



## INTERIM PROGRESS REPORT

<b>Reporting UN Organization</b>	: United Nations Development Programme
<b>Country</b>	: Lebanon
<b>Project No.</b>	: 00069789
<b>Project Title</b>	: Flood Risk Management and Water Harvesting for Livelihood Recovery in Baalback-El Hermel, Phase II
<b>RF Signature date</b>	: 10 October 2007
<b>Project Start date</b>	: Phase II: 20 February 2009
<b>Project Timeframe</b>	: Phase II: 31 March 2013
<b>Reporting Period</b>	: Jan – Mar 2012

### I. PURPOSE

#### Project Summary & Objectives

The project aims at assisting the Government of Lebanon in its recovery and reform efforts in the conflict-affected and high-poverty region of Baalback-El Hermel through better land management practices, namely flood risk reduction and improved access to irrigation water and networks to achieve crop diversification and improve productivity. This will be achieved through the construction of stone walls, check dams and water collection reservoirs to prevent runoff water from reaching villages and farms and through the restoration of land cover to reduce soil erosion. The objectives related to water management will be achieved through installation of water-use efficient irrigation networks and systems that will be used by local farmers to improve their crop diversity and productivity. The project is financed by the Government of Spain through the Lebanon Recovery Fund, a Lebanese Government led programme, established on the occasion of the Stockholm Conference, and is in line with the UNDP's development goal of alleviating poverty in rural dry lands of the conflict-affected Baalback - El Hermel area.

#### Project Phases and Expected Outputs

<b>FRM II</b> 3.8 million USD	<ul style="list-style-type: none"> <li>➔ Establishment and implementation of a flood risk management plan over an area of 250 km<sup>2</sup> in upper Aarsal and Ras Baalback.</li> <li>➔ Improved land cover in Ras Baalback and upper Aarsal mountains.</li> <li>➔ Improved soil conservation in Ras Baalback and Aarsal.</li> <li>➔ Improved public awareness on flood risks management and training of the target municipality on maintenance of flood management structures.</li> </ul>
----------------------------------	--

### Project Linkages to National Priorities and Recovery

The National Action Programme to Combat Desertification (NAP), which was developed in 2003 by the Ministry of Agriculture and in collaboration with UNDP and German Society for International Cooperation (GIZ), classified the project's target area (Baalback-El Hermel) as one of the areas prone to high risks of desertification. This is mainly due to lack of proper land and water management practices, bad rainfall distribution, overgrazing, steep mountains with shallow soil and poor vegetative cover. Moreover, summer droughts and uneven rain distribution are the main reasons for poor agricultural productivity in that area.

The effect of the July 2006 conflict on North Bekaa, particularly Baalback-El Hermel area was not to be underestimated. Large scale destructions in infrastructure, biodiversity and agriculture were reported. These led to harder living conditions, more poverty and increased soil erosion threats.

The expected outcomes from the current project particularly those related to water harvesting, increased vegetation cover and higher productivity will serve very well the national efforts and plans aiming at combating desertification and alleviating poverty in North Bekaa. They will also serve the recovery efforts made by the Lebanese government in normalizing the living conditions of rural communities and in restoring the basic needs and infrastructure for practicing sound and profitable agriculture in the affected area.

### Project Implementation Partners

Type of partner	Partner	Role
International Partners	Spanish Agency for International Cooperation	Provision of funds to project through the LRF
	German Society for International Cooperation (GIZ)	The GIZ had executed a pilot project on Flood over a pilot area of 18 km <sup>2</sup> . GIZ is the intellectual partner of UNDP for phase one. UNDP benefitted from the same experts and lessons learned from the GIZ project
National Partners	Ministry of Agriculture	Current host of the project. Provides support and follow-up on project activities
	Ministry of Water & Energy, Bekaa	Provides ad hoc support when needed and is a link to MoEW
	Local municipalities and communities	They are the direct beneficiaries of the project. They provide advice, follow-up, local contacts, facilitation, administrative papers, etc.

