

## Lebanon: Irrigation rehabilitation and Modernisation Project

Item	Assessment Remarks	Rating
<b>Country &amp; Project Name</b>	<b>Lebanon - Irrigation rehabilitation and Modernisation Project (IRMP)</b>	
Loan Number	370-LB	
ID Number	370	
Board Date	December 1994	
Effectiveness Date	January 1996	
Original Closing Date	December 2001	
Final Closing Date	September 2005	
Total Project Cost USD(M)	USD 7.495 M	
IFAD loan USD (M)	USD 6.877 M	
Cofinanciers (if any)	WB (IBRD- World Bank: International Bank for Reconstruction and Development) USD 65.5 M - GoL: USD 0.617 M	
Implementing Agency	Ministry of Agriculture	
Principal Components	The overall objective is to increase agricultural incomes, welfare and employment of small farm households in previously neglected areas where irrigation schemes are being rehabilitated, and to achieve a sustainable and improved management of water resources. The IFAD intervention has the additional and complementary objectives of: (a) strengthening essential agricultural services that would maximize the benefits from increased availability of irrigation water; (b) assisting isolated farming families to improve their incomes through the provision of sustainable water resources, and (c) improving the socio-economic prospects for rural women by the systematic expansion of services targeted for women. The WB financed a) irrigation rehabilitation and b) institutional strengthening of irrigation and water management institutions components. IFAD-financed components are complementary to WB-financed components: a) agricultural extension; b) small-scale irrigation; c) applied research; d) quality control of agricultural inputs and pesticides residues; e) rural women's activities; f) strengthening of MOA administration.	
<b>Project Performance</b>		
Design	Project design foresaw complementary activities between the WB and IFAD. Both organisations' operations were envisaged within the country development strategy. Management of the overall IRMP was responsibility of the Council for Development and Reconstruction (CDR). The MOA, through an internal Project Coordination Committee (PCC) and the Project Coordination Unit (PCU), would be responsible for the coordinated implementation of IFAD components, including the financial and physical monitoring of project progress. Both these assumptions proved difficult to set in practice and, together with lack of empowerment of implementing agencies, slowed down implementation. This was a problem encountered in several other projects implemented in Lebanon during the same period.	3
Implementation	The project involved different agencies/institutions/directorates in its implementation, and suffered from the lack of cooperation and coordination between the PCU and the executing agencies. The expected synergies between irrigation rehabilitation and agricultural development activities did not fully materialise until the last years of project implementation. There was considerable delay in the establishment and adequate staffing of the PCU by MOA due to procurement procedures. Implementation of the agricultural component picked up after some years, but it had then to focus mainly on procurement matters in order to make up for accumulated delays. In most schemes, agricultural extension activities started up at a late stage, which contributed to delays in achieving full benefits from the project at farm level. The Agricultural Research Institute of Lebanon (ARIL) activities were successful and sustainable. The MOA did not keep systematic records or other relevant information to monitor and evaluate project impact. The original project cost estimated by the WB was reallocated by IFAD from USD 10 M to USD 9.4 M, reducing the budget for small-scale irrigation components (USD 3.2M to 2.8M) and increasing the rural women development budget (USD 0.7M to 1.1M). Budget for other components remained unchanged. The contribution of the GoL covering recurrent costs was reduced from USD 1.6 M to USD 0.6 M. IFAD funding was focused on activities within the responsibility of the MOA.	3
Relevance	The project objectives were clear and focused on essential priorities for agriculture and rural development in Lebanon. The project was responsive and relevant to the GoL strategy and development priorities. Indeed, the IRMP was to support the irrigation sub-sector component of the Government's programme. It was also relevant to IFAD's strategy in the country and was also in line with WB strategy in the country. However, the rehabilitation/modernisation of the irrigation networks should have been more relevant to the actual shortage of water in many areas. The effective modernisation of the irrigation networks should have been designed and implemented within an integrated project or specific component, instead of rehabilitating open canal systems.	4

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Effectiveness	The main physical targets of the project have been quantitatively achieved at project final closing. The physical rehabilitation of the major irrigation schemes as well as the small and medium schemes, and the programme of "hill lakes" will improve the availability of irrigation water at the farm level. This will remove a significant constraint on the capacity of small farmers to increase their agricultural productivity, production, and income levels which is the main objective of the project. However, <u>further actions are required</u> to ensure increased water use efficiency and consolidate the <u>potential</u> agricultural benefits. Indeed, some of the structures are not of the expected quality. Due to implementation delays, the project can be considered on the whole as having just completed the "implementation stage" and now started its "development stage" with the effectiveness of the project activities now becoming visible on the income of the beneficiaries. <u>A specific development programme and further activities would be needed to reach sustainability</u> of the activities performed during the actual phase of the IFAD-financed IRMP.	4
