

**MANAGEMENT RESPONSE TO  
REQUEST FOR INSPECTION PANEL REVIEW OF THE  
PROPOSED LEBANON: GREATER BEIRUT WATER SUPPLY PROJECT  
(GBWSP)**

Management has reviewed the Request for Inspection of the proposed Lebanon: Greater Beirut Water Supply Project (GBWSP), received by the Inspection Panel on November 4, 2010 and registered on November 10, 2010 (RQ10/09). Management has prepared the following response.



## CONTENTS

<b>Abbreviations and Acronyms .....</b>	<b>iv</b>
<b>Executive Summary .....</b>	<b>v</b>
<b>I. INTRODUCTION.....</b>	<b>1</b>
<b>II. THE REQUEST.....</b>	<b>1</b>
<b>III. ELIGIBILITY .....</b>	<b>2</b>
<b>IV. PROJECT BACKGROUND.....</b>	<b>5</b>
<b>V. MANAGEMENT’S RESPONSE.....</b>	<b>9</b>

### Annexes

Annex 1.	Claims and Responses
Annex 2	IBRD Map 38239
Annex 3	IBRD Map 38240
Annex 4	Email from Requesters’ Representative regarding Bank Response
Annex 5	Cost Comparison Table
Annex 6	Email Response from Bank to Requesters’ Representative
Annex 7	MNA Disclosure Compliance Memorandum
Annex 8	Email from GoL responding to Requesters’ Representative
Annex 9	GoL-prepared Alternate Water Supply Source Matrix
Annex 10	CDR’s Farmer Family Letter
Annex 11	CDR’s Past Expropriations Letter
Annex 12	GoL Decree 14522

## **ABBREVIATIONS AND ACRONYMS**

BMLWE	Beirut Mount Lebanon Water Establishment
CDR	Council for Development and Reconstruction
ESIA	Environmental and Social Impact Assessment
GBR	Greater Beirut Region
GBWSP	Greater Beirut Water Supply Project
GoL	Government of Lebanon
LRA	Litani River Authority
MCM	Million cubic meters
MNA	Middle East and North Africa
MoEW	Ministry of Energy and Water
PAD	Project Appraisal Document
PID	Project Information Document
RAP	Resettlement Action Plan
SESIA	Strategic Environmental and Social Impact Assessment

## **EXECUTIVE SUMMARY**

On November 10, 2010, the Inspection Panel registered a Request for Inspection, (hereafter referred to as “the Request”), concerning the Greater Beirut Water Supply Project (GBWSP) proposed to be financed by the International Bank for Reconstruction and Development (the Bank).

### ***The Project***

The Project is not under implementation yet. Loan negotiations for the Project were successfully concluded between the Bank and the Government of Lebanon on September 30, 2010. The Project is scheduled to be considered by the Board on December 16, 2010.

The objective of the proposed Project is to increase the provision of drinking water to the residents in the Project area within the Greater Beirut Region (GBR), including those in the low-income neighborhoods of Southern Beirut, and to strengthen the capacity of the Beirut Mount Lebanon Water Establishment (BMLWE) in utility operations. This will be achieved by conveying water from the existing Joun Reservoir (which combines water from the Litani River and the Awali River) through a system of tunnels to the Greater Beirut Region (see map in Annex 2).

Water supply in the Greater Beirut Region, which is home to nearly half of the total population of Lebanon, is unreliable and drops to as little as three hours per day in the summer season. The proposed Project will directly impact approximately 1.2 million residents within the Greater Beirut Region by putting in place the intake, treatment, conveyance, storage and distribution infrastructure required to meet the immediate and pressing demand for 250,000 m<sup>3</sup>/d of drinking water in the Project area.

The Project components are (i) Construction and construction supervision of bulk water supply infrastructure: conveyer tunnels, water treatment plant, transmission pipelines and storage reservoirs; (ii) Design, construction and construction supervision of Supply Reservoirs, Distribution Network and Metering; and (iii) Capacity building and strengthening of the utility providers and of the Ministry of Energy and Water (MoEW) for Project oversight and carrying out of high priority national studies in alignment with the priorities set forth in the National Water Sector Strategy currently under preparation by the Borrower.

The Project’s technical design, including the water supply source, was deemed to be the most feasible and it meets the objective of the Borrower to urgently address the acute water supply situation in the Greater Beirut Region.

### ***Request for Inspection***

The request was submitted by Mr. Fathi Chatila on behalf of 51 residents of the Greater Beirut Region, including himself.

Mr. Chatila, as the Requesters' Representative, makes various claims regarding the technical design, the preparatory procedures and the potential impact of the GBWSP. In particular, he claims that the consultations were inadequate, that design alternatives not considered, and that the Project would lead to an increase in water prices for consumers, provide them with potentially polluted water and divert water resources away from farmers.

***The core of the Request, however, is a critique of the water supply source chosen for the GBWSP and a proposal to implement an alternative project designed and promoted by the Requesters' Representative.*** The Requesters' Representative suggests that an alternative water supply source in the form of a dam on the Damour River should be built instead of using the existing water source at the Joun Reservoir. The Requesters' Representative had carried out hydrogeological studies for a proposed Damour dam in 1996 and submitted them at various occasions to government agencies without acceptance so far. The Requesters' Representative argues that his solution would cost less than the GBWSP and would also provide water of better quality.

The Request also suggests that a full feasibility study for the proposed Damour dam project should be carried out and further "strongly proposes" to have the Requesters' Representative "to act as the consultant and supervisor for this project."

### ***Management Response***

Management had an extensive exchange of information with the Requesters' Representative on the issues raised by him prior to the Request for Inspection and is fully aware of them. As acknowledged by the Requesters' Representative himself, the Bank has quickly responded to his queries and he found the Bank's response "very satisfactory". Management also facilitated his interaction with the government agencies in charge of the Project.

The issues raised by the Requesters' Representative were carefully analyzed during Project preparation. However, Management has concluded that the Requesters' Representative's claims are largely unfounded and that the representation of facts supporting his claims are selective, only partly correct and influenced by his explicit interest to have a dam constructed on the Damour River.

***Management disagrees that the harmful events cited by the Request will result from the Project. There is no tariff increase proposed under the GBWSP; the water being delivered under the Project will be treated following national and international quality standards; provisions have been included in the project to mitigate potential economic and social impacts of the GBWSP; and no water will be diverted away from irrigation. The Project meets the least cost approach and does not preclude other long-term measures for water supply that are under review.***

As far as the proposed dam on the Damour river is concerned, Management would like to point out that the Requesters' Representative's cost analysis is flawed and unde-

reestimates the likely cost of the dam. Moreover, several studies have looked into the viability of the proposed Damour dam project and came to different conclusions, thus there is no final finding on its viability.

Some issues raised by the Requesters are based on claims about strong linkages between the GBWSP and the Bisri dam. Management wishes to clarify that the GBWSP is part of a phased approach to meeting water needs that does not preclude any of the other proposed projects for long term water supply, including the proposed Bisri Dam and a possible Damour dam. However, the Bisri dam is not a component of the GBWSP nor is it relevant to, or necessary for, the achievement of the objectives of the GBWSP. The Bank has neither received an official request nor has it committed to funding the proposed Bisri Dam.

Management maintains that the approach chosen for the GBWSP is the right one given current conditions in the Project area. The technical solution chosen for the implementation of the GBWSP is the most cost effective and in line with the Government's priorities to provide a speedy solution to the existing water supply shortage in the Greater Beirut Region.

The GBWSP is considered to be the first in a series of priority water infrastructure projects to be implemented by GoL. Following review, the GoL decided to proceed with implementing the GBWSP and to continue in parallel the review of feasible options, including the Bisri dam, Janna dam and Damour dam for long-term water supply sources to the GBR.

In Management's view the Request for Inspection raises the following eligibility issues:

***Firstly, the Requesters are not "project affected persons" because they cannot demonstrate that their rights or interests have been or are likely to be directly affected.*** The Requesters are unable to support a claim that they are or will be directly and materially affected by either the water supplied through the Project, or by the construction or operation of Project related infrastructure, as required under the Resolution. All claims of harm included in the Request for Inspection (water pollution, high water tariffs, involuntary resettlement and diversion of water) do not relate to, nor result in a material adverse effect on the Requesters. None of the Requesters will lose their land under this proposed water supply project. Moreover, only six out of the 51 Requesters live in the project area (see map in Annex 3).

