circumstances to broader situations. Frequently, lessons highlight strengths or weaknesses in preparation, design, and implementation that affect performance, outcome, and impact.
Leveraged Resources	Additional resources, beyond those committed to the project itself at the time of approval, which are mobilized later as a direct result of the project. Leveraged resources can be financial or in-kind and they may be from other donors, NGO's, foundations, governments, communities or the private sector.
Monitoring	The periodic oversight of a process, or the implementation of an activity, which seeks to establish the extent to which inputs, work schedules, other required actions and outputs are proceeding according to plan, so that timely action can be taken to correct the deficiencies detected.
Outcome	Actual or intended change in development conditions that UNDP interventions are seeking to support. It describes a change in development conditions between the completion of outputs and the achievement of impact.
Outputs	Tangible products (including services) of a programme or project that are necessary to achieve the objectives of a programme or project. In the context of this programme evaluation, outputs are mostly identical with the results of projects.
Participatory Approach	The use of participatory methods and tools has become common practice in development. The process mainly involves: appraisal, needs identification, restitution, organization, planning, implementation and evaluation. Participatory planning is the initial step in the definition of a common agenda for development by a local community and an external entity or entities. Over the period, this initial step is expected to evolve for the parties concerned towards a self-sustaining development planning process at the local level.
Participatory Planning in Forestry	Participatory planning is an effort of the parties involved to elaborate a common agenda for future development actions. In the context of community forestry projects, participatory planning can be defined as joint actions of local people and project staff with the objective of formulating development plans and selecting the best available alternatives for their implementation. It should be a two-way learning process of dialogue, negotiation and decision-making between insiders and outsiders, concerning activities to be undertaken by the insiders and supported by the outsiders. The first assumption, therefore, is that participatory approaches facilitate this process of local empowerment; the second assumption is that the use of participatory approaches will allow the integration of local knowledge systems into local project planning and implementation.
Planting Stock	The planting stock is defined as the plants raised from seeds (called seedlings), from parts of plants (frequently cuttings), or from plants from natural regeneration (less used for forest purposes). The seedlings grown in

	nurseries, as containerized stock or as bare-root, are the most frequent planting stock used in plantations nowadays. The ideal seedling can be defined through 5 sequential steps: Objectives of the plantation; Proper seed source; Site conditions; Planting timing window; Planting tools.
Provenance	The provenance or seed source specifies the location of a stand or stands of trees that constitute part of a local natural system, which preserves homogeneity in ecological factors, lithology, geomorphology and vegetation.
Quality Assurance	Quality assurance encompasses any activity that is concerned with assessing and improving the merit or the worth of a development intervention or its compliance with given standards. Note: examples of quality assurance activities include appraisal, results based management, reviews during implementation, evaluations, etc. Quality assurance may also refer to the assessment of the quality of a portfolio and its development effectiveness. For the purposes of this Guide, it especially refers to the assessment of the quality of terminal evaluations carried out for UNDP/GEF projects.
Recovery	Recovery focuses on restoring the capacity of national institutions and communities after a crisis (a natural disaster or armed conflict). In the context of this report, recovery projects in the sense of this report are projects funded through the Lebanese Recovery Fund (LRF).
Reforestation and Afforestation	Restoration of degraded lands, abandoned agricultural areas, unproductive grasslands and other wooded lands with or without trees- The objective of any activity in these lands is to create or restore the forestry cover, where all the former forestry system (soil and green cover) was partially or totally destroyed and substituted by pasture-lands or agricultural lands. Afforestation and reforestation are needed in the above-mentioned lands. Where afforestation means the action of planting forestry trees for the first time in bare areas and reforestation means the action of restoring the forest that has been destroyed by human and natural events, such as land conversion, fires, quarries, landslides, etc. Reclamation of forests with low forest cover (15-35 %): Forests with low cover represent more than % of all forests (MoE, MoA, LEDO, 2003). The ecosystems (soil and green cover) have lost their functionality and natural regeneration is hindered by past and present human and climatic pressures. Reclamation efforts will be focusing firstly on enrichment of forests with pioneer species and will be followed by a silvicultural species. There is a need for a broader concept of forest resources management which integrates reforestation with the promotion of natural regeneration processes and silvicultural activities in the existing forest stands and Forest fire prevention and combating.
Relevance	The extent to which the objectives of a development intervention are consistent with beneficiaries' requirements, country needs, global priorities and partners' and donors' policies.
Replication Approach	In the context of GEF projects, is defined as lessons and experiences coming out of the project that are replicated or scaled up in the design and implementation of other projects.
Results	The positive and negative, foreseen and unforeseen changes to and effects produced by a development intervention. In GEF terms, results include direct project outputs, short- to medium-term outcomes, and longer term impact including global environmental benefits, replication effects, and other local effects.
Risk Analysis	An analysis or an assessment of factors (called assumptions in the logframe) affect or are likely to affect the successful achievement of an intervention's objectives. A detailed examination of the potential unwanted and negative consequences to human life, health, property, or the environment posed by development interventions; a systematic process to provide information regarding such undesirable consequences; the process of quantification of the probabilities and expected impacts for identified risks.
Stakeholder	An actor having a stake or interest in a physical resource, ecosystem service, institution, or social system, or someone who is or may be affected by a public policy.