Efficiency	The project was implemented more slowly than planned and it was extended twice by 3 and half years. Following extension total disbursement reached about 80% of the reallocated budget. Efficiency varied according to the components. Applied research and quality control achievements are higher (more than 100% of the disbursements), as they were efficiently carried out by the Agricultural Research Institute (ARIL); whereas disbursement for Technology Transfer and Extension (TTE), rural development and small-scale irrigation schemes components reached only around 2/3 of the reallocated budget. Hill lakes investment costs have been much higher than expected (average USD 14 670/ha compared to standard costs ranging from USD 5 000/ha to an exceptional 10 000/ha). The IRR is negative due to high investment costs. The IRR would have reached around 10% only if the investment costs were 30% lower.	3
<b>Partner Performance</b>		
IFAD	IFAD' performance in identification, preparation and appraisal of the project was responsive to the country's reconstruction needs. Still, more resources should have been made available during project preparation for establishing a proper database which, through the M&E system, would have allowed the assessment of project impact. Moreover, project design did not address the coordination issues among implementing institutions' activities which had already been underlined by previous projects in the country; this led to the inability to create the necessary complementary action among the different agencies foreseen at design. IFAD carried out two follow-up missions in 2002, which involved consultants specialised in irrigation, M&E and rural women development.	2
Cooperating Institution	WB's performance in identification, preparation and appraisal of the project was responsive to the country's reconstruction needs. Still, as for IFAD, previous projects experiences were not taken into account, leading to implementation challenges. WB's supervision missions were in general satisfactory (regular, appropriate skill mix and good staff continuity). Still, some technical issues should have been solved through detailed sites visits, especially during the construction of the hill lakes. The Bank maintained a good relationship with the implementing agencies. During the initial stages of implementation, Bank provision was mostly concerned with procurement and administration issues. Only in the last year of project implementation, Bank supervision insisted on the need for M&E of the project impact.	3
Government	GOL mainly contributed to recurrent costs and disbursed 97% of the reallocated budget. The borrower and implementation agencies' performance was not entirely satisfactory in the early years of project implementation, due to administrative delays in procurement procedures, managed by CDR and not by the direct implementing agencies (MOEW, LRA and MOA). The project required a strong and continuous coordination between agencies which was the main cause for implementation delays. The CDR performed its role in a professional way during the last years of project implementation. The MOA failed to implement a M&E system. The non-availability of a proper database and the inadequate functioning of the monitoring system contributed to the difficulties in impact evaluation and the ability to optimise the future investment programmes.	3
NGO/Other	Civil works were sub-contracted to the <u>private sector</u> . Due to the difficult economic situation in the country and the decreasing demand for construction services, some contractors bid prices were low compared to the engineering costs estimates. As a result of these unrealistically low bids, some of the selected contractors were not able to perform adequately, which has created problems in the implementation of some small and medium schemes. Similarly, in the absence of a formula for price revision during contract execution, steep increases in market prices of construction materials resulted in a slowdown of contractors' works during the last 18 months of project execution when project was at full speed. The American University of Beirut (AUB) was awarded two contracts under the Agricultural extension and technology transfer component. No qualitative data resulting from AUB activity is available, as its final report is reported on as academic and covering too many topics, with no recommendations. Although AUB's activities are substantial, the final outcome is not satisfactory.	2

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Cofinancier(s)	The WB financed the irrigation rehabilitation component and the related strengthening of irrigation and water management institution.	3
<b>Combined Partner Performance</b>	<b><i>Overall performance of the partners can be considered as partly unsatisfactory in spite of the efforts made to increase project effectiveness throughout implementation. The implementation delays during the early years of the project were due to the limited coordination between technical implementation agencies. Not enough was done by implementing agencies to set a M&amp;E system and lessons from other programmes' experiences in the country were not applied.</i></b>	3