***Secondly, the Requesters' Representative fails to meet the eligibility requirement of an "affected party."*** Management is unable to ascertain a credible basis upon which the Requesters' Representative, who himself is a Requester, can claim that he is an "affected party" whose rights or interests have been or are likely to be directly affected by a failure by the Bank to follow its operational policies and procedures. ***The Request for Inspection is fundamentally about the Requesters' Representative's project design pre-***

*ferences. In the words of the Request, the alleged harm that is likely to occur could be avoided “by implementing Mr. Fathi Chatila’s project (submitted since 1996) which calls for storing water of the Damour River by erecting a dam and conveying the water to Greater Beirut.”*<sup>1</sup> In the absence of harm or the likelihood of harm, this background raises a question as to whether this Request represents the pursuit of a vested interest on the part of the Requesters’ Representative.

*Finally, the Requesters’ Representative had sought an agreement with the implementing government agency to obtain a consultancy services contract for himself related to the proposed Damour dam, which the government agency did not accept.*<sup>2</sup> *Hence, the Request is ineligible on the grounds that the Inspection Panel does not have subject matter jurisdiction over procurement-related disputes, from which it is explicitly barred by the Resolution.*<sup>3</sup> Specifically, this Request appears to be an expression of the Requesters’ Representative’s dissatisfaction with the Borrower’s choice of design as well as its decision not to procure his technical services due to a dispute over the proposed rate of compensation. Moreover the Requesters’ Representative is using the current Request for Inspection to propose again that he should be awarded the role of “consultant and supervisor” for the proposed Damour dam.

In Management’s view the Request for Inspection is fundamentally about the Requesters’ Representative’s project design preferences. The fact that he was not accepted for a consultancy contract to pursue such preferences has compromised the eligibility and validity of this Request for Inspection.

Management is confident that the Bank has made diligent efforts to apply its policies and procedures in the context of the preparation of this Project. In Management’s view, the Bank has followed the policies and procedures applicable to the matters raised by the Requesters’ Representative. Management believes that the Requesters’ rights or interests have not been and will not be adversely affected with respect to the GBWSP.

Management did discover disclosure delays and oversights for some of the GBWSP documentation, both by the Bank and the Client, which were corrected promptly. Independently from this project Management will employ additional efforts to enhance monitoring of effective compliance with the disclosure requirements.

Going forward Management will carry out a Strategic Environmental and Social Impact Assessment (SESIA) to review the feasibility studies, environmental and social impacts and costs of the various alternatives for longer-term water supply (while GBWSP

---

<sup>1</sup> Request for Inspection, page 2.

<sup>2</sup> Letter dated June 25, 2001 from the Requester’s Representative to CDR and letter dated September 21, 2001 from CDR to the Requester’s Representative.

<sup>3</sup> See paragraph 14 (b) of the Board Resolution which established the Inspection Panel: *In considering requests under paragraph 12 above, the following requests shall not be heard by the Panel: [...] (b) Complaints against procurement decisions by the Bank borrowers from suppliers of goods and services financed by the Bank under a loan agreement, or from losing tenders for the supply of any such goods and services, which will continue to be addressed by staff under existing procedures.*



is addressing short-term water supply needs) to the Greater Beirut Region that the Government is considering, including the Bisri, Damour and Janna Dams. This would address, amongst other things, the Requesters' Representative's concerns through dialogue with the Government and the Bank.

***Notwithstanding Management's concerns regarding the eligibility of this Request for Inspection, Management welcomes the opportunity to clarify the issues and questions raised by the Requesters.***



## I. INTRODUCTION

1. On November 10, 2010, the Inspection Panel registered a Request for Inspection, IPN Request RQ 10/09 (hereafter referred to as “the Request”), concerning the Greater Beirut Water Supply Project proposed to be financed by the International Bank for Reconstruction and Development (the Bank).
2. **Structure of the Text.** The document contains the following sections: Section II presents the Request; Section III discusses eligibility issues; Section IV provides background on the Project and Section V presents Management’s Response. Annex 1 presents the Requesters’ claims, together with Management’s detailed responses, in matrix format. There are nine other annexes containing supporting material and maps.

## II. THE REQUEST

3. The Request for Inspection was submitted by Mr. Fathi Chatila (hereafter referred to as the “Requesters’ Representative”) on behalf 51 residents of the Greater Beirut Region (GBR), including himself (hereafter referred to as the “Requesters”).
4. Attached to the Request are:
  - Letter from the Ministry of Energy and Water (MoEW) dated August 17, 1998;
  - Article about the Damour River Dam by Mr. Fathi Chatila published in the Arab Water World (AWW) magazine, 1998;
  - Report of Dr. Rene Kareh presented to the Council for Development and Reconstruction (CDR) on February 4, 2000;
  - Letter sent to the Minister of the MoEW dated August 17, 1999;
  - Press Conference made by Liban Consult dated December 20, 2009;
  - Article printed in Al-Nahar Newspaper dated October 14, 2010;
  - MoEW Press Announcement in Al-Nahar Newspaper dated October 15, 2010;
  - Council of Ministers Decree No. 12/99 dated September 1, 1999;
  - Email by the Bank dated September 16, 2010;
  - Testimonies from Greater Beirut inhabitants;
  - Testimony of Al-Chouf/Ikleem Al-Kharroub inhabitant; and
  - List of names, signatures, telephone number and addresses of petitioners (five names and addresses were withheld).

No further materials were received by Management in support of the Request.

5. The Request contains claims that the Panel has indicated may constitute violations by the Bank of various provisions of its policies and procedures, including the following:
  - OP/BP 4.01, Environmental Assessment;

- OMS 2.20, Project Appraisal;
- OP/BP 10.04, Economic Evaluation of Investment Operations;
- OP/BP 4.12, Involuntary Resettlement; and
- The World Bank Policy on Access to Information dated July 1, 2010.

### III. ELIGIBILITY

6. ***Management submits that the Request for Inspection should be considered ineligible in accordance with the Inspection Panel Resolution.*** The relevant eligibility considerations are that: (i) the affected party must demonstrate that its rights or interests have been or are likely to be directly affected resulting from Bank's failure to follow its operational policies and procedures; and (ii) procurement-related matters are not within the purview of the Inspection Panel. Management believes that the failure of the Request to comply with these jurisdictional considerations renders the Request for Inspection ineligible because there is no valid basis to support a recommendation to investigate.

7. As set forth below, in the absence of harm, Management submits that 45 out of 51 Requesters<sup>4</sup> reside outside of the Project area and are unable to claim any valid nexus to the Project. Second, with respect to the six Requesters that reside within the Project area, they fail to meet the Resolution's eligibility requirements as none of these Requesters will have their land expropriated, suffer from the delivery of polluted water, or pay higher tariffs

8. In the absence of any harm or likelihood of harm, this Request fundamentally constitutes a disagreement over the design of the Project, which stems from a rejection of certain recommendations proposed by the Requesters' Representative, who was also unable to procure a consultancy contract with the Borrower related to such recommendations.

9. The Resolution<sup>5</sup> (and its subsequent Clarifications)<sup>6</sup> contains the following relevant considerations regarding eligibility:

- a. The affected party must demonstrate that its rights or interests have been or are likely to be directly affected resulting from Bank's failure to follow its op-

---

<sup>4</sup> Five of the Requesters' identities and addresses were withheld as being confidential. Management is therefore unable to ascertain their eligibility status with respect to whether they reside within the Project area, or will, or are likely to suffer harm from the Project activities.

<sup>5</sup> IBRD/IDA Resolution establishing the World Bank Inspection Panel, September 22, 1993.