Stakeholder Participation	Stakeholders are agencies, organizations, groups or individuals who have a direct or indirect interest in the development intervention or its evaluation.
Sustainability	Measures the extent to which benefits are likely to continue, within or outside the project domain, from a particular project or program after GEF assistance/external assistance has come to an end. Projects need to be environmentally as well as financially and socially sustainable.
Sustainable Land Management	SLM is defined as a knowledge-based procedure that helps integrate land, water, biodiversity, and environmental management (including input and output externalities) to meet rising food and fiber demands while sustaining ecosystem services and livelihoods.
Terms of Reference	Written document presenting the purpose and scope of the evaluation, the methods to be used, the standard against which performance is to be assessed or analyses are to be conducted, the resources and time allocated, and reporting requirements. Two other expressions sometimes used with the same meaning are “scope of work” and “evaluation mandate”.
Triangulation	The use of three or more theories, sources or types of information, or types of analysis to verify and substantiate an assessment. Note: by combining multiple data sources, methods, analyses or theories, evaluators seek to overcome the bias that comes from single informants, single methods, single observer or single theory stud

Annex 5 Grants financed by the Global Environment Facility's Small Grants Programme

The Global Environment Facility's Small Grants Programme aims to deliver global environmental benefits through involvement of Community Based Organizations.

The list include project financed since 2006; the shadowed lines refer to forest related or SLM projects pertinent with the SRLWR Project.

Title	Grant US$	Grantees	Dates	Focal Area
Management of the southern sector of Al-Shouf Cedar Reserve in collaboration with local communities (Niha, Mrusti, Jibaa and Khraibi), (LEB/OP3/1/05/01)	30.500	Al-Shouf Cedar Society	5/2006 - 5/2007	Biodiversity
Deir El Ahmar environment educational garden, (LEB/OP3/1/05/02)	15.000	Women's Association of Deir El Ahmar	5/2006 - 6/2007	Biodiversity
Ras Baalbeck Green Plan forest protection, (LEB/OP3/1/05/03)	13.300	Environment association - Ras Baalbeck	5/2006 - 3/2008	Biodiversity
Bint Jbeil environment educational garden, (LEB/OP3/1/05/04)	24.212	Al-Mabarrat association	5/2006 - 12/2008	Biodiversity
Rainwater catchment pond at Bsharri, (LEB/OP3/1/05/05)	23.100	The committee of the cedars forest friends	5/2006 - 5/2007	Biodiversity
Formulation of policies on climate change, (LEB/OP3/1/05/06)	21.840	Lebanese committee for environment and development	5/2006 - 5/2007	Climate Change
Project for the decrease of POPs at Nabatiyeh, (LEB/OP3/1/05/07)	31.100	Association for environment protection and heritage preservation	5/2006 - 4/2008	POP
Survey of plants at Bantael Reserve, (LEB/OP3/1/05/08)	40.800	Green square	5/2006 - 4/2009	Biodiversity
Cedar forest planting project in Douma village, (LEB/OP3/2/06/01)	4.000	Douma club	5/2006 - 12/2008	Biodiversity
Al Chaquif national and archeological reserve project, (LEB/OP3/2/06/02)	44.000	Amwaj of the environment	7/2007 - 6/2009	Biodiversity
Project for studying and protecting Baabda forest, (LEB/OP3/2/06/03)	35.000	Association des amis du collège Antonin	7/2007 - 5/2008	Biodiversity
Establishing a nursery for endangered agricultural crops in Ikleem El-Kharoub district, (LEB/OP3/2/06/05)	19.500	Barja Tourath association	6/2007 - /	Biodiversity
Combating desertification and improving green cover at Fakeha Al Ain village, (LEB/OP3/2/06/06)	12.250	Centre de ressources et d'accompagnement en développement local	6/2007 - /	Land Degradation

