



INTERIM PROGRESS REPORT

Reporting UN Organization	: United Nations Development Programme
Country	: Lebanon
Project No.	: 00059666 and 00069789
Project Title	: Flood Risk Management and Water Harvesting for Livelihood Recovery in Baalback-Hermel, phase I and II
RF Signature date	: 10 October 2007
Project Start date	: Phase I: 01 February 2008 Phase II: 20 February 2009
Project Timeframe	: Phase I: Two years Phase II: Three years
Reporting Period	: 1 July – 30 September 2009

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-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 construction of membrane-lined reservoirs to collect unused water from springs, rainfall and snow melts and 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 established on the occasion of the Stockholm Conference, and is in line with the UNDP's development goal of alleviating poverty in rural drylands of the conflict-affected Baalback Hermel area.

Project Phases and Expected Outputs

FRM I 2.8 million USD	<ul style="list-style-type: none"> ➔ Establishment and Implementation of a flood risk management plan over an area of 94 km² in Aarsal and Fakhe region. ➔ Water harvesting in North Bekaa and installation of efficient irrigation networks. ➔ Crop diversification and improved land cover in North Bekaa. ➔ Improved public awareness on flood risks management and training of the target municipality on maintenance of flood management structures.
---------------------------------	--

<p>FRM II 3.8 million USD</p>	<ul style="list-style-type: none"> ➔ Establishment and Implementation of a flood risk management plan over an area of 200 km² in Upper Aarsal and Ras Baalback ➔ Improved land cover in Ras Baalback and upper Aarsal mountains. ➔ Improved soil conservation in Ras Baalback and Aarsal. ➔ Improved public awareness on flood risks management and training of the target municipality on maintenance of flood management structures.
--	---

Project Linkages to National Priorities and Recovery

The National Action Program to Combat Desertification (NAP), which was developed in 2003 by the Ministry of Agriculture and in collaboration with UNDP and GTZ, classified the project's target area (Baalback-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-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

International Partners: Spanish Agency for International Cooperation
German Agency for Technical Cooperation (GTZ)
Arab Center for the Studies of Arid Zones and Dry Lands (ACSAD)

National Partners: Ministry of Agriculture
Ministry of Water & Energy, Bekaa
Local municipalities and communities

II. RESOURCES

	Phase I	Phase II
Total budget approved	USD 2,834,880	USD 3,800,000
Disbursements as for Sept. 2009	USD 1389,008.55	USD 23,873.92
Commitments for next quarter	USD 740,000	USD 30,000
Available Balance:	USD 1,445,872	USD 3,776,126

Budget and Expenditure Breakdown per LRF Category:

CATEGORY	Phase I		Phase II	
	Total Budget (USD)	Total Exp. to date (USD)	Total Budget (USD)	Total Exp. to date (USD)
1. Personnel (Incl. staff and consultants)	200,000	181,330	300,000	900
2. Contracts (Incl. companies, professional services)	250,000	235,892	250,000	-
3. Training (incl. AV printing / production)	50,000	4980.1	50,000	-
4. Transport (local)	20,000	6,820	30,000	-
5. Supplies and commodities (Incl. IT equipment and rental & maintenance)	50,000	9,305	40,000	3,319
6. Equipment (including installation)	2,000,000	846,494	2,800,000	19,350
7. Travel	50,000	1708	40,000	-
8. Miscellaneous	37,833	11,610.45	24,000	-
9. Agency Management Support (7%)	186,048	90,869	266,000	304.92
TOTAL	2,834,880	1,389,008.55	3,800,000	23,873.92