<sup>6</sup> The 1999 Clarification of the Board's Second Review of the Inspection Panel (1999 Clarification) provides further clarification on the issue of eligibility. On the basis of a recommendation from the Panel, the Board has the authority to authorize an investigation without (i) making a judgment on the merits of the claimant's request; and (ii) without discussion, except that the Board is obliged to consider the technical eligibility criteria set out in Para 9 of the 1999 Clarification. The Board has to be satisfied that the request does assert in substance that a serious violation by the Bank of its operational policies and procedures has or is likely to have a material adverse effect on the requester. 1999 Clarification, para 9.

erational policies and procedures . . . provided in all cases that such failure has had, or threatens to have, a material adverse effect .<sup>7</sup>

- b. The Panel will not hear “complaints against procurement decisions by Bank borrowers from suppliers of goods and services financed or expected to be financed by the Bank under a loan agreement, or from losing tenders for the supply of any such goods and services.”<sup>8</sup>

10. ***While the Panel is required to determine the eligibility of a request for inspection independently of any views that may be expressed by Management, in deciding whether to recommend that an investigation be carried out, the Panel is obliged to satisfy itself that “all the eligibility criteria provided for in the resolution have been met.”***<sup>9</sup>

11. Even if the Board’s intention is to defer actual examination of the merits raised in a Request for Inspection to a subsequent investigation phase, it is necessary for both the Panel and the Board to deem that the assertion laid out in the Request complies with the eligibility requirements of the Resolution and the Clarifications. Without this determination, the Request should not be considered admissible.

12. As noted above, a key aspect of eligibility, on which both the Panel and Board must be satisfied, is that the affected party has demonstrated that its rights or interests have been or are likely to be directly affected resulting from the Bank’s failure to follow its operational policies and procedures and that the Request relates to an alleged violation by the Bank of its policies and procedures, and such alleged violation is of a serious character.

13. ***The Requesters are not “project affected persons” because they cannot demonstrate that their rights or interests have been or are likely to be directly affected.*** In addition, as mentioned earlier, only six out of 51 of the Requesters live in the Project area. The Requesters are unable to support a claim that they are or will be directly and materially affected by either the water supplied through the Project, or the construction or operation of the Project related infrastructure, as required under the Resolution. All claims of harm included in the Request for Inspection (water pollution, high water tariffs and involuntary resettlement) do not relate to, nor result in a material adverse effect on the Requesters since water will be treated to national and international standards and there

---

<sup>7</sup> Para 12 of the Resolution sets out the basis for a requester’s claim, requiring that: The affected party must demonstrate that its rights or interests have been or are likely to be directly affected by an action or omission of the Bank as a result of a failure of the Bank to follow its operational policies and procedures with respect to the design, appraisal and/or implementation of a project financed by the Bank [...] provided in all cases that such failure has had, or threatens to have, a material adverse effect. For the purposes of this Resolution, “operational policies and procedures” consist of the Bank’s Operational Policies, Bank Procedures and Operational Directives, and similar documents issued before these series were started, and does not include Guidelines and Best Practices and similar documents or statements.

<sup>8</sup> Para 14(b) of the Resolution.

<sup>9</sup> 1999 Clarification, paras 6 and 7.

will be no increase in tariffs under the project. Further none of the Requesters will be subject to land acquisition under this proposed project.

14. In addition, as shown in the map in Annex 3, out of the 51 Requesters, only six appear to reside within the Project area.<sup>10</sup> Notwithstanding their presence within the Project area, as with the Requesters who live outside of the Project area, they fail to meet threshold eligibility requirements. In both of these instances, there is an absence of a demonstrable nexus to any harm or likelihood of harm. Under the Project, none of these Requesters will have their land expropriated, suffer from the delivery of polluted water, or pay higher tariffs. Thus there is no valid basis for their eligibility under paragraph 12 of the Resolution as confirmed by paragraph 9(a) of the 1999 Clarifications requiring that only “affected” parties may bring a Request for Inspection. On this basis alone, the Request should be dismissed for lack of eligibility

15. *The Requesters’ Representative fails to meet the eligibility requirement of an “affected party.”* Management is unable to ascertain a credible basis upon which the Requesters’ Representative, who himself is a Requester, can claim that he is an “affected party” whose rights or interests have been or are likely to be directly affected a failure by the Bank to follow its operational policies and procedures. In the words of the Request, the alleged harm that is likely to occur could be avoided “*by implementing Mr. Fathi Chatila’s project (submitted since 1996) which calls for storing water of the Damour River by erecting a dam and conveying the water to Greater Beirut, [and] is a much better alternative.*”<sup>11</sup> In the absence of harm or the likelihood of harm, this background raises a question as to whether this Request represents the pursuit of a vested interest on the part of this Requester.

16. Management submits that the record renders it inherently inappropriate for the Inspection Panel to be used as a vehicle to support a Requester’s personal involvement in, and promotion of, a development project from which such a Requester would stand to financially benefit, as in this present context. Management further submits that the Resolution’s eligibility criteria regarding “affected persons” require a rigorous adherence so as not to distort nor encourage abuse of the Inspection Panel’s substantive and procedural due process mechanism.

17. Further, the Request is ineligible on the grounds that the Inspection Panel does not have subject matter jurisdiction over procurement decisions. The Resolution explicitly bars from eligibility procurement-related disputes. In addition to the ineligibility of the Requesters’ Representative as an “affected party,” this Request is also ineligible because it is procurement-based. The Requesters’ Representative was not selected by the Borrower for a consultancy services contract he pursued for the purpose of providing technical

---

<sup>10</sup> Five of the Requesters’ identities and addresses were withheld as being confidential. Management is therefore unable to ascertain their eligibility status with respect to whether they reside within the Project area, or will, or are likely to suffer harm from the Project activities.

<sup>11</sup> Request for Inspection, page 2.

and engineering inputs on the use of the Damour River.<sup>12</sup> This context supports Management's questioning of the validity of this Request. Specifically, this Request fundamentally relates to the adoption of technical and financial decisions that not only rejected the Representative of the Requesters' recommendations, but did not include him as a consultant in future infrastructure development activities. In sum, this Request appears to be an expression of the Requesters' Representative's dissatisfaction with the Borrower's choice of design as well as its decision not to procure his technical services due to a dispute over the proposed rate of compensation. Thus this is a procurement dispute that taints the validity of this Request.

18. ***In sum, in Management's view, the Request should be considered ineligible on two fundamental bases: (i) none of the Requesters is shown to be an "affected party" because of their inability to demonstrate any right or interest that is or will be harmed; and (ii) the Request constitutes a disagreement over the water source and project design chosen for the Project and a procurement decision of the Borrower.*** Importantly, the Request for Inspection does not meet the three-part test of paragraph 12 of the Resolution: the Requesters are not eligible for the reasons explained above; the complaint is not about violation of Bank Policies and Procedures, but about different views of project design; and the allegations of harm (water pollution, high water tariffs and involuntary resettlement) cannot be substantiated.

19. ***Based on the foregoing, Management submits that the Panel lacks jurisdiction over such ineligible claims and that the Request must be dismissed.***

#### IV. PROJECT BACKGROUND

##### ***Country Context: The Water Sector in Lebanon***

20. ***The Greater Beirut and Mount Lebanon area is home to nearly half of the total population of Lebanon. While the municipal water connection rate is about 90 percent in the area of coverage, continuity of water supply is low and drops to as little as three hours per day in the water-lean summer season.*** This seasonal water imbalance is primarily caused by very low water storage capacity, a high amount of water lost to the sea, growing water demand and the deficiency of existing water networks. Average technical and commercial losses are as high as 40 percent and further aggravate the adequacy and dependability of water supply. In this context, small scale private water vendors, most of whom are unregulated and many of whom are illegal, provide water of dubious quality.

21. Since the early 1950s, the Government of Lebanon (GoL) has actively explored solutions to optimize the use of its natural water resources and meet the water demands of a growing population and economy. To this effect it has engaged academia, the private sector and various public institutions.

---

<sup>12</sup> Letter dated June 25, 2001 from the Requester's Representative to CDR and letter dated September 21, 2001 from CDR to the Requester's Representative.

22. Between 1950 and 1975, several critical water-related infrastructure projects were commissioned and policy initiatives taken, most notably: (i) the construction of the Qaroun Dam on the Litani River in 1959; (ii) the Litani/Awali Hydroelectric Project, which generates approximately 8 percent of Lebanon's demand for energy and provides sustainable sources of irrigation water to large agricultural areas in the South and Bekaa Valley; and (iii) the promulgation of Decree 14522 on May 10, 1970, which allocates water on a yearly basis from the Litani and Awali Rivers to various geographic areas across Lebanon, including the GBR, in which supply shortages were apparent as early as the late 1960s.

23. Decree 14522 (Annex 12) allocates up to 50 million m<sup>3</sup> (MCM) per year of Litani and Awali waters to the GBR to meet drinking water demand during the dry months spanning April through October. The Decree is the basis for the GBWSP, in which 50 MCM per year of Litani and Awali waters would be conveyed to storage and distribution infrastructure within the GBR.