Based on the result of the evaluation requested by the LRF, the phase II of the project has been extended till the end of March 2013

## II. RESOURCES

	Amount (USD)
	Phase II
Total budget approved	\$3,800,000.00
Total disbursements as for March 2012	\$1,349,331.00
Commitments for next quarter	<b>\$151,526.00</b>
Available Balance	\$2,450,669.00

### Budget and Expenditure Breakdown per LRF Category:

CATEGORY	Total Budget (USD)	Exp. to date (USD)
1. Personnel (Incl. staff and consultants)	600,000	490,816
2. Contracts (Incl. companies, professional services)	250,000	268,137
3. Training (incl. AV printing / production)	50,000	375
4. Transport (local)	30,000	23,198
5. Supplies and commodities (Incl. IT equipment and rental & maintenance)	340,000	284,776
6. Equipment (including installation)	2,191,402	165,194
7. Travel	40,000	3,351
8. Miscellaneous	50,000	25,209
9. Agency Management Support (7%)	248,598	88,274
<b>TOTAL</b>	<b>3,800,000</b>	<b>1,349,331</b>

### III. Results: Progress per activities

Project Outputs	Activities	Progress to date	Targets for 2012
1. Project management	1.1 Technical, financial and operational Management.	<ul style="list-style-type: none"> <li>At the beginning of the year, UNDP management has assigned a project manager who will be coordinating the project activities to ensure that there is no gap in project management.</li> <li>Final evaluation for Flood I is completed by an international consultant. Final report submitted (see Annex I). The M&amp;E Unit did not receive the report. Could you please provide the M&amp;E unit with a soft copy. done</li> <li>Ongoing meetings with stakeholders, municipalities, line ministries and contractors.</li> <li>Continuous meetings and coordination with the Disaster Risk Management project at the office of the Prime Minister, in order to prepare the "National Flood Hazard Map", the project team helped in providing the necessary resources and materials and participated in the discussion of the outputs concerning disaster mapping. The map will serve in the development and updating of land use strategy.</li> <li>Improved coordination with the Ministry of Energy and Water and the Ministry of Environment on Flood management and the use of water ways is under the mandate of both the Ministry of Energy and Water and the Ministry of Agriculture. Accordingly, all plans and progress are being shared with the MoEW for the construction of the detention reservoirs. On the other hand, negotiations are on-going with the Ministry of Environment to get permission to install stone crusher.</li> <li>A cash contribution from UNDP/DDC (Dryland Desertification Centre) was granted to extend the irrigation network of the water reservoir in Deir El Ahmar. <b>The additional amount of USD 25,000</b> is transferred to the Flood II project (00069789) for a pragmatic completion of this activity within the project's overall implementation and monitoring. The reservoir and the feeding network were implemented under the Flood I project (DIM - 00059666).</li> </ul>	<ul style="list-style-type: none"> <li>Strengthened coordination with project stakeholders</li> </ul>
	1.2 Promote synergies with relevant on-going projects in target area.		<ul style="list-style-type: none"> <li>Coordination with Municipality of Ras Baalback for phase II implementation</li> </ul>
	1.3 Exchange of information and coordination meetings		<ul style="list-style-type: none"> <li>Design of flood risk management structures</li> <li>Procurement of sub-contractors for the implementation of Phase II</li> <li>Submission of quarterly progress reports</li> </ul>
2. Flood Risk Management and Reduction	2.1 Data collection and identification of target area. 2.2 Modeling of target area and generation of maps. 2.3 Construction for flood	<ul style="list-style-type: none"> <li>Meetings held with the Contractor in the presence of the Consultant to agree on the procedure of work, the communication strategy among the different partners, and to follow up the progress of work.</li> </ul>	<ul style="list-style-type: none"> <li>Initiation of excavations of flood water collection reservoirs</li> <li>Initiation of construction of FRM structures</li> </ul>