Title	Grant US$	Grantees	Dates	Focal Area
Stopping/decreasing the "avalanches" at Arid El Joura - Becharre, (LEB/OP3/2/06/04)	40.700	Association for environmental conservation - Becharre	6/2007 - /	Land Degradation
Introducing the agriculture of medicinal, aromatic and nutritional plants at Tannourine cedars, (LEB/OP3/2/06/07)	44.000	Rassemblement des amis des cèdres de Tannourine	7/2007 - 6/2010	Biodiversity
Awareness campaign on batteries' hazards and management project, (LEB/OP3/2/06/09)	15.000	Al Midane Association	8/2008 - 9/2009	Land Degradation
Improving Kharob cultivation in southern coastal area, (LEB/OP3/2/06/12)	30.000	Association of the Friends of the Environment	8/2008 - 3/2010	Biodiversity
Establishment of native plants nursery in Araya area, (LEB/OP3/2/06/08)	22.000	Environment Association at Araya	7/2008 - 12/2009	Biodiversity
Improving rangeland management and carpet production in Irsal , (LEB/OP3/2/06/10)	30.000	Development Studies Association	4/2008 - 4/2011	Land Degradation
Organic olive production project at Yohmor El-Chquif, (LEB/OP3/2/06/11)	30.000	The Cultural and Social Forum at Chequif	8/2008 - 2/2010	Land Degradation
Reforestation of Tyreh village project, (LEB/OP3/2/06/13)	23.000	Welfare Association at Tyreh	8/2008 - 3/2010	Biodiversity
Enviropreneurship nature and cultural heritage through the development of ecotourism in the jurd of Hermel project , (LEB/SGP/OP4/Y1/CORE/2008/02)	49.707	Society for Development Studies	11/2008 - 10/2009	Biodiversity
Increasing the efficiency of the marginal land by transforming it into organically cultivated land or forest in Mairouba - Keserwan area, (LEB/SGP/OP4/Y1/CORE/2008/03)	43.000	Club Central	10/2008 - 4/2010	Land Degradation
Rmaish - Al Waara forest protection project , (LEB/SGP/OP4/Y1/CORE/2008/04)	25.800	Lebanese Association for Village Development	10/2008 - 10/2010	Biodiversity
Forest and fruit trees nursery project in Rashayia, (LEB/SGP/OP4/Y1/CORE/2008/05)	31.075	Child Welfare Association in Rashayia	10/2008 - 10/2009	Biodiversity
Medicinal plants and flowers propagation project in Aley , (LEB/SGP/OP4/Y1/CORE/2008/06)	35.000	Green Hand Association	10/2008 - 10/2011	Biodiversity
POP in Jbeil Caza: identification of hotspots and raising awareness campaign, (LEB/SGP/OP4/Y2/CORE/2009/01)	50.000	Byblos Ecologia	10/2009 - 9/2010	POP
Renewable Energy: Introduction and use in Arab Salim, (LEB/SGP/OP4/Y2/CORE/2009/03)	42.000	The Lebanese Solar Energy Society	9/2009 - /	Climate Change