24. The GoL also commissioned several studies to explore the capture and storage of other rivers including the Awali, the Damour and the Nahr Ibrahim. Once finalized, the respective Bisri, Damour and Janna dams, among others, would ensure independent and complementary sources of long-term supply to the GBR.

25. Following the end of the sixteen year civil war in the early 1990s, the GoL embarked on a widespread development program to rebuild the country's basic infrastructure, including the water supply and irrigation sectors. The World Bank played an important role in assisting the GoL in its reconstruction efforts, most notably through the 1993 Emergency Reconstruction and Rehabilitation Project (P05336) and the 1994 Irrigation Rehabilitation and Modernization Project (P05344).

26. In 1994, the GoL commissioned a feasibility study and detailed design of the GBWSP (which is also referred to by the GoL as the "Awali Conveyor Project"). This was in direct response to the GoL's long standing interest in securing water supply to the GBR.

27. In 1998, in response to a persistent decline in water availability in the GBR, the GoL requested a Partial Risk Guarantee from the World Bank for a Build Operate Transfer (BOT) scheme on the Awali Conveyor Project. The World Bank undertook two identification missions to begin project preparation. However, again at the request of the GoL, the Project was dropped due to the unfavorable legal environment, which precluded full engagement with the private sector, and the absence of an operational water utility to contractually receive the water from the BOT Operator.

28. The Beirut Mount Lebanon Water Establishment (BMLWE) was established in 2000 under Law 221 (2000) as the regional water establishment responsible for the Greater Beirut and Mount Lebanon area. This consolidated six separate water utilities serving the GBR into one, in order to optimize the management of water services in the area.



29. In its 2005 “Schéma Directeur d’Aménagement du Territoire Libanais,” the GoL described its strategy for medium- and long-term water supply augmentation across Lebanon. The document identified the Bisri, Damour and Janna dams, among others, as medium-high priority infrastructure projects for the GBR.

30. In spite of these efforts, due to the growing demand, lack of storage, and system losses, water supply across the GBR during the summer frequently dropped to as little as three hours per day. This precarious situation has been documented in many GoL and donor agency reports, including the World Bank “Poverty and Social Impact Assessment for the Water and Energy Sector” and “2010 Public Expenditure Review.”

31. The 2009 National Unity Government identified electricity, water, telecommunications, urban transportation, and environment as priority focus sectors in which immediate government reform and investment actions would produce short-term tangible results. This was also reflected in the 2010 World Bank Country Partnership Strategy with the GoL.

32. The GBWSP, for which detailed engineering designs had been finalized for the bulk water supply component, was identified by the GoL as the immediate next-step required to meet the pressing short-term demand for water in the GBR. The GoL concurrently commissioned further updates of the feasibility studies for the Bisri, Damour and Janna dams and commenced the development of a “National Water Sector Strategy” to identify medium- and long-term solutions to water supply augmentation, water-demand management, utility reform and irrigation modernization among other priorities.

33. In early 2010, the GoL requested World Bank assistance in the preparation and partial financing of the GBWSP.

34. Sequencing of water-related investments for the GBR has involved the analysis of several technical options over the last decade, as noted above. The GBWSP is the first of several critical infrastructure projects required to meet the GBR’s long-term demand for water. The documented GoL strategy for medium- to long-term water supply augmentation to the GBR confirms that the GBWSP and Damour dam are not mutually exclusive. Documentation in this regard was also communicated to the Requesters’ Representative in the GoL letter dated August 26, 2010, with an examination of different water supply source options for the Greater Beirut area. Furthermore, several technical justifications reinforce the GoL’s decision to proceed with the implementation of GBWSP to meet the short-term demand for water in the GBR, most notably: (i) the GBWSP does not involve the construction of any dams and relies on an existing water source; and (ii) the GBWSP relies entirely on gravity and does not involve any pumping for the bulk water supply. The GBWSP is therefore the first line of significant relief to the GBR supply area. The implementation of GBWSP does not preclude any of the longer-term solutions being contemplated by the GoL.

### ***The Project***

35. The GBWSP is a critical infrastructure project that will alleviate the longstanding and acute water scarcity in the GBR. The Project, which will be implemented between 2011 and 2016, will deliver an additional 250,000 m<sup>3</sup> per day (m<sup>3</sup>/d) of drinking water supply to the GBR and will directly impact approximately 1.2 million residents, about a third of whom are poor.

36. The Project will transfer 250,000 m<sup>3</sup>/d of water from the existing confluence of the Litani and Awali Rivers at the Joun Reservoir to a water treatment plant. The water will further be transmitted, stored and distributed within the GBR (see details in paragraph 36 below). The Project will also provide technical assistance to the BMLWE and MoEW to improve operations.

37. The total proposed Project cost is US\$370 million, out of which IBRD would finance US\$200 million. The BMLWE would finance US\$140 million, and the GoL the remaining US\$30 million. Negotiations for the IBRD loan between the World Bank and the GoL were successfully concluded on September 29-30, 2010.

38. The Project is scheduled to be considered by the Bank's Board on December 16, 2010.

### ***Project Objective***

39. The Project development objective is to increase the provision of potable (drinking) water to the residents in the Project area (see map in Annex 2) within the GBR, and to strengthen the capacity of the BMLWE in utility operations. Direct beneficiaries of the proposed Project include residents who will benefit from increased access to reliable drinking water supply, equivalent to approximately 1.2 million people living in the Baabda, Aley, and parts of the Metn areas of the Greater Beirut and Mount Lebanon region and including 350,000 low-income residents of the Southern Beirut suburbs.

### ***Project Components***

40. The GBWSP consists of three components:

- *Component 1: Bulk Water Supply Infrastructure.* Component 1 will comprise the construction of: (i) a tunnel from the Joun Reservoir; (ii) a water treatment plant (WTP) at Ouardaniyeh; (iii) a tunnel from the WTP to a distribution chamber at Khaldeh; (iv) two transmission pipelines from Khaldeh; and (v) three large storage reservoirs at Hadath and Hazmieh. It also includes financing of associated equipment and Project management costs.
- *Component 2: Supply Reservoirs, Distribution Network and Metering.* Component 2 will comprise the construction of: (i) 16 supply reservoirs and pumping stations within the Project area; and (ii) a distribution network approximately 187 km long. Component 2 will also finance the installation of 200,000 household water meters in selected Project areas and the installation of about 30 bulk water meters at reservoirs and distribution chambers.

- *Component 3: Project Management, Utility Strengthening and National Studies.* Component 3 will finance: (i) a Project Management Unit (PMU); (ii) capacity building and technical assistance to the BMLWE and MoEW; (iii) utility strengthening systems, equipment and technical advisory services; and (iv) high priority national studies to be undertaken on key sector areas in alignment with the priorities set forth in the National Water Sector Strategy currently under preparation by the GoL.

## V. MANAGEMENT'S RESPONSE

41. *Management disagrees that the harmful events cited by the Request will result from the Project. There is no tariff increase proposed under the GBWSP; the water being delivered under the Project will be treated following national and international quality standards; provisions have been included in the project to mitigate potential economic and social impacts of the GBWSP; and no water will be diverted away from irrigation.* The Project meets the least cost approach and does not preclude other longer term measures for water supply that are under review. As far as the proposed dam on the Damour river is concerned, Management would like to point out that the Requesters' Representative's cost analysis is flawed and underestimates the likely cost of the dam. Moreover, several studies have looked into the viability of the proposed Damour dam project and came to different conclusions, thus there is no final finding on its viability. Some issues raised by the Requesters are based on claims about strong linkages between the GBWSP and the Bisri dam. Management wishes to clarify that the GBWSP is part of a phased approach to meeting water needs that does not preclude any of the other proposed projects for long term water supply, including the proposed Bisri Dam. However, the Bisri dam is not a component of the GBWSP nor is it relevant to, or necessary for, the achievement of the objectives of the GBWSP. The Bank has neither received an official request nor has it committed to funding the proposed Bisri Dam.

### *Eligibility*

42. As discussed in Section III, Management believes that the Requesters do not meet the eligibility requirements set forth in the Panel Resolution and its subsequent 1999 Clarification. Management is unable to ascertain a credible basis upon which the Requesters can claim that they are an "affected party" whose rights or interests have been or are likely to be directly affected resulting from the Bank's alleged failure to follow its operational policies and procedures.