	<p>control and prevention. 2.4 Monitoring, evaluation and impacts assessment.</p>	<ul style="list-style-type: none"> <li>• Contractor is finalizing the excavation of reservoir RR12.</li> <li>• Initiation of excavation works in the 4 sections of reservoir RR14.</li> <li>• Contract signed for the construction of 114 wall structures on the 26th of January 2012. The winning bidder Bureau Hamid Kayrouz.</li> <li>• to initiate construction activities.</li> <li>• Shop drawings for the reservoirs revised and re-designed by the technical consultant, ELARD.</li> </ul>	<ul style="list-style-type: none"> <li>• Development of a flood management plan for Ras Baalback</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Determine the number and locations of stone walls</li> </ul> <hr/> <ul style="list-style-type: none"> <li>• Construct walls</li> </ul>
<p><b>3. Land Cover Improvement</b></p>	<p>3.1 Identification of erosion-sensitive areas 3.2 production 3.3 Crop diversification and increased productivity 3.4 Forestation cultivation 3.5</p>	<ul style="list-style-type: none"> <li>• The reforestation component is being executed in-house by the SLM team.</li> <li>• A water cistern and irrigation/spraying pump were granted to the Municipality of Ras Baalback in order to maintain and protect the seedlings that will be planted by the SLM team.</li> <li>• Site to be reforested selected by the Municipality and topographic survey was undertaken;</li> <li>• Design of the irrigation network and fences were identified and described by the team.</li> <li>• Procurement process and selection of suppliers for the “reforestation activities”, “the installation of fences and irrigation system” are completed.</li> <li>• Contract for “the management and supervision of reforestation activities signed with the Cooperative of Ras Baalback as the winning bidder.</li> <li>• POs signed by the suppliers for the provision of fences and irrigation system (Gergi Daccache s.a.l).</li> <li>• 3000 seedlings purchased and granted for the reforestation activity.</li> <li>• Reforestation activities launched in close coordination with the Coop of Ras Baalback and the municipality on March 25th, 2012 within the framework of awareness campaign where school children and local actors participated; till present, around 2200 seedlings were planted and 1300 seeds were sewed. Plantation and sewing operations are on-going. The Coop of Ras Baalback prepared the site before the forestation awareness campaign by digging 1800 holes of 35cm width and 40cm depth and irrigation was carried by the local during the event (the minimum quantity per tree: 12 liters and per seed: 6 liters). During the event, caps, flyers, shovels, hand tools were distributed.</li> </ul>	<ul style="list-style-type: none"> <li>• Forestation in Ras Baalback with forest trees</li> </ul> <hr/> <p>Development of plan to increase green cover in Ras Baalback. The aim of the green cover plan is to recreate the forest ecosystem with not just trees but also lower strata in order to reduce the soil erosion and flood hazards. Planting was done using seedlings and seeds, which in turn will also serve as a seed production unit to be used for future expansion of the green cover by the municipality when protecting from grazing is ensured. Within this activity, two types of solid water were used to be able to assess the difference between plants irrigated through solid water and the traditional irrigation. The project team prepared the ToRs, selected the contractors and supervised the execution of the activities. The maintenance and the protection of the forested site will be taken in charge by the municipality; for that reason, a cistern was granted to the municipality.</p> <hr/> <ul style="list-style-type: none"> <li>• Development of the irrigation plan to cover 1500 dunum and highest number of beneficiaries</li> </ul>

<p><b>4. Sustainability, capacity building and awareness raising</b></p>	<p>4.1 Empowerment of target beneficiaries.  4.2 Awareness-raising on flood and water management.  4.3 Capacity building through training.  4.4 Alternative livelihoods.</p>	<ul style="list-style-type: none"> <li>• Awareness on environmental issues (i.e. energy/water conservation, sustainable management, and reforestation) was held by "Bee Event" through theatric plays addressed to young students aging between 6 and 12 years old; launching of the play done at UNESCO palace on the 20th of February 2012 in the presence of 800 students. Till now, 41 theater presentations were performed mainly in the South of Lebanon (Nabih Berri Compound, Sultanieh School, Moussa Sadr School, etc.).</li> <li>• Site visit to Deir El Ahmar to assess the current viticulture conditions (07 March 2012). Viticulture for winery is considered for the local farmers as a promised cultivation with high economic value. For that, the farmers asked for training on how to manage water irrigation since they are facing shortage in water availability and to get introduced on the techniques of pruning wine grape varieties and fertilizers use.</li> <li>• Training on "best pruning practices for viticulture" organized in Deir El Ahmar (22 Mar 2012): 24 farmers participated. The aim of the training is to help the farmers how to select the best variety of wine grape taking into consideration the factors that would affect the productivity and quality of the final products, as well to introduce the appropriate pruning method for vine production. Beneficiaries are mainly vine growers of Deir El Ahmar and surroundings.</li> </ul>	<ul style="list-style-type: none"> <li>• Building the capacity of Ras Baalback Municipality in flood management and of the local farmers in Deir El Ahmar on Viticulture &amp; Irrigation management.</li> </ul>
--	--	---	--

### Overall Project Impact

The project will contribute to the reduction of risks and damages, direct and indirect, of floods in the region of Baalback El Hermel. It will also improve livelihoods through increased availability of water for multiple uses through direct harvesting such as through the water collection reservoir of Deir El Ahmar or through infiltration of the water collected in the flood reservoirs to the water table further to a flood event. The project will also contribute to the increase in green cover in both Aarsal and Ras Baalback. Currently, the Higher Relief Council incurs 2.5m USD as damage compensation further to a flood event; "Flood" will contribute to the reduction of these compensation payments. Finally the project will contribute to the creation of a national flood risk map and of knowledge and expertise in flood risk management.