Title	Grant US$	Grantees	Dates	Focal Area
Building a Local network of living trees platform for the conservation of land resources in Jabal Moussa, (LEB/SGP/OP4/Y2/CORE/2009/04)	47.668	Jabal Moussa Association	9/2009 - 5/2011	Biodiversity
Combating desertification and improving green cover at Fakeha AlAin Village, (LEB/SGP/OP4/Y2/CORE/2009/05)	37.750	Centre de ressources et d'accompagnement en développement local	9/2009 - 7/2011	Land Degradation
Protection of Juniperus and Cedars Forest in Hermel Area, (LEB/SGP/OP4/Y2/CORE/2009/06)	38.000	Jam3eiat Asdeka2 El Ard Wal Insan-Hermel	9/2009 - 8/2012	Land Degradation
Construction of waste water treatment pond in Tyre Natural Reserve, (LEB/SGP/OP4/Y2/CORE/2009/02)	50.000	Tyre Coast Natural Reserve	1/2010 - /	International Waters
Recycling of Quarries' Waste in Orsal village for Paint Industry (LEB/SGP/OP4/Y3/CORE/2010/01)	43.000	Orsal Rural Development Association		Land Degradation
Recycling Olive Oil Waste (pomas) to replace fire Wood in Nabha, (LEB/SGP/OP4/Y3/CORE/2010/02)	11.200	Sanabel Al Aata Association	9/2010 - 11/2011	Biodiversity
Reforestation and Forage Planting Ansar Village, (LEB/SGP/OP4/Y3/CORE/2010/03)	14.350	Lebanese Association for Development, Rehabilitation and Care	9/2010 - 11/2011	Biodiversity
Liquid Waste Management in Nmayrieh, (LEB/SGP/OP4/Y3/CORE/2010/05)	40.000	Association de Riaya et Erchad-Nmeirieh	9/2010 - 9/2013	Land degradation
Planting of Wild Relatives and Endemic Plants of Economic Importance, (LEB/SGP/OP4/Y3/CORE/2010/04)	31.950	Comite Protection Environnement L. Nord	9/2010 - 10/2012	Biodiversity
Emergency Reforestation Plan for Burnt Forests in Lebanon, (LEB/SGP/OP4/Y3/CORE/2010/06)	24.000	Green Services Program	9/2010 - 10/2013	Biodiversity
Supporting sustainable agriculture in Rashaya and surroundings, (LEB/SGP/OP4/Y3/CORE/2010/07)	35.500	Jamiat ALruya Liltanmiah wa taaheel	9/2010 - 10/2012	POP
Establishment of Center for Biodiversity Protection in Marbeen Protected Area (LEB/SGP/OP4/Y3/CORE/2010/08)	50.000	Developpement Sans Frontieres	9/2010 – 2012	Biodiversity

Annex 6 Bibliography

List of project documents

Annual Project Implementation Reports (PIR)
GEF Project Information Form (PIF)
Inception Report
Project Document and Log Frame Analysis (LFA)
Project Implementation Plan

List of other documents reviewed

ESCWA (2007), Regional Conference on Land Degradation Issues in the Arab Region, Presentation on Land Degradation in Lebanon by H. Nasrallah.
FAO (2010), Global Forest Resources Assessment 2010, Country Report Lebanon http://www.fao.org/docrep/013/al549E/al549e.pdf
GEF (2007), Land degradation focal area strategy and strategic programming for GEF-4
GEF (2009), Third Meeting for the Fifth Replenishment of the GEF Trust Fund October 14-15, 2009 Paris, France
International Institute for Environment & Development (2005) Power Tools: Stakeholder Power Analysis
MoE (2011), Lebanon's Second National Communication to the United Nations Framework Convention on Climate Change
MoE (2011), Mission statement and work program 2011-2013
MoE (2011), State and Trends of the Lebanese Environment 2010
UN (2010), Department of Field Support, Official Lebanon Map (Map 4282).
UNDP (2008), UNDP Style Manual
UNDP (2009), Handbook on planning, monitoring and evaluating for development results
UNDP (2011), Addendum evaluation, updated guidance on evaluation in the handbook on planning, monitoring and evaluating for development results 2009
UNDP (2011), The evaluation policy of UNDP
UNDP (2011), UNDP evaluation guidance for GEF-financed projects version for external evaluators, final draft.