III. Results: Progress per activities

Project Outputs	Activities	Progress to date	Targets for 2009	Status for 2009
1. Project Management and Coordination	1.1 Technical, financial and operational Management. 1.2 Promote synergies with relevant on-going projects in target area. 1.3 Exchange of information and coordination meetings	<ul style="list-style-type: none"> Contract of consultant for field implementation of walls construction renewed for one year. Tendering process for procuring the services of technical back stoppers for flood management (phase II) finalized and team of experts identified. Inception meeting to take place shortly. Procurement of a contractor for the establishment of an irrigation pond in Deir Al-Ahmar in process, expected date of start is early November. Several coordination meetings were made with the project's partners including meetings with GTZ, ACSAD and the Municipality of Aarsal. 	Strengthened coordination with project stakeholders	On-going
			Coordination with Municipality of Ras Baalback for phase II implementation	On-going
			Recruitment of Experts for development of flood mgt plan for phase II.	Completed
			Submission of quarterly progress reports	Three reports submitted, one more planned for Q4
			Recruitment of the contractor for establishment of a water harvesting structure.	Three companies bid. Lowest offer that technically passed selected.
			Termination of ACSAD's contract (phase I).	Planned for Q4
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 Constructions for flood control and prevention. 2.4 Monitoring, evaluation and impacts assessment	<ul style="list-style-type: none"> Excavation work completed for phase I in Aarsal. Total of 8 water collection reservoirs were established ranging in volume between 17,000 to 106,000 m³. Spillways for all reservoirs were also established using concrete and stones according to specifications (Annex III) Works for the establishment of all stone walls, check dams and gabions were completed in August. A total of 161 walls were constructed, the size and volume of some had to be modified after few farmers refused to have the walls on their lands . Final list of established walls and modifications done is shown in Annex II. 	Data collection and identification of target site for phase II.	Planned for Q3 &Q4
			Excavations of 8 flood water collection reservoirs in Aarsal	Completed
			Constructions of 185 stone walls in Aarsal	Completed
			Development of a flood mgt plan for Ras Baalback (phase II)	<ul style="list-style-type: none"> Planned for Q4 Team of Experts identified
			Determine the number and locations of stone walls for phase II.	Planned for Q4

3. Water Harvesting and Irrigation Networks	3.1 Field surveys and assessment of water resources	<ul style="list-style-type: none"> The contractor submitted the specifications, designs and bills of quantities for the 30,000 m³ artificial lake to be established in Deir Al-Ahmar. Seven companies expressed interest in the implementation of the establishment of the lake and associated irrigation networks. Three were technically qualified and lowest price offered was selected. 	Establishment of an artificial irrigation lake in Deir Al-Ahmar based on pilot site selection criteria	Designs and BoQ delivered, expected start in November
	3.2 Identification of water-harvesting sites.		Installation of irrigation networks for target beneficiaries	Delayed till 2010
4. Land Cover Increase and Soil Erosion Reduction	3.3 Constructions of reservoirs and irrigation networks	<ul style="list-style-type: none"> Soil erosion sensitive maps for the watershed of phase I were prepared. Two nurseries were established in Aarsal by ARDA hosting around 25,000 seedlings that are ready to be transplanted in October. The land cover map for the watershed of phase I was updated. 	Forestation in Aarsal with wild fruit trees	More than 25,000 healthy seedlings produced. Forestation to start in October 2009.
	3.4 Selection of beneficiaries and technical advice			
5. Sustainability, capacity building and awareness raising	4.1 Identification of erosion-sensitive areas	<ul style="list-style-type: none"> Awareness press articles were published in two local newspapers, Al-Balad and Al-Mustaqbal. An excavator was ordered for the Municipality of Aarsal to assist them in the maintenance operations of structures and reservoirs following flood occurrences. The Municipality expressed to the PM its deep satisfaction about the project implementation. The local community in Aarsal was impressed by the established structures and is now more positive and optimistic about the role of these structures in flood reduction if and when they happen. 	Building the capacity of Municipality of Aarsal for future maintenance of established flood structures.	Excavator ordered, training workshop planned for December.
	4.2 Establishment of nurseries for seedling production			
	4.3 Crop diversification and increased productivity			
	4.4 Forestation and forage cultivation			
	5.1 Empowerment of target beneficiaries.			
	5.2 Awareness raising on flood and water management.			
	5.3 Capacity building through training.			
	5.4 Alternative livelihoods			

Implementation Constraints

Trouble between Lebanese and Syrian farmers across the border in Aarsal affected the availability of Syrian workers and hence delayed the construction of walls for one week.