<b>Rural Poverty Impact</b>		
Physical Assets	Rehabilitation and construction works have only been recently completed, and physical targets have overall been satisfactorily achieved (irrigation schemes, hill lakes, laboratories, extension offices, greenhouses). About 17 small and medium irrigation schemes were selected and rehabilitated. Still, for small scale irrigation schemes, the outputs of this component are <u>modest</u> not only at the implementation stage but also at appraisal, design and supervision level. Rehabilitation works were not optimal and instead of rehabilitating old systems, modernisation of the irrigation networks would have been more profitable and sustainable. The investment costs per ha are too high, as well as the investments per m <sup>3</sup> . The lining of the hill lakes has not been properly designed and implemented. Most of the hill lakes are not yet used by the farmers as their construction is not completed. Consequently, although the project has achieved its targets, these did not fully respond to what the beneficiaries' irrigation preferences and do not reflect the expected quality.	3
Financial Assets	Due to delays in the completion for rehabilitation and construction works, and to the late start of project support to agricultural extension services, the actual impact of the project on production and incomes cannot yet be fully verified. Still, the project's implementation afforded more stability to rural regions where the increase of farmers' average income is progressively improving, due to provision of direct accessible water and adoption of improved agricultural techniques.	3
Food Security	The PCR provides no information regarding the project impact on food security.	NR
Environment	The project was expected to have a positive impact on the environment, as it would reduce the overuse of groundwater resources by enhancing the availability of surface irrigation water, and also reduce potential hazards associated with the misuse of pesticides and fertilizers by promoting integrated pest management and other appropriate production techniques. Main positive environmental effects of the project are: a) the rehabilitation and modernisation of irrigation infrastructure and extension of water use efficiency methods reduced water losses in areas short of water resources; b) organic farming demonstration and extension of Integrated Pest Management (IPM) practices for major irrigated crops led to reduction in the use of environmentally damaging pesticides; c) strengthening of the soil and water laboratories allowed the production of recommendations for reducing excessive use of fertilizers. The impact on the static water table in the aquifers is insignificant since the area covered by the project is small.	4
Human Assets	The project allowed for improved water supply in the project area.	3
Soc. Cap. & Emp.	The PCR contains very little information on the social impact of the project, which refers to the training provided to women: training sessions were organised for rural women through a specific contract, that was signed with two institutions to perform activities including training on management, administration, finance and marketing, as well as specific training on agro-food processing and quality production. Still, technical assistance and training have been quantitatively inadequate. Farmers were also trained in organic farming, which they soon abandoned, and the use of Integrated Pest Management methods.	2
Ag. Productivity	Project support to agricultural extension services started only in 2005 in most schemes; therefore, the actual impact of the project on agricultural production cannot yet be fully verified. However, there is evidence that crop yields and intensities have started to increase in several schemes, and that the area cultivable in rehabilitated schemes has also increased. However, the profitability of the hill ponds is too low.	3
Inst. & Serv.	As a whole, the project had a modest institutional development impact. The project performed satisfactorily in technically and administratively strengthening the MOA, and in strengthening its capacity in agricultural extension, applied research and support to rural women. Still, most of MOA staff involved in project implementation were hired on fixed-term contracts which came to an end at project closure, although it is expected that some of them will be now recruited on a permanent basis. ARIL performed highly in the implementation of the Applied Research and quality control components, and in the rehabilitation of greenhouses and laboratories used to undertake important activities and quality control of pesticides. Moreover these activities have increasing revenues of ARIL, which is in line with Government objectives. The project also funded attendance of ARIL researchers to international congresses, improving performance. ARIL also hired 33 research assistants and technicians which enabled the development of a substantive	4

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	research programme, which allows the institution to carry out sustainable activities. These personnel have now been recruited on a permanent basis, ensuring sustainability of activities. The institutional impact of the project on the Litani River Authority (LRA), who is responsible for the operation and maintenance of the irrigation schemes in the Litani River basin is also highly likely as the organisations has the required staff with adequate experience.	