List of web sites visited

Adaptive management: www.adaptivemanagement.net/

GEF small grants programme: http://sgp.undp.org/index.cfm

Global Environmental Fund: http://www.thegef.org; http://gefonline.org;

Ministry of Environment of Lebanon: http://www.moe.gov.lb/Pages/MOE%20Home.aspx

UNDP Evaluation Policy: http://www.undp.org/evaluation/policy.htm

United Nations cartographic centre:
http://www.un.org/depts/Cartographic/english/htmain.htm

United Nations editorial Manual: http://69.94.137.26/editorialcontrol/index.htm

United Nations terminology: http://unterm.un.org/

List of web sites, publications and books of interest (learning materials, forum, etc)

APAT - Agency for the protection of the environment and for technical services (2003) Seed propagation of Mediterranean trees and shrubs, http://www2.sl.life.ku.dk/dfsc/Extensionstudy/025%20Seed%20Propagation%20of%20Mediterranean%20Trees%5CSeed%20Propagation%20of%20Mediterranean%20Trees.pdf; A specific publication of Mediterranean species germination (a copy is also available in the MoE Library).

Castro J. et al. (2002) Shrubs as nurse plants for pine afforestation, a new technique for reforestation in Mediterranean mountains. http://onlinelibrary.wiley.com/doi/10.1046/j.1526-100X.2002.01022.x/full; An example of the use of shrubs to mitigate hard climatic and edaphic conditions.

De Dato (2006), Ricolonizzazione assistita in aree semi-aride mediterranee: un caso di studio http://homepage.mac.com/dedato/poster_conv_selvi08_v2.pdf; example of preparation of trials for shrubs species in the Mediterranean (with low survival rate) and data analysis.

Duryea (1992) Forest Regeneration Methods: Natural Regeneration, Direct Seeding and Planting. http://www.forestproductivity.net/pdfs/regen_methods.pdf; comparison of different regeneration systems for pines forests (some tables of interest). It also offers an idea of how the restoration approach has been evolved.

Gilmour et al. (2007) Reaching consensus Multi-stakeholder processes in forestry: experiences from the Asia-Pacific region, http://www.fao.org/docrep/010/ai390e/AI390E00.htm#Contents

Giono, Jean (1950), The Man Who Planted Trees, The Story of Elzéard Bouffier, The Most Extraordinary Character I Ever Met (http://ebookbrowse.com/gdoc.php?id=14959662&url=9b8bd002b134aeca349e57c7904406eb)

González-Rodríguez V & al. (2011) *Artificial regeneration with* Quercus ilex *L. and* Quercus suber *L. by direct seeding and planting in southern Spain* http://www.irnase.csic.es/users/interbos/Resultados/Publicaciones/González_Navarro_Villar_Ann%20For%20Sci_2011-1.pdf. Interesting article comparing seeding and planting

Haase, Diane L. (1998) Understanding Forest Seedling Quality: Measurements and Interpretation http://www.forestseedlingnetwork.com/Libraries/Tips_Notes_and_Advice_Downloads/Understanding_Forest_Seedling_Quality_-_Measurements_and_Interpretation.sflb.ashx; good description of morphological characteristics of seedlings.

http://www.ideastransformlandscapes.org web site promoting the approach of landscape restoration in developing countries, with a community group and links to publications.

Landis & others (2010) The Container Tree Nursery Manual - Volume Seven http://www.fs.fed.us/rm/pubs_other/wo_AgricHandbook674_7.pdf.

Pausas J (2004) Pines and oaks in the restoration of Mediterranean landscapes of Spain: New perspectives for an old practice – a review. http://www.uv.es/jgpausas/papers.htm; Article describing the difference reproduction systems between seeding and seedling's plantation.

USDA-NRCS Agroforester, Champaign, Illinois (2003), Illinois Direct Seeding Handbook, A reforestation guide (attached to the document) A complete guide for direct seeding in temperate environment.

Annex 7 List of the technical materials prepared by the MSC-IPP in support of the Lebanese National Reforestation Goal

1. Land use planning for reforestation & forest lands restoration
   Identification of Key Areas & Potential Sites
2. Conservation and sustainable management of forest genetic resources
   The *filière* from seed to seedling and definition of quality parameter for the target planting stock
3. Identification of potential priority species for forestry purposes and seed collection sites
4. Reforestation programme
5. Reforestation project model
6. Analysis of the forest institutions and laws in lebanon and organisational proposal for a forest agency
7. Five-year reforestation action & business plan
8. Final workshop presentation, december 2005

Annex 8 Recommendations for the Implementation of the Trials

Successful establishment of trees depends upon a wide range of interacting factors including climate, soil, competing vegetation, pests and plant characteristics. The likelihood of successful establishment can be improved by appropriate cultivation, drainage, weed control, protection and correct species choice. One aspect that is increasingly recognised as contributing to good establishment is planting stock quality.