43. Management has also reviewed the place of residence of the allegedly affected persons<sup>13</sup> that the Requesters' Representative declares to represent and it appears that nei-

---

<sup>13</sup> Five of the 51 Requesters' identities and addresses were withheld as being confidential. Management is therefore unable to ascertain their eligibility status with respect to whether they reside within the Project area, or will, or are likely to suffer harm from the Project activities.

ther the Requesters' Representative nor the majority of the persons he represents actually live in the Project area (see map in Annex 3) and hence will not be supplied with water that they claim would be of inferior quality.

44. Management wishes to point out that the Requesters' Representative had sought an agreement with one of the main government agencies that implement the Project to obtain a consultancy services contract for himself related to the proposed Damour dam, which the government agency did not accept.<sup>14</sup> The Requesters' Representative is using the current Request for Inspection again to propose that he should be awarded the role of "consultant and supervisor" for the proposed Damour dam. This is, therefore, an issue related to procurement which is barred from Inspection Panel consideration in accordance with the Inspection Panel Resolution.<sup>15</sup>

45. Management is of the view that the underlying reason for the Request is the Requesters' Representative's longstanding interest in and proposal to have a dam built on the Damour River which was not accepted by the GoL so far. In the Requesters' Representative's own words alleged harm could be avoided "*by implementing Mr. Fathi Chatila's project (submitted since 1996) which calls for storing water of the Damour River.*" In Management's view, not following the Requesters' Representative's project design recommendation does not necessarily lead the Project to non-compliance, and has tainted the validity of the Request for Inspection.

#### ***Communication with the Requesters' Representative***

46. Management wishes to stress that the Bank was consistently responsive to the Requesters' Representative's concerns and engaged in detailed email communication with him between August 11, 2010 and September 16, 2010. Bank staff in Beirut further met twice on September 2, 2010 and September 14, 2010 with the Requesters' Representative to discuss his views. In addition, Bank Staff facilitated a meeting between the Requesters' Representative and GoL representatives from the MoEW and the Council of Development and Reconstruction (CDR) on September 7, 2010 to discuss his concerns. In fact, in his email dated September 5, 2010 (Annex 4), the Requesters' Representative concedes that he is "very satisfied with the Bank response."

47. The issues raised by the Requesters' Representative were carefully considered and analyzed during Project preparation in line with the GoL's short- and long-term strategy for water supply augmentation to the GBR. Management has concluded that the points raised by the Requesters' Representative are largely unfounded and that his representations of facts supporting his claims are selective, only partly correct, and clearly influ-

---

<sup>14</sup> Letter dated June 25, 2001 from Requesters' Representative to CDR and letter dated September 21, 2001 from CDR to the Requesters' Representative.

<sup>15</sup> See paragraph 14 (b) of the Board Resolution which established the Inspection Panel: *In considering requests under paragraph 12 above, the following requests shall not be heard by the Panel: [...] (b) Complaints against procurement decisions by the Bank borrowers from suppliers of goods and services financed by the Bank under a loan agreement, or from losing tenders for the supply of any such goods and services, which will continue to be addressed by staff under existing procedures.*

enced by his declared interests to have a dam constructed on the Damour River. In this context, Management would like to point out that the cost calculation for the alternative project proposed by the Requesters' Representative is incomplete (see Annex 5) and that his project would not be a least-cost alternative.

48. Management maintains that the design approach chosen for this Project and agreed upon with the GoL is appropriate in light of the technical reasons favoring the GBWSP, the completeness of the GBWSP designs and the urgency of the water situation in the GBR. Management also wishes to clarify that the design approach chosen for the Project does not preclude the GoL from implementing a Damour dam at any given time.

### ***Response to specific claims***

49. Management responds to the specific issues raised by the Requesters' Representative in more detail below:

- *Analysis of alternative water sources in the Environmental and Social Impact Assessment (ESIA) (OP 4.01). All relevant alternate options have been considered.* Over the past 30 years, the GoL has analyzed the various alternatives for water supply to the GBR. These were the Bisri dam, the Janna dam, the Damour dam, and the Awali Conveyor, which is the bulk supply infrastructure within the GBWSP. The GoL concluded that the Awali Conveyor Project with the existing water source at the Joun Reservoir, where the Litani and Awali Rivers merge, was the optimal short-term solution to address the drinking water scarcity situation in the GBR. Following the GoL's review of short- and long-term water supply source options for the GBR, various alternatives within the scope of the GBWSP were analyzed in the ESIA of 2010. These included: (i) the no project option; (ii) transmission options (tunnel with varied alignments and construction methods, pipeline with various materials – concrete, ductile, steel); (iii) treatment plant location and technology; and (iv) sludge management. Implementation of the GBWSP does not in any way preclude the implementation at a later stage of the Damour dam. Furthermore, the GBWSP is not dependent on and does not include or necessitate the construction of a dam. While the scope of the GBSWP was informed by over two decades of analysis of alternative options, it was prudent to focus the ESIA on the specifics of GBWSP components.
- *Disclosure of information (OP 4.01 and OP 4.12).* The ESIA and the Resettlement Action Plan (RAP) for the GBWSP should have been made available by the Infoshop before August 9, 2010, the date of appraisal in English and the executive summaries in Arabic. However, while the ESIA was disclosed in the Infoshop on August 6, 2010, the RAP was mistakenly disclosed under a different project name the same day. As soon as Management became aware of this mistake, action was taken, and the RAP was disclosed under the correct project name on November 11, 2010. In terms of in-country disclosure, while the RAP was disclosed by the CDR on August 6, 2010, there were delays in the Government's disclosure of the ESIA. This was rectified when the Bank became aware of it. All required docu-

ments have now been correctly disclosed in English and the Executive Summaries in Arabic on the appropriate websites.

- *Public consultations (OP 4.01). Public consultations were held on May 12, 2010 and July 27, 2010 at the Lebanese University campus in Hadath, Beirut.* Official invitations were sent out to concerned Ministries and over 41 Project affected Municipalities. Local communities also received oral invitations during social interviews as well as written ones via the distributed leaflets in Arabic. Participants included private citizens, municipal representatives, representatives from schools, and government officials.
- *Bisri dam and Public Consultations. Bisri dam is not a component of the GBWSP* nor is it required for the achievement of the GBWSP Project objectives.
- *Involuntary resettlement for GBWSP (OP 4.12). The GBWSP RAP provides mitigation measures for the social and economic impacts of the Project's involuntary resettlement and land acquisition* on individual landowners and users, in accordance with the provisions on involuntary taking of land under OP 4.12. *It should be noted that the extent of physical relocation or loss of shelter for such a major infrastructure project is relatively small, with only one family expected to be relocated. No other loss of income sources or livelihood means is expected to be caused by the Project.* Efforts have been made to minimize the taking of private land, resulting for instance in a revised layout of the water treatment plant to avoid the loss of an apartment building. Bank staff undertook field visits to the entire length of the project infrastructure from the water source site to the distribution system area, including to the one family being relocated, to review the extent of expropriation required for the project.
- *Involuntary resettlement for Bisri dam (OP 4.12). The Bisri dam is not a component of the GBWSP* nor is it relevant to, or necessary for, the achievement of the objectives of the GBWSP. The GBWSP is an independent, stand-alone Project that does not necessitate the Bisri dam.
- *Past expropriation decrees and GBWSP. During Project preparation in 2010, the Bank carried out due diligence on the prior expropriations undertaken by the GoL.* The Bank received confirmation from CDR (Letter dated August 3, 2010 in Annex 11) that expropriations were carried out in accordance with Lebanese law and that there were no pending appeals or otherwise outstanding claims related to them. Moreover, Bank Staff carried out field visits to all project areas (component 1 and 2), including those where prior expropriations had been carried out.
- *Dam safety for Bisri dam (OP 4.37). The Bisri dam is not a component of the GBWSP* nor is it relevant to, or necessary for, the achievement of the objectives of the GBWSP. The GBWSP is an independent, stand-alone Project that does not necessitate the Bisri dam. Therefore OP 4.37 does not apply.