Key Partnerships & Collaboration

A good partnership is established between the project and the municipality of Aarsal. Two members from the municipality were always available and ready to assist the project in resolving any dispute or uncertainty coming from local farmers and land owners.

IV. Work plan per activity for the 4th quarter in 2009 (Oct-Dec 2009).

Key Milestones Wks	October				November				December			
	1	2	3	4	1	2	3	4	1	2	3	4
1. Project Management and Coordination												
1.1 Technical, Financial and operational mgt.												
1.2 Promotion of synergies with other projects												
1.3 Information exchange and coordination.												
2. Flood Risks Management and Reduction												
2.1 Data collection and identification of target area.												
2.2 Modelling of target area & generation of maps.												
2.3 Constructions for flood control and prevention.												
2.4 Monitoring, evaluation & impact assessment.												
3. Irrigation Water Harvesting and Networking												
3.1 Field surveys & assessment of water resources												
3.2 Identification of water-harvesting sites.												
3.3 Constructions of reservoirs & irrigation networks												
3.4 Selection of beneficiaries and technical advice												
4. Land Cover Increase & Soil Erosion Reduction												
4.1 Identification of erosion-sensitive areas												
4.2 Establishment of nurseries.												
4.3 Crop diversification and increased productivity.												
4.4 Forestation and forage cultivation												
5.Sustainability, Capacity Building & Awareness Raising												
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 I. Field Views



Hafir No.7 (85,000 m³)



Nursery II in Arsal



Excavations in Hafir No.8



Nursery I in Arsal



Spillway of Hafir No.8



Gabion walls

ANNEX II.

Final list of established walls and performed modifications

Structure No.	Structure Type	Planned Volume	As Built volume	Remarks
1	stone wall	55	64	constructed and accepted
2	stone wall	13	15	constructed and accepted
3	repair wall	75	77	constructed and accepted
4	stone wall	4	6	constructed and accepted
5	stone wall	43	43	constructed and accepted
6	check dam	22	23	constructed and accepted
7	stone wall	80	84	constructed and accepted
8	stone wall	6.5	74	constructed and accepted
9	check dam	14	15	constructed and accepted
10	stone wall	45	45	constructed and accepted
11	stone wall	19	19	constructed and accepted
12	stone wall	30	40	constructed and accepted
13	stone wall	30	30	constructed and accepted
14a	check dam	16	16	constructed and accepted
14b	stone wall	20	20	constructed and accepted
15	check dam	8	46	constructed and accepted
16	check dam	53	0	canceled
17	stone wall	39	20	constructed and accepted
18	stone wall	66	0	canceled
19	stone wall	120	123	constructed and accepted
20	stone wall	16	16	constructed and accepted
21	stone wall	56	60	constructed and accepted
22	check dam	46	50	constructed and accepted
23	stone wall	32.5	31.5	constructed and accepted
24	check dam	5	5	constructed and accepted
25	stone wall	49	50	constructed and accepted
26	stone wall	26	0	canceled
27	check dam	11.5	15	constructed and accepted
28	stone wall	51	53	constructed and accepted
29	check dam	46	0	canceled
30	stone wall	4.5	0	canceled
31	stone wall	25	0	canceled
32	0	0	0	no structure
33	Trench	11	15	accepted and excavated
34a	repair wall	42	43	constructed and accepted
34b	Gabion	100	119	constructed and accepted
34c	repair wall	13	15	constructed and accepted
35	check dam	11	15	constructed and accepted
36	stone wall	35	39	constructed and accepted
37	stone wall	115	118	constructed and accepted
38	stone wall	180	182	constructed and accepted
39	stone wall	190	213	constructed and accepted
40	stone wall	67.5	70	constructed and accepted