The trials can help in identifying various issues related to the target planting stock and reforestation purposes.

To maximize the applicability of the trials' results, the number of outplanting sites is just as important as the stocktypes being compared. To the existing 3 sites furthers are suggested to be installed, so that a more significative series of parameters is compared.

Results and lessons learnt can be achieved if the trials can be repeated over a 3-year or 5-year period for comparing data with climatological variability.

To maximize the applicability of these results, different outplanting sites will be selected based in more than one species to be investigated (giving opportunities to new species, including broadleaves) and their relationship with seed sources[14].

Cooperation for carrying out the trials is a great opportunity for the Project.

Cooperative or participatory research can be helpful to achieve the following objectives:

- Involvement of different stakeholders through practical activities with a short-term, tangible result;
- Participation of actors in the definition of the target planting stock, allowing a better comprehension of this concept[15];
- Increased number of trails so to better compare different variables, climatic and edaphic conditions for different species and different seed sources and seedlings;
- Share of costs of operations, support between the public – education and private sector;
- Opportunity to insure the appropriate mechanisms to continue research activities and follow-up after Project's closure;
- Possibility to carry out more detailed morphological and physiological tests of seedlings at nursery and trials level;
- Systematization of recollected data can be significative for the practical definition of a protocol for the production of seedlings, through a process that can permit share of experiences between different sectors;
- Answering to participatory approach sought by the Project and promoted by the GEF.

14 Dr. Myrna Seeman carried out a detailed work concerning possible seed sources for different native species of Lebanon, identifying most important stands and their characteristics, that can also been helpful for the identification of different trials.

15 The target planting stock can be either produced with containerized or traditionally with the plastic bags, but the evaluation of a series of parameters is always essential: seed source, seedling age, plant morphology, root's characteristics, etc…

In function of the data collected till date, some suggestions are presented below.

The six components of the Target Plant Concept (Landis, 2010), introduced to evaluate the most suitable planting stock can be the guidelines for the definition of the parameters to be investigated. These are:

a. Seeds' sources;
b. Stock type or seedling quality (containerized, plastic bag, bare root, natural regeneration) and age;
c. Local adaptation and genetic differences for site;
d. Timing of the outplanting window or planting window (for example winter time face to spring time);
e. Outplanting techniques and tools, including soil and water conservation measures;
f. Purpose.

Seed's origin is fundamental to determine most appropriate seed's sources and seedling's tests should last at least 5 years, insuring a better comprehension of what it's obtained in the nursery at field level, those trying to better understand what can be typical sites at country level, to permit to identify better option.

It's suggested for the next years to confirm seed's sources or to define the seed source in function defined recollection sites.

Seedling's quality The objective is to support a system that is capable to produce, at least for resinous species, 6-12 months old seedlings of high quality. When using 2-year-old stock, it can occur that old plants are used, of unknown origin, or the outplanting can delay by 3 or more years. In the case of burnt areas, this delay period may allow for competing vegetation to occupy the area, thereby increasing reforestation costs.

The evaluation of seedlings before testing is an important step for identifying some key attributes. Some morphological characteristics can be described easily in the nursery (see Haase and Landis for more references), others can be tested in laboratories (see table below).