- **Economic evaluation (OP 10.04). Economic and financial evaluations were carried out for the GBWSP.** In terms of a cost comparison between the GBWSP and a potential Damour dam, the calculation is provided in the cost comparison in Annex 5. The cost comparison indicates that the GBWSP costs are about 24 percent lower than the alternatives. The Requesters' Representative's calculations fail to include major components in the cost estimate for the proposed Damour dam: (i) the cost of land expropriations at the water treatment plant; (ii) the transmission pipelines and storage reservoirs; (iii) the distribution network with Greater Beirut; and (iv) the cost of detailed designs. Once these components are included in the calculation, the Requesters' Representative's project would not be a least-cost alternative.
- **Water tariffs. There is no tariff increase proposed under the GBWSP.** The current tariff applied by the BMLWE, under the approval of the MoEW, is already adequate to cover operation and maintenance costs. Furthermore, the BMLWE is financing investment costs up to US\$140 million from its own reserves. As confirmed in the most recent BMLWE Business Plan, no increase in tariffs as a consequence of the implementation of the GBWSP is envisaged. The financial analysis of the Project also did not assume tariff increases. As recommended by international best practice, the GoL will focus first on capturing efficiency gains in the utility services by demand management initiatives including calibration of the network, comprehensive metering and reduction of non-revenue water.
- **Water quality. The water being delivered under the Project will be treated following national and international quality standards.** The water treatment plant will be tendered as a Design/Build/Operate (DBO) Contract based on year-long testing data. In a DBO Tender, contractors have the flexibility to propose design solutions that treat the raw influent water to meet the required effluent standards as mandated by Lebanese law, which is in line with international standards for water quality. Based on comprehensive water quality surveys of the Litani River and Lake Qaroun waters at the laboratories of the American University of Beirut (USAID 2005), the water quality is deemed appropriate after standard treatment at the proposed Ouardaniyeh water treatment plant. Furthermore, the Requesters' Representative himself acknowledges that even the alternative project he promotes would require water treatment.
- **Water availability for irrigation. The livelihoods of agriculture-dependent communities in South Lebanon and/or the Upper Litani River basin will not be impacted by GBWSP.** The GBWSP does not rely on any water which is intended for the South of Lebanon or the Upper Litani Basin. The Litani water in Qaroun Lake is partly used for irrigation and partly for hydropower generation. The water used for hydropower generation is then discharged into the Mediterranean Sea without being used. A portion of this water will be diverted for the GBWSP. **Therefore, the livelihoods of agriculture-dependent communities in South Lebanon and/or the Upper Litani River basin are not harmed because the water that is diverted for the GBWSP would otherwise be discharged into the sea without being used.** The GoL will also be implementing two additional non-Bank

financed projects (Canal 800 and Canal 900) which will serve the South of Lebanon and the Upper Litani Basin with the irrigation water to which the Request refers.

- *Al-Chouf / Ikleem Al-Kharroub Region. These areas are not affected by the Project* since they are located outside the Project area. (see map in Annex 2)

50. ***The Requesters' claims, accompanied by Management's detailed responses are provided in the matrix in Annex 1.***

51. Management believes that the Bank has made diligent efforts to apply its policies and procedures in the context of the preparation of this Project. In Management's view, the Bank has followed the guidelines, policies and procedures applicable to the matters raised by the Request. Management believes that the Requesters' rights or interests have not been adversely affected by a failure of the Bank to implement its policies and procedures.

52. Notwithstanding Management's view that the Project is in compliance with the Bank's applicable policies and procedures, going forward, Management intends to adopt the following course of action:

- *Strategic Environmental and Social Impact Assessment (SESIA).* Management has agreed with the GoL to carry out, under Component 3 of the Project, the preparation of a Strategic Environmental and Social Impact Assessment (SESIA). The purpose of this SESIA would be to review the feasibility studies, environmental and social impacts and costs of the various alternatives for longer-term water supply to the GBR (while the GBWSP will address short-term water supply needs), including the Bisri, Damour and Janna dams. In Management's view, this would also address, not as a matter of compliance, the Request's demand that additional water supply alternatives for the GBR should be examined. The SESIA would be an additional opportunity to address the Requesters' Representative's concerns through dialogue between the Requesters' Representative, the GoL and the Bank.
- *Monitoring Disclosure by the Client and by Infoshop.* As pointed out earlier, Management has discovered some disclosure delays and oversights which were corrected promptly. Even though these oversights did not appear to preclude the Requesters' Representative from having access to the disclosed ESIA and RAP (both of which are cited in the Request), Management will employ additional efforts to enhance monitoring of effective compliance with the disclosure requirements of PIDs, PADs, ESIA, RAPs and other Project Documents within the Middle East and North Africa Region. Specifically, Bank regional management has sent out an official memorandum to all operational departments on the subject of Disclosure Verification (Annex 7).



**ANNEX 1  
CLAIMS AND RESPONSES**

No.	Claim/Issue	Response
1(a)	<p><b>1(a) Analysis of alternative water sources in ESIA;</b> (OP 4.01 Environmental Assessment)</p> <p>This section in the <i>Environmental Impact Assessment</i>, failed to include alternative water sources. Nowhere was the alternative of a different water source considered, for example the Damour River which is closer to Beirut than the Litani River diverted to the Awali River. The Environmental Assessment report states that the constraints for the Alternatives Analysis were based on studies done in 1972 and 1984. The validity and relevance of this data (the data is now at least 26 years old) are questionable.</p> <p>According to World Bank policy, the <i>Analysis of Alternatives</i> "systematically compares feasible alternatives" and "for each of the alternatives", quantifies the environmental impacts to the extent possible and attaches economic values where feasible. Therefore the analysis should not be limited by the above boundaries but should present all the options and then determine which are feasible and which are not.</p>	<p>1(a) The analysis of alternative water supply sources to the GBR did take place. This was done in two different contexts, namely: (i) general water sector alternatives within the GoL's short- and long-term plan for supply augmentation to the GBR; and (ii) Project specific alternatives.</p> <p><b>Alternatives Considered within GoL's Short-Term and Long-Term Supply Augmentation Strategy</b></p> <ul style="list-style-type: none"> <li>▪ The MoEW examined four alternative water sources to the GBR in January 2010 (Annex 1). These were Damour dam, Bisri dam, Janna dam and the Awali Conveyer, which is the bulk supply infrastructure within the GBWSP.<sup>1</sup> The MoEW concluded that the Awali Conveyer Project with the existing water source at the Joun Reservoir, where the Litani and Awali Rivers merge, was the optimal short-term solution to address the drinking water scarcity situation in the GBR.</li> <li>▪ The main reasons for this choice were: <ul style="list-style-type: none"> <li>○ Decree 14522 of May 16, 1970 allocates water from the Litani and Awali Rivers to the GBR;</li> <li>○ Drawing and conveying water from the Litani and Awali Rivers (through the Joun Reservoir) to the GBR does not require the design and construction of a dam, and is therefore the quickest, least cost and most effective way of providing drinking water to the chronically water scarce GBR; and</li> <li>○ Detailed designs, drawings, updated costs and tender documents for the GBWSP were at an advanced stage of preparation.</li> </ul> </li> <li>▪ The GBWSP was considered to be the first in a series of priority water infrastructure projects to be implemented by GoL, as confirmed in the August 26, 2010 email from CDR to the Bank (Annex 8). Following review, the GoL decided to proceed with implementing the GBWSP and to continue in parallel the review of feasible options, including the Damour dam and the Bisri dam, for long-term water supply sources to the GBR.</li> </ul> <p><b>Alternatives considered within the GBWSP ESIA</b></p> <ul style="list-style-type: none"> <li>▪ Following the GoL's review of short- and long-term water supply source options for the GBR (Annex 9), various alternatives within the scope of the GBWSP were analyzed in the ESIA of 2010 (which was an update of the EIA of 1998). These included: (i) the no project option; (ii) transmission options (tunnel with varied alignments and construction methods, pipeline with various materials – concrete, ductile, steel); (iii) treatment plant location and technology; and (iv) sludge management.</li> <li>▪ The ESIA was based on updated 2010 studies and data. The ESIA Consultant worked closely with the feasibility study consultant to evaluate the alternatives proposed as</li> </ul>

<sup>1</sup> The Awali Conveyer refers to the tunnel which transfers water from the Litani/Awali Rivers to the GBR and is the infrastructure in reference under Component 1 of the GBWSP. The GBWSP has also been referred to by GoL as the Awali Water Supply Project and the Awali Beirut Water Conveyer Project.