#### 1. Project Management

Project management took place on a full time basis by the Project Management Unit (PMU). This involved project administration, field visits with the potential bidders for the walls to Ras Baalback, and meetings between subcontractors and stakeholders. During this quarter, five meetings took place with the project's team, ELARD and the new assigned contractors Bureau Hamid Kayrouz (BHK) to review the shop drawings and discuss method statements.

Moreover, the PMU met with the Ministry of Energy and Water (MoEW) and the Ministry of Environment (MoE) to cooperate and coordinate related flood risks and management activities.

In the context of partnership established with the Disaster Risk Reduction (DRR) Project, the Flood Project team held meetings with the DRR staff plan common activities. In order to prepare the "National Flood Hazard Map", the project team helped in providing the necessary resources and materials and participated in the discussion of the outputs concerning disaster mapping.

Further to a visit organized last year for the steering committee members of the Dryland Desertification Centre (DDC) to Deir El Ahmar reservoir, the latter expressed its interest to support this component through a contribution made available from DDC and the Government of Turkey. The fund will be used to compliment the works already done in Deir El Ahmar by extending the irrigation system from the reservoir to the farm lands in order to reach a higher number of beneficiaries.

Furthermore, the international consultant finalized the Flood I evaluation. A copy of the evaluation report will be appended as separate document to this report (*see summary in Annex I*).

## **2. Flood Risks Management:**

A consultant for topographic survey was hired on a retainer basis to support the excavation works component on needs basis. Six site visits were carried out to Ras Baalback to check the boundaries of public lands identified for the establishment of the reservoirs and one visit to Deir El Ahmar pond to assess the stability of the dam.

The selected Contractor, Bureau Hamid Kayrouz (BHK), almost completed the excavation of the RR12 (60,000m<sup>3</sup>) and initiated the excavation of the four sections of the reservoir RR14. The shop drawings for the reservoirs were reviewed by the flood project team. It is anticipated to receive final and corrected shop drawings by mid April.

The procurement process for the selection of the contracting company to undertake the walls construction was finalized and the winning bidder is Bureau Hamid Kayrouz (BHK) who was the most technically compliant coupled with the lowest price. The location, number and the design of the stone walls were prepared by the project team. The final number of work sites is 114 from of which 42 are delivered to the contractor to initiate construction activities.

## **3. Land Cover Improvement:**

- The technical specifications for the reforestation management, irrigation and fences were prepared by the team and offers were collected. A number of 3,000 seedlings purchased and offered for the reforestation activity. Varieties are: *Amygdalus orientalis*, *Pirus syriaca*, *Prunus ursina*, *Quercus calliprinos* and *Quercus infectoria*. The contract of the management and supervision of reforestation activities was awarded to "Ras Baalback Cooperative for Sustainable Agricultural Development". Upon the signature of the reforestation activities contract, and within the framework of awareness campaign, the Coop started the plantation of tree seedlings in the presence of local communities and school children on the 25<sup>th</sup> of March 2012. Till the end of the current reporting period, around 2,200 seedlings were planted and 1,300 seeds sewed. Plantation and sewing operations are on-going. The Coop of Ras Baalback prepared the site before the forestation awareness campaign by digging 1800 holes of 35cm width and 40cm depth and irrigation was carried by the local during the event (the minimum quantity per tree: 12 liters and per seed: 6 liters). During the event, caps, flyers, shovels, hand tools were distributed.

Contracts for the irrigation network and fences signed and execution will be achieved by the end of April 2012.

## **4. Sustainability, Capacity Building, and Awareness Raising:**

A workshop on "best pruning practices of viticulture" was carried out on March 22, 2012 in Deir El Ahmar where approximately 24 local farmers participated; the objective was to increase the wine yard productivity by using the appropriate pruning method which fits best to the existing grape varieties. The training was done on-site to be easily explained and learnt by the farmers. Farmers applied some practical exercises on pruning techniques and raised a discussion on the distinction between traditional and modern agriculture practices. Feedback from farmers show a satisfaction and they ask for additional technical support. They demonstrated a high level of interests and cooperation. As next steps, the expert in close coordination with the project team will prepare a valid irrigation programme based on the meteorological and soil data collected from the area. Also, illustrated brochures including sketches showing the different pruning techniques and irrigation schedule will be prepared and distributed to farmers during the next training day on irrigation practices that will take place in mid of May.