41	check dam	28	30	constructed and accepted
42	Gabion	112.5	129	constructed and accepted
43a	Road	0	0	done and accepted
43b	check dam	27	29	constructed and accepted
44	stone wall	23	22	constructed and accepted
45	stone wall	10.5	14	constructed and accepted
46	stone wall	60	124	constructed and accepted
47	check dam	46	55	constructed and accepted
48	stone wall	20	0	merged with another structure
49	stone wall	135	152	constructed and accepted
50	stone wall	40.5	40	constructed and accepted
51	stone wall	20	23	constructed and accepted
52	stone wall	15	15	constructed and accepted
53	stone wall	30	31.5	constructed and accepted
54	stone wall	20	0	canceled
55	repair wall	20.5	21	constructed and accepted
56	stone wall	30	30	constructed and accepted
57	stone wall	11	0	canceled
58	stone wall	18	0	merged with another structure
59	stone wall	18	0	merged with another structure
60	repair wall	11	31	constructed and accepted
61	stone wall	13	13.5	constructed and accepted
62	Gabion	60	75	constructed and accepted
63	Gabion	12	8	constructed and accepted
64	stone wall	125	119	constructed and accepted
65	repair wall	65	65	constructed and accepted
66	check dam	9	20	constructed and accepted
67	Gabion	25	27	constructed and accepted
68	stone wall	16	17	constructed and accepted
69	repair wall	21	26.5	constructed and accepted
70	stone wall	44	51	constructed and accepted
71	Gabion	72	0	canceled
72	repair wall	120	0	canceled
73	stone wall	90	90	constructed and accepted
74	stone wall	6.5	0	canceled
75	stone wall	32.5	33	constructed and accepted
76	stone wall	37	0	canceled
77	stone wall	10	0	canceled
78	stone wall	25	0	canceled
79	stone wall	35	0	canceled
80a	repair wall	120	136	constructed and accepted
80b	stone wall	49	80	constructed and accepted
81	Gabion	14	0	canceled
82	check dam	9	11	constructed and accepted
83	stone wall	24	0	canceled
84	stone wall	33	0	canceled
85	stone wall	41	0	canceled
86	stone wall	67	0	canceled
87	stone wall	11	0	canceled
88	repair wall	21	32	constructed and accepted
89	stone wall	79	80	constructed and accepted
90	Gabion	250	0	canceled

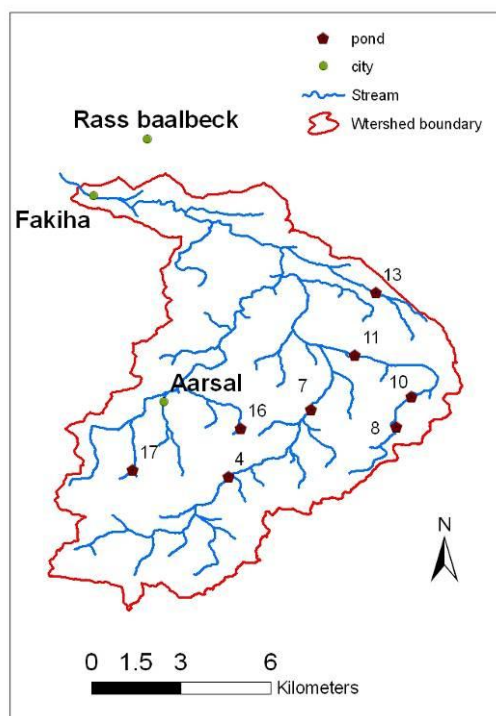
91	Gabion	52.5	0	canceled
92	Gabion	30	67	constructed and accepted
93	stone wall	25	30	constructed and accepted
94	Gabion	25	45	constructed and accepted
95	stone wall	15	105	constructed and accepted
96	Gabion	139	139	constructed and accepted
97a	stone wall	30	30	constructed and accepted
97b	Gabion	7	10	constructed and accepted
97c	stone wall	57	57	constructed and accepted
98	Gabion	150	156	constructed and accepted
99	check dam	52	55	constructed and accepted
100	check dam	150	161	constructed and accepted
101	repair wall	21	21	constructed and accepted
102	check dam	21	22	constructed and accepted
103	check dam	16	52	constructed and accepted
104	check dam	14.5	14.5	constructed and accepted
105	check dam	32	32	constructed and accepted
106	check dam	13	51	constructed and accepted
107	check dam	30	30	constructed and accepted
108	check dam	21	21	constructed and accepted
109	Gabion	19	36	changed to check dam
110	Gabion	20	84	constructed and accepted
111	check dam	10	34	constructed and accepted
112	stone wall	10	45	constructed and accepted
113	repair wall	85	85	constructed and accepted
114	repair wall	22	23	constructed and accepted
115	stone wall	48	48	constructed and accepted
116	stone wall	84	84	constructed and accepted
117	stone wall	37	37	constructed and accepted
118	stone wall	30	30	constructed and accepted
119	Gabion	37.5	37.5	constructed and accepted
120	check dam	29	67	constructed and accepted
121	check dam	5	20	constructed and accepted
122	Gabion	38	38	constructed and accepted
123	repair wall	42	43	constructed and accepted
124	repair wall	46	169	constructed and accepted
125	stone wall	12	0	merged with another structure
126a	repair wall	32	0	merged with another structure
126b	stone wall	12	0	merged with another structure
127	Gabion	97	0	merged with another structure
128	Gabion	13.5	0	merged with another structure
129	check dam	37.5	41	constructed and accepted
130	stone wall	15	18.5	constructed and accepted
131	stone wall	30	31	constructed and accepted
132	Gabion	122.5	0	canceled
133	stone wall	51	0	canceled
134	stone wall	45	49	constructed and accepted
135	check dam	48	66	constructed and accepted
136	check dam	63	73	constructed and accepted
137	repair wall	19.5	19	constructed and accepted
138	repair wall	25	28	constructed and accepted
139	check dam	13	56	constructed and accepted