No.	Claim/Issue	Response
		<p>part of the updated GBWSP design. Both the ESIA Consultant and feasibility study Consultant were commissioned by CDR: (i) to update the 1994 GBWSP detailed design and tender documents; and (ii) update the 1998 EIA and undertake public consultations of the Project to reflect current conditions. The 1994 detailed designs had been thoroughly reviewed by the GoL and were assessed to be solid technical designs.</p>
1(b)	<p><b>(1b) The World Bank did not consider the Damour Dam project in the Analysis of Alternatives</b>            Damour dam proposed by Fathi Chatila since 1996. In order to ensure a more rigorous study of alternatives for meeting Greater Beirut's water needs, it is essential to consider the Damour River as a source of water before the Awali/Litani project. This analysis must also include where to construct the dam. We have two dam sites for storing the Damour River, the first one was proposed by Mr. Fathi Chatila on 1996 and the second site proposed by the CDR and Liban Consult on late 2007.</p>	<p><b>(1b) Damour dam is one of the longer-term water supply source options currently under consideration by the GoL</b></p> <ul style="list-style-type: none"> <li>▪ As confirmed by the GoL in its August 26, 2010 letter to the Bank (Annex 8), the Damour dam is one of the potential long-term water supply source solutions for the GBR. The others are the Bisri and Janna Dams.</li> <li>▪ From the Requesters' own account, many studies have been conducted over the last 40 years to examine the feasibility of storing Damour River water. <b>These studies, listed below, are inconclusive as to the feasibility and viability of a dam on the Damour River:</b> <ul style="list-style-type: none"> <li>○ 1970s Study by Electricité de France (EDF), Food and Agriculture Organization (FAO) and C Lotti Ltd which noted the karstic nature of the site identified by the Requesters' Representative for the Damour dam;</li> <li>○ 1992 Study by Dar Al Handassah, which confirmed that summer flows in the Damour River were potentially too low to store water;</li> <li>○ 1996 Study by the Requesters' Representative which concluded that 90 MCM of water could be stored at the Damour dam; and</li> <li>○ 2007 Liban Consult feasibility study which found that 42 MCM of water could potentially be stored at the Damour dam.</li> </ul> </li> </ul>
1(c)	<p><b>(1c) The infrastructure development for meeting Greater Beirut water requirements will need over 15 years for completion.</b> Among the work to be carried out are the main and secondary transmission system, service reservoirs and pumping stations, distribution system, service connection and metering, pipeline replacement, etc. For this reason, the water volume which will be needed during the next 5 years will not exceed 40 -50 MCM or 250,000 m<sup>3</sup>/d.</p>	<p><b>(1c) Water requirement and infrastructure development</b>            Management agrees that the volume of water required for the GBR over the next 5 years will be about 250,000 cubic meters per day (m<sup>3</sup>/d), and that this can be optimally achieved through the GBWSP, which also involves development of the distribution network, including service reservoirs, pumping stations and networks. Augmentation of water supply beyond 2015 will be required for the medium- and long-term needs of the GBR.</p>
1(d)	<p><b>(1d) Taking the above facts into consideration, we would propose the following plan</b> to be carried out.</p> <ol style="list-style-type: none"> <li>1 Detailed geological, and geotechnical study should be made to the dam site proposed by Mr. Fathi Chatila .... We strongly propose to have Mr. Fathi Chatila to act as the consultant and supervisor for this project.</li> <li>2 The studies to be carried out as mentioned above will determine the maximum water volume which can be stored at the dam site proposed by Mr. Fathi Chatila. Once the results of this study becomes available, it will be possible to compare which of the two dams is most suitable for storing over 250,000 m<sup>3</sup>/d for meeting Greater Beirut water needs and the costs of storing water at each dam site.</li> </ol>	<p>1(d) The substance of the Requesters' Representative's proposal has been addressed in 1(b) above. <b>However, all procurement-related decisions on hiring of consultants should follow competitive and transparent tendering procedures.</b></p>

No.	Claim/Issue	Response
	<p>Final feasibility studies will be made for the dam for the dam site proposed by Mr. Fathi Chatila .It will determine the maximum water volume which can be stored and the costs needed. This study will be made by the same firm who will carry out the studies mentioned in item no. 1. The maximum period needed for doing such studies will be six months period. In case such a study showed that it is possible to store and deliver 90 MCM to Greater Beirut Chatila, this project will be followed. If the maximum water volume which can be stored and conveyed to Greater Beirut is less than 90 MCM, we will in this case meet the water volume needed from the Bisri dam, which has to be built on stages.</p>	
<p>2.</p>	<p><b>Disclosure of information</b> (OP 4.01 Environmental Assessment and OP 4.12 Involuntary Resettlement) According to this section of the Environmental Assessment, "the borrower provides relevant material in a timely manner prior to consultation and in a form and language that are understandable and accessible to the groups being consulted." It is unclear why the complete document for the RAP is not available on the World Bank website as of the date of this complaint. Also, relevant Arabic versions of the document provided to citizens prior to consultations are not available both on the World Bank and CDR websites.</p>	<p><b>ESIA and RAP Disclosure on World Bank's Infoshop website</b></p> <ul style="list-style-type: none"> <li>The full ESIA in English and the executive summaries in English and Arabic were disclosed in the Infoshop on August 6, 2010. The RAP was however mistakenly disclosed under another, unrelated, project. This filing error was rectified on November 11, 2010 and the full RAP in English and the executive summaries in English and Arabic are available in the Infoshop.</li> </ul> <p><b>ESIA and RAP Disclosure on CDR's website</b></p> <ul style="list-style-type: none"> <li>The full RAP and the RAP executive summary in English and Arabic were disclosed on the CDR website on August 6, 2010. Due to a technical glitch, however, the Arabic document was corrupted and could not be read properly. The English executive summary of the ESIA was also disclosed on the website of CDR on August 6, 2010. The full ESIA, however, was inadvertently not disclosed on the CDR website. The full ESIA was subsequently placed on the CDR website on November 19, 2010. Arabic versions of the ESIA and RAP executive summaries were also subsequently placed on the CDR website on November 23, 2010.</li> </ul> <p><b>ESIA and RAP Disclosure on BMLWE's website</b></p> <ul style="list-style-type: none"> <li>The full RAP was disclosed on the BMLWE website on August 13, 2010. The ESIA was inadvertently not disclosed until November 23, 2010. The executive summaries of the ESIA in English and Arabic, as well as the Arabic version of the RAP executive summary, were also disclosed on the BMLWE website on November 23, 2010.</li> </ul> <p><b>Relevant material provided prior to consultation</b></p> <ul style="list-style-type: none"> <li>As part of the disclosure requirements under OP 4.01, and as a basis for providing meaningful consultations, the ESIA consultant distributed leaflets about the Project in Arabic to all the Municipalities and residents directly affected by the Project prior to both public consultations. A copy of the leaflet was included as Appendix H of the ESIA, which was posted in the InfoShop on August 6, 2010.</li> </ul> <p><b>Disclosure Oversight</b></p> <ul style="list-style-type: none"> <li>While it is clear that the Requesters' Representative had access to all the documentation provided in the ESIA (including the Arabic language leaflet) which was disclosed on August 6, 2010 in the InfoShop, and it also appears that the Requesters' Representative had access to the RAP, as he cites its provisions, Management agrees, and regrets, that disclosure oversights were made in not ensuring full disclosure.</li> </ul>