Example of test for forest seedlings before planting (Source: UK Forest Service)

Test type	Physical		Physiological		Sample size (n°. of plants)
	Shoots	Roots	Shoots	Roots	
Morphology: Height, RCD, usability	Yes	x	x	x	15
Morphology: Root:shoot ratio	Yes	Yes	x	x	15
Root electrolyte leakage (REL)	x	x	x	Yes	10
Shoot electrolyte leakage (SEL)	x	x	Yes	x	10
Root moisture content (RMC)	x	x	x	Yes	15
Root growth potential (RGP)	Yes	Yes	Yes	Yes	15
Shoot/root frost tolerance	x	x	Yes	Yes	15

The trials' sites should be selected in function of their representativeness of a certain physiographic area and their proximity to seed's sources. The following information should be

used as a basis to compare data with other sites or similar experience at country o regional level:

1. Location
   a. Topographic maps, at scale 20.000 with GPS coordinates of the trials sites;
   b. GIS thematic maps, Geological map, Soil map, Slopes[16], Land use, Land cover, Forest map, Rainfall map at scale 40.000;
   c. Cadastral map at scale 1:2.000

2. Past and present use of land, including a description of the land use, the surroundings and the local potential benefits for the community

3. Land Tenure System and Agreement with the owner and other potential beneficiaries

4. Definition of the Environment
   a. Climate, with definition of the growing season and the estimated number of vegetative days;
   b. Geological & Pedological issues,
   c. Slopes & Orientation
   d. Soil analysis with some basic data as: pH, Particle Size Distribution (% of clay, silt, sand), total nitrogen and total carbon, etc…

The information for each site can be compared, following the example in the table below.

Site	Coordinates	Altitude	Exposition	Slope	Soils	N° of vegetative days
Site 1						
Site n						

The planting window is highly determinant for the results of the outplanting, mainly in Mediterranean climates, where the vegetation period is comprised between November and March. Tests can be applied considering different planting windows, but it's highly recommended to realize the out-planting during the winter months, as soon as rainy period has been stabilized, so to insure the use of water's reserve in the soil.

Outplanting techniques and cultural practices are all those actions implemented before and during the outplanting and used to insure the survival of seedlings and that are usually maintained during two years. As underlined by the preliminary results of the trials implemented in spring 2011, it is strongly suggested to include specific trials with respect to the kind of soil preparation and any other soil and water conservation measure, as far as these are of high importance in semi-arid or Mediterranean climates and need to be investigated with more attention. Some example of inexpensive soil conservation measures are presented in the report of P. del Lungo **(**reforestation programme and reforestation project model). In any case it is suggested the use of small tractors or caterpillars for the preliminary works, mostly in rocky soils.

16 Due to the small size of plot the slope map can be directly produced by the Project staff.

The correct preparation of soil, together with the above-mentioned elements, will permit to reduce the maintenance activities to weed's and animal control, with eventually an emergency irrigation in case of a very hot and long summer and the delay of autumn rains.

The comparison of data with other cultivation techniques (rechargeable or no-rechargeable water, irrigation or others) can be useful to establishing benchmarks for survivals, related to incremental costs and growth of the green material and root system.

Purpose of the outplanting should be the first element to be defined. Participation of local communities in the choice of species is crucial to the satisfactory result of plantations. The choice of different species, and the opportunity to associate them with multipurpose shrubs or annual plants is a great opportunity for insuring alternative incomes and promoting a more ecosystemic approach of reforestation activities.

In terms of design of the trials, test layout[17] can be based on 10 replications with single rows of 10 seedlings. It's suggested to cluster the test blocks in function of soil physiography and presence of rocks or other similar elements. Spacing between seedlings can vary in function of the future destination of the research plot, but it is usually narrower than traditional plantations and it can be included between 0,8 and 2 m. When spacing between rows is reduced, the maximum line of pendency is adopted to arrange seedlings. A tester can be defined to compare the results of the different treatments.

Survival rates are analysed using the number of live seedlings remaining in each plot. Growth traits, that is, height, leader length, and basal stem diameter, can be analysed using the mean of survivors in each plot. Survival rates are strictly related to root's growth, it will be appropriate to evaluate the importance of checking also root growth, mainly in association to cultivation treatments (irrigation, no irrigation and substitutes for irrigation).

Cost analysis is the second important data to be evaluated from the pilot-plots. The analysis will permit to evaluate the efficiency and effectiveness of the different choices and support the MoE in the definition of more accurate technical and financial references.

Field performance tests vividly can illustrate the most important results and can persuasively communicate implications for reforestation. The active participation of multiple actors (universities, private owners, NGOs and CBOs, Municipalities) that install and measure field tests, can permit to observe take-home lessons right on the planting sites. These tests invariably demonstrated that improved site preparation and immediate protection of planted seedlings against competing vegetation and browsing mammals proved to be widespread needs, together with the appropriate choose of species and seed source and the use of seedlings responding to qualitative parameters.