140	stone wall	32	0	canceled
141a	Gabion	13	13	constructed and accepted
141b	repair wall	10	10	constructed and accepted
142	stone wall	5.6	0	canceled
143	check dam	26	52	constructed and accepted
144	check dam	17.4	17.4	constructed and accepted
145	stone wall	19.5	0	canceled
146a	check dam	35	0	canceled
146b	stone wall	47	0	canceled
147	check dam	17	0	canceled
148	check dam	34	0	canceled
149	stone wall	72	75	constructed and accepted
150	repair wall	96	146	constructed and accepted
151	repair wall	200	205	constructed and accepted
152	check dam	6	25	constructed and accepted
153	check dam	34	70	constructed and accepted
154	check dam	6	15	constructed and accepted
155	stone wall	12	15	constructed and accepted
156	check dam	25	0	canceled
157	check dam	15.5	36	constructed and accepted
158	check dam	24	25	constructed and accepted
159	check dam	10	10	constructed and accepted
160	stone wall	16	17	constructed and accepted
161	stone wall	112	114	constructed and accepted
162	stone wall	10	12	constructed and accepted
163	stone wall	7	10	constructed and accepted
164	stone wall	6	6	constructed and accepted
165	stone wall	11	11	constructed and accepted
166	check dam	66	69	constructed and accepted
167	check dam	4	22	constructed and accepted
168	check dam	40.5	96	constructed and accepted
169	stone wall	20	21	constructed and accepted
170	Gabion	44	52	constructed and accepted
171	stone wall	43	0	canceled
172	check dam	15	18	constructed and accepted
173	stone wall	66	72	constructed and accepted
174	stone wall	132	142	constructed and accepted
175	check dam	10.5	14	constructed and accepted
176	stone wall	10	26	constructed and accepted
177	check dam	42	43.5	constructed and accepted
178	check dam	41	46	constructed and accepted
179	Gabion	17	18	constructed and accepted
180	Gabion	28	29	constructed and accepted
181	Gabion	8	12.5	constructed and accepted
182	Gabion	36	49	constructed and accepted
183	check dam	14	16	constructed and accepted
184	check dam	39	44.5	constructed and accepted
185	stone wall	15	16	constructed and accepted
	Totals	7833	7535.4	

ANNEX III.

Completed list of excavations and final volume of each water collection reservoir, Phase I.

Hafer number	excavated soil material (1000 m ³)	excavated rocky material (1000 m ³)	Total excavated volume (1000 m ³)
4	18.6	11.4	30
7	86	0	86
8	18	0	18
10	13	4	17
11	37	5	42
13	106	0	106
16	12.2	5.2	17.4
17	9.2	4.4	13.6
Total	300	30	330



Locations of Reservoirs