Formatted: Not Highlight

Formatted: Not Highlight

Formatted: Not Highlight



## 5. Implementation Constraints

**Changes of the forestation plot:** the selection of the forestation site was changed by the Municipality of Ras Baalback in order to assure a complete protection and maintenance of the seedlings from grazing. The new selected plot is considered to be easily controlled by the municipality. Would this impact the efficiency of the flood management, assuming that the site selected by the project is the best for mitigating the flood risks?

In the monthly report of March, it is mentioned that the contractor is encountering limitations with regard to the equipment. Please elaborate more on this issue in the this section.

No this will not impact flood management because reforestation activities are undertaken to protect the soil and improve land management, not as a means to directly mitigate flash floods but to protect the top soil in a certain area.

As for the excavation of the flood management structures, due to the security situation in the area, the contractor is hesitant to place too many equipment on site due to the high current risk. The risks verses the speed of implementation is a predicament that the contractor and project management unit are trying to balance out.

## Key Partnerships & Collaboration

A good partnership is established between UNDP, MoA, and the Municipalities of Ras Baalback. The project's working group is meeting whenever needed to discuss all major implementation steps and ensure lessons learnt from the initial pilot project implemented by UNDP and MoA in Aarsal are transferred. The municipalities have become fully involved in the flood works. In Aarsal, the staffs of the municipality undertake routine checks on the reservoirs and perform needed maintenance works. The municipality is undertaking the maintenance of the seedlings planted by ARDA. In Ras Baalback the municipality has supported the project in land selection for the location of the reservoirs, the land for reforestation and all matters related to logistics with the consulting firm doing the design of the flood structures and the contractors bidding for the excavation. As regards the MoA the ministry has extended all the support required by the project in terms of logistics, administration and technical support.

Strong partnerships were developed with the Ministry of Energy and Water and the Ministry of Environment. The MoEW personnel are currently aware of all the activities undertaken by the project and have been providing all the required support and advice needed for its execution.

A strong partnership has been created with the UNDP disaster risk management project where the flood project will work on the development of a flood risk map for Lebanon. The project has been involved in the development of the Standard Operating Procedures for the early response by the army, civil defence and the Red Cross teams in case of a flood event. Finally the project will be involved in developing the national flood risk map for Lebanon.

## IV. Work plan per activity for the 2<sup>nd</sup> quarter in 2012 (Apr – June 2012)

Key Milestones	April	May	June
----------------	-------	-----	------

Wks	1	2	3	4	1	2	3	4	1	2	3	4
<b>1. Project Management and Coordination</b>												
1.1 Technical, Financial and operational mgt.												
1.2 Promotion of synergies with other projects												
1.3 Information exchange and coordination.												
<b>2. Flood Risks Management and Reduction</b>												
2.1 Finalization of excavation works for RR12 reservoir and Initiation of excavation works for RR14 and RR7												
2.2 Walls Construction Contract Signed and initiation of works												
2.3 Monitoring, evaluation & impact assessment.												
<b>3. Land Cover Improvement</b>												
4.1 Forestation cultivation												
4.2 Installation of Irrigation												
4.3 Installation of fences												
4.4 Extension of the irrigation system in Deir El Ahmar (DDC component)												
<b>4.Sustainability, Capacity Building &amp; Awareness Raising</b>												
5.1 Empowerment of target beneficiaries.												
5.2 Awareness raising on flood and water mgt.												
5.3 Capacity building through training.												
5.4 Alternative livelihoods												

## ANNEX ONE

### LRF EVALUATION REPORT

#### EXECUTIVE SUMMARY FLOOD I (by *Fülöp Bence*)

The Consultant started working on the evaluation of the Flood Project just after the end of the 2006 conflict, when the LRF (Lebanon Recovery Fund) initiated the project with the goal of rebuilding the infrastructure in Lebanon and helping in the recovery of local livelihoods. This project is one of the first ones supporting the remote area of Baalback-El Hermel, which lies at the far east of Beirut between Mount Lebanon and the Anti-Lebanon mountain range.

The LRF is supporting programs that prioritize recovery and reconstruction efforts. The funding and the allocation of finances are executed transparently. Since the project was running under the DIM (Direct Implementation Modality) of the UNDP, transparency standards are set and monitored according to the requirements of the UNDP.

A clear sign of recovery of the local society was visible in the concerned areas, as the local villagers jointly stepped into the project.

The communities have also confessed their will to take over the project and support its financial and management needs after the closure of the intervention by the LRF. This is a major success, as it will ensure the long-term feasibility of the results.