17 For statistical data analysis is suggested that the research centres of the Universities can help in the experimental design. It's also recommended to empower directly the owners/guardians of the trials and teach them how to carry measurements so they can take part to data collection.

Annex 9 Monitoring and Evaluation Report

Following the scheme proposed in Annex 7 Indicative Monitoring and Evaluation Plan of the Project Doc.

Type of M&E activity	Related to Output or Activity	Responsibility	Time Frame	Comments
Inception report	General management; Output 3.3 LF; Output 4 IR	PM with PMU	2 months after the start of project implementation.	Prepared
Characterisation of the natural assets in the pilot areas (baseline survey)	Output 2.2 LF/IR and 4.2.h IR	Team of national experts	During the first months of project implementation	Not executed, missing for the trials' sites and the MoE NRP sites
Progress reports	General management; Output 3.3 LF; Output 4 IR	Project Manager	Every two months.	Not executed
Visits to pilot sites	Output 2.2 LF/IR	UNDP and government representatives	Every year.	Not executed
IA annual reports	General management; Output 3.3 LF; Output 4 IR	UNDP country office with support from PMU	Every year.	Executed
Mid-term evaluation	Activity 3.4 LF; Activity 3.2.b IR	National consultant with project team	At the mid-point of project implementation.	On-going
External final evaluation	Activity 3.4 LF; Activity 3.2.b IR	Independent evaluation team (international consultants)	At the end of project implementation	Not Applicable
Terminal report	Activity 3.4 LF; Activity 3.2.b IR	IA country office, IA task manager, project team (PMU)	At least one month before the end of the project	Not Applicable
Baseline survey and monitoring of socio-economic parameters at pilot sites	Activity 2.6 LF;	Team of national experts	Annual surveys.	Not executed
Participatory project monitoring at pilot sites	Activity 2.3 LF; Activity 2.3.a	Local communities with project team	Annual surveys.	Not executed
Production of a video film on progress made at pilot sites	Activity 3.4 LF; Activity 3.3.b IR	PMU with EA	At least two times a year during vegetation period plus finishing	Not executed
Lessons learnt	Activity 3.4 LF; Activity 3.2.b IR	GEFSEC, IA, Project Team, Executing Agency	To be determined	Not executed

Annex 10 Features of some recyclable multi-pot containers* available on the market

Model	L x W x H mm	Number of cells per multipot tray	Cells /m^2	Cell volume cm^3	Stackabilty**	Advantages for nurseries located in hot climates	Material(1), shape of cells(2) and anti-spiralling devices(3)
HIKO V-13 Sweden	348 x 211 x 49	135	1836	13	yes		(1) rigid plastic (2) round (3) vertical ribs
HIKO V-50 Sweden	352 x 216 x 87	67	881	50	yes		(1) rigid plastic (2) round (3) vertical ribs
STASEM0027 Italy	490 x 300 x 150	60	408	147	no	Styrofoam containers constructed as blocks containing cavities are good insulators so protect the roots against hot and cold temperatures	(1) styrofoam, cells lined with rigid plastic (2) square (3) vertical ribs
STASEM0021 Italy	490 x 300 x 150	28	190	407	no	idem	(1) styrofoam, cells lined with rigid plastic (2) square (3) vertical ribs
HIKO V-530 Sweden	352 x 216 x 200	15	197	530	yes		(1) rigid plastic (2) round (3) vertical ribs
HIKO V-1300 Sweden	355 x 238 x 140	6	71	1300	yes		(1) rigid plastic (2) round (3) vertical ribs

Average life span of multipot containers** is considered to be between 8 and 12 years, depending on handling* **Stackabilty** is referred to the possibility of nesting multipot trays one *inside* the other, stackability represents a great advantage in terms of space (storage, transportation, etc) **HIKO containers** are produced by BCC Sweden www.bccab.com **STASEM containers** are produced by DEVI spa Italy www.devi-spa.com

From Beti Piotto (2005), Conservation and sustainable management of forest genetic resources: the *filière* from seed to seedling and definition of quality parameter for the target planting stock