Markets	Marketing constraints are mainly due to the high production costs and particularly water costs. The improvement of water use efficiency and productivity will result in the reduction of the production costs for farmers and therefore will improve the competitiveness of the Lebanese agricultural and food products.	3
<b>Project Impact</b>	<b><i>The project achieved its physical targets as regards irrigation schemes and water availability for population in remote areas. This has had a modest impact on the target population's livelihoods, at least so far since the project had just finished implementation at the time of the PCR and its development phase was yet to start. Moreover, the structure do not always reflect farmers' needs and are not of the expected quality. Lastly, the project failed to produce the expected results as regards the promotion of socio-economic prospects for rural women.</i></b>	<b>3</b>
<b>Overarching Factors</b>		
Innovation	In the irrigation sector, no specific innovation has been promoted by the project. The main innovative features of the project are related to: a) the organic farming demonstrated and extended with activities carried out by AUB, which proved unsustainable; b) research programme implemented by ARIL concerning in particular water use efficiency, tissue culture, integrated pest management and pesticides quality control.	2
Replicability and Scaling-up	The organic farming innovation is not replicable since most of the farmers trained have renounced to this technique because of unsatisfactory net profit. For the research activities, the results are under application by farmers through the extension services.	3
<b>Innovation, Replicability and Scaling-up</b>	<b><i>Project innovations are limited and only partially replicable. Much work would need to be made to allow for replicability.</i></b>	<b>2</b>
Sustainability and Ownership	In general, a specific development programme based particularly on the training of the farmers and the improvement of water use efficiency by modernising the irrigation distribution network and equipment at the plot level would be needed to reach sustainability of the activities performed during the actual phase of the IFAD-financed IRMP. The various components present different sustainability levels. The sustainability of the small-scale irrigation component is moderate. Applied research and quality control component can be considered as highly sustainable as the investment in construction and rehabilitation of laboratories, greenhouses, and experimentation fields have built up a reliable basis enabling the Agricultural Research Institute of Lebanon (ARIL) to undertake important research activities in the field of irrigation and water use efficiency and agriculture techniques. The RWDD is not sustainable as it is no longer active.	3
Targeting	Project target group consisted of small farmers in previously neglected areas where irrigation schemes are being rehabilitated. IRMP was expected to target about 33,000 farm households, 21,000 in the five major irrigation schemes and 12,000 in the small and medium schemes. IFAD intervention would specifically target those farmers holding 1.2 ha or less and earning low incomes (these amounted to 20,000 households - 150,000 people). Project also targeted poor disadvantaged rural women through the programme of income-generating activities. Furthermore, it targeted small farmers in isolated communities outside the irrigation systems, through the programme of hilly lakes.	3
Gender	The rural women activities outcome is unsatisfactory. Only 58% of the budget have been disbursed although the reallocated budget compared to SAR proposed budget has been sharply increased. The insufficient efficiency of the outcome of this component is almost related to institutional reasons as the role of the RWDD was not sustained. On another hand technical assistance and training have been quantitatively inadequate as only half of the budget has been disbursed.	2
<b>Overall Performance</b>	The project performance is rather low even if it has achieved its targets in physical terms, since the quality of the infrastructures built is lower than expected and the irrigation networks should have been more relevant to the actual water shortages in many areas. To this aim, applying a participatory approach would have been appropriate. As regards the achievement of the project development objective, although the PCR refers to small increases in beneficiaries' livelihood, there are no data to evaluate it because the project lacked an M&E system and, according to the PCR, because the project has just finalised its implementation phase and has yet not entered its development phase. Moreover, project performance was weak for gender related activities.	<b>3</b>

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PCR Quality		
Scope	The PCR covers all elements outlined in the PCR guidelines. Still, the stakeholder workshops were not undertaken, and the report is the result of a short mission due to the political situation in Lebanon when it took place. The PCR does not include the Annex on impact on the environment.	4
Quality	The PCR is very repetitive, as it analyses every project component individually in each section, making it difficult to find and select the relevant information throughout the text. Moreover, since at the time of PCR writing the project had just completed its "implementation phase" because of project delays, the assessment is made according to the likely project impact rather than to what had actually been achieved by then.	2
Lessons	Lessons are relevant to IFAD future operations in Lebanon but have limited scope.	3