The project consisted of two components located in different geographical locations and having different physical aims, while sharing the overall aim of combating desertification and improving the livelihood of the local population.

All materials and data used for this evaluation were supported by the PMU, since the aim of the evaluation is to highlight strengths and weaknesses of the project, from which other ongoing and future projects can benefit. This evaluation report was prepared by an independent international expert, who does not have any involvement and conflicting interests in the concerned subject and geographical area.

The components of the project will be detailed in the following pages.

## ANNEX TWO

### Site Assessment Report

**Objective:** Evaluation of practices applied in viticulture within the area of Deir El Ahmar

**Date:** March 7, 2012

**Place:** Deir el Ahmar - North Bekaa

One of the main expected outputs of the project is to build the capacities of the target groups (municipalities, cooperatives and farmers) on agriculture productivity and how to use water in a sustainable way.

Local farmers consider viticulture for winery as a promised cultivation with high economic value and consequently may be address the socio-economic situation in the area. However, this cultivation still facing many challenges like lack of water for irrigation, inadequate irrigation operations and knowledge gaps on pruning and fertilizing practices. All these lead to reduce the productivity and disturb the sustainability of the agriculture

In order to assist wine growers to overcome this challenge the project team planned to build the capacities and enhance the knowledge of farmers. To align with this output an expert on viticulture was assigned to carry out training for the farmers.

This expert evaluates the suitability of agriculture practices carried out in the area of Deir El Ahmar and assessed the needs of farmers to enhance the productivity.

A meeting was organized with farmers at the center of "Cooperative of winegrowers of Deir El Ahmar". Discussed points were:

- Listing of the existing cultivated varieties
- Agricultural practices (fertilization, irrigation, and pruning) identified
- Existing problems and challenges influencing production) identified
- Suggestions

#### Next steps

- The expert will analyze problems and needs
- Will prepare a technical brochure
- A training will be carried out on the field covering the following topics: plantation, fertilization and pruning practices

## ANNEX THREE

### **Training Session On “Best Pruning Practices of Viticulture” Deir El Ahmar 22/3/2012**

Enhancing agriculture productivity is one of the main expected outputs of the project “Flood Risk Management and Soil Conservation”.

Farmers of Deir El Ahmar consider viticulture for wine production as a promised cultivation with high economic value. They believe this agro business may ameliorate the livelihoods of farmers and address the socio-economic situation; however, many obstacles still facing this agriculture like shortage in water, inadequate irrigation operations and, knowledge gaps on pruning and other practices. All these reduce the productivity and disturb the sustainability of this cultivation.

In order to assist wine growers to overcome these challenges, the project team in collaboration with Mr. Charbel Houbeika, expert on vineyards management, organized a training session on “Pruning techniques for vineyards” on the 22<sup>nd</sup> of March 2102. The session started with a meeting at the municipality center. Twenty-four farmers participated. After the welcoming speech of the head of the municipality, Mr. Milad Akkoury, the site engineers of the project team explained the purpose and the schedule of the training field day.

After that, the participants moved to the on-site demonstration plots, where Mr. Houbeika illustrated the different types of pruning methods and which suit best to the existing cultivated grape varieties and gave a general idea about other vineyard management activities. Farmers applied some practical exercises on pruning techniques and raised a discussion on the distinction between traditional and modern agriculture practices.

As next steps, the expert in close coordination with the project team will prepare a valid irrigation programme based on the meteorological and soil data collected from the area. Also, illustrated brochures including sketches showing the different pruning techniques and irrigation schedule will be prepared and distributed to farmers during the next training day on irrigation practices that will take place in mid of April.

#### Conclusion

The feedback of farmers shows a satisfaction and they ask for additional technical support. They demonstrated a high level of interests and cooperation.

## ANNEX FOUR

### PHOTOS OF PROJECT ACTIVITIES

#### FLOOD RISKS MANAGEMENT



Excavation works of reservoir RR12

#### REFORESTATION ACTIVITY



Preparation of the soil



Participation of the local stakeholders in the forestation campaign



Participation of the children in greening their village



Participation of the UNDP staff in the forestation campaign



Technical support from the UNDP/MoE project on the use of rechargeable solid water



Testing soil humidity



Testing the efficiency of non rechargeable solid water use



Seedlings planted and sowing operations



Local participation in the forestation campaign



Cistern granted to the municipality for the maintenance of the reforested site

#### TRAINING ON BEST VITICULTURE PRUNING PRACTICES



On-site demonstration on best pruning practices



Final shape of pruned grape seedling