No.	Claim/Issue	Response
		<p>sure. It may be noted that regional Management has now issued instructions for ensuring compliance with disclosure requirements. Management will continue to employ additional efforts to enhance monitoring of effective compliance with disclosure requirements of project documentation within the Middle East and North Africa Region (see Annex 7).</p>
3.	<p><b>Public Consultations</b> (OP 4.01 Environmental Assessment)</p> <p>The policy of the World Bank states that the borrower should consult "project-affected groups and local non-governmental organizations (NGOs) about the project's environmental aspects and takes their views into account". The EA report includes consultations with individuals representing ministries, municipalities and consulting agencies as well as university professors and scientists. Although regarded as authorities, these individuals cannot be considered representative of local communities affected by the Greater Beirut Water Supply Project (GBWSP). Also, the consultations took place between June 10<sup>th</sup> 1997 and January 20<sup>th</sup>, 1998. Consequently, the consultations can be considered outdated, knowing that the GBWSP is to be approved on December 16, 2010 by the Board of Directors at the World Bank (the project was proposed in 1998 and later dropped). However, many participants expressed the needs for public consultations with local communities and NGOs and agreed upon dates which were not disclosed in the report.</p> <p>The EA report includes a Socio-Economic Survey Questionnaire that was conducted with local authorities of municipalities and other stakeholders who do not necessarily represent the interest of their communities. The survey focused mostly on demographic information and development levels and needs in the towns and villages affected by this project. This information does not show how specific communities, households and individuals will be affected by the project. The report also states that any socio-economic or demographic data related to these villages and towns are "estimates and do not constitute accurate quantitative data". Therefore, this data cannot be considered a reliable source upon which the decision to implement the project can be based.</p> <p>Two more recent public consultations were held in 2010 conducted by the ESIA CONSULTANTS team in agreement with the MoE&amp;W to consult potentially affected people and concerned Municipalities. They were held on May 12th and July 27th of 2010 at the Lebanese University -Hadath Campus.</p> <p>Consultations were not comprehensive and do not reflect the opinion of Greater Beirut inhabitants or the communities of Damour, Al Chouf and Ikleem Al Kharroub who might be negatively affected by the project.</p> <p>Not one of the remaining 1.5 million inhabitants of Greater Beirut was consulted.</p>	<p><b>Public Consultations Held on May 12, 2010 and July 27, 2010</b></p> <p>In accordance with OP 4.01, public consultations were held on May 12, 2010 and July 27, 2010 at the Lebanese University campus in Hadath, Beirut to solicit the views of Project-affected groups and NGOs. These followed the Bank's participation in the Parliamentary Infrastructure Committee Meeting on February 27, 2009 in which a public presentation on the GBWSP was made. This meeting was attended by over 150 people including many Members of Parliament, Ministry representatives, local authorities from within the GBR, media and private citizens. No objection was registered to the Project by any of the meeting participants.</p> <p><i>May 12, 2010 consultations</i></p> <ul style="list-style-type: none"> <li>Based on an agreed plan with Ministry of Environment representatives, the ESIA Consultants directly consulted potentially affected local people and invited over 41 concerned Municipalities to the consultations during the socio-economic survey. Project leaflets, prepared in Arabic, were distributed during the survey. These aimed at introducing the Project while serving as an invitation to participate in a public consultation meeting. As part of the scoping phase, a public participation event was held in the Lebanese University at Hadath, Institute of Fine Arts on of May 12, 2010. Invitations were sent out to concerned Ministries and municipalities through official faxed letters from the CDR. Local communities received oral invitations during social interviews as well as written ones via the distributed leaflets as mentioned above. The ESIA consultants presented the Project details, potential impacts and mitigation measures in a 45-minute presentation and opened the floor for one hour of open discussions with the ten attendees.</li> </ul> <p><i>July 27, 2010 consultations</i></p> <ul style="list-style-type: none"> <li>Following the same process as that of the first public consultation, a second public consultation covering Components 1 and 2 was held on July 27, 2010 for the purpose of disclosing the results of the ESIA study. About 35 stakeholders attended this event and a number of issues of interest to the participants were discussed.</li> <li>Public participation, which included several representatives from local municipalities, is considered adequate. All the fourteen municipalities participating at the July 27, 2010 public consultations either fall directly in the Project service area or are situated close to the Project bulk infrastructure components (conveyor tunnel, transmission pipelines and bulk reservoirs).</li> <li>No claim is made that every stakeholder or individual has been consulted or is satisfied with the Project, but the public consultations and the socio-economic surveys conducted constitute both an appropriate consultative process as well as a reliable source of information serving as inputs into the</li> </ul>

No.	Claim/Issue	Response
		<p>decision making process among other available data and information.</p> <ul style="list-style-type: none"> <li>•</li> </ul>
4.	<p><b><i>Bisri dam and Public Consultations</i></b> (OP 4.01 Environmental Assessment)</p> <p>Although the Bisri dam is not being financed by the World Bank, its construction will follow shortly after the implementation of the GBWSP and its construction directly depends on the existence of the GBWSP project. This is confirmed in the 1997 consultation as well as in the most recent public consultation in 2010. Since the inhabitants of Bisri and several other villages to be effected by constructing the dam were not consulted, the public consultation process can be considered incomplete and does not address all affected communities.</p>	<p><b><i>The Bisri dam is not part of the GBWSP</i></b></p> <ul style="list-style-type: none"> <li>• Bisri dam is not a component of the GBWSP nor is it required for the achievement of the objectives of the GBWSP. The GBWSP is an independent, stand-alone Project that does not necessitate the Bisri dam.</li> </ul>
5(a)	<p><b><i>Involuntary resettlement for GBWSP</i></b> (OP 4.12 Involuntary Resettlement)</p> <p>The consultations for the RAP were the same ones used for the Environmental and Social Impact Assessment report: the two most public consultations in 2010 and the socio-economic survey conducted mainly with heads of municipalities and non-representative stakeholders. It is difficult to judge whether the same sample of affected communities could be used for both an environmental and social assessment, as well as for the RAP. The only additional consultations for the RAP were made with heads of municipalities concerning the location of the reservoirs to be constructed. This is considered a technical issue and does not address the concerns of affected communities.</p>	<p><b><i>RAP Consultations</i></b></p> <ul style="list-style-type: none"> <li>• The GBWSP RAP provides mitigation measures for the social and economic impacts of the Project's involuntary resettlement and land acquisition on individual landowners and users, in accordance with the provisions on involuntary taking of land in OP 4.12. It should be noted that the extent of physical relocation or loss of shelter for such a major infrastructure Project is relatively small, with only one family expected to be relocated. The Bank has received confirmation that resettlement assistance will be provided to this family (Annex 10). No other loss of income sources or livelihood means is expected to be caused by the Project.</li> <li>• Efforts have been made to minimize the taking of private land throughout the Project area. The consultants' scoping work and socio-economic surveys of people potentially directly affected by the Project led to modifications in Project design. For example, a decision was taken by CDR to exclude an apartment building from expropriation at the Ouardaniyeh water treatment plant site. Given the population density, land acquisition for the supply reservoirs in the distribution system area, was focused on areas already in the public domain to the extent possible. As the individual plots required for the Project were not always fixed, both consultants coordinated their scoping activities with local Municipalities.</li> <li>• Since preparation for Bank involvement was initiated, an ongoing process of engagement with affected people has been underway. In addition to the public consultations described above, parallel consultations were undertaken by the ESIA Consultant as part of the socio-economic survey, and by another consultant to carry out the scoping of land plots for expropriation purposes with respect to the supply reservoirs of the distribution network.</li> <li>• According to Lebanese law, direct engagement with affected landowners by the expropriating agencies is dependent on the relevant Expropriation Decree having been issued by the Government. The expropriation details and the scope of the intended expropriations will be final after the official Decree has been issued. Consulting with Heads of Municipalities is thus relevant at preparatory stages in the Lebanese context,</li> </ul>

No.	Claim/Issue	Response
		<p>as described above.</p> <ul style="list-style-type: none"> <li>Once the Expropriation Decree has been issued, the Expropriation Commission will initiate consultations with the landowners as part of the expropriation process. During this process, the expropriating agencies, CDR and BMLWE, as well as the Head of the Expropriating Commission, are required to assist landowners in advancing their rights. The RAP envisages a process of further consultations on any issue that may arise during Project implementation.</li> <li>Bank staff undertook field visits to the entire length of the project infrastructure from the water source site to the distribution system area, including to the one family being relocated, to review the extent of expropriation required for the project.</li> </ul>
5(b)	<p><b>5(b) Involuntary resettlement for Bisri dam</b> (OP 4.12 Involuntary Resettlement)</p> <p>The Integrated Safeguards Data Sheet triggered the Involuntary Resettlement Safeguard for the areas that would be affected by the GBWSP but not for Bisri and neighboring villages which will be directly affected by the construction of the Bisri dam. Even though this dam is not (as of yet) funded by the World Bank, it is essential for the World Bank to consider the impacts of this future dam because it is an inherent part of the project.</p> <p>The World Bank representative in Lebanon Dr. Mutasem El-Fadel mentioned in his email dated September 16, 2010, item no. 3, that the World Bank is not financing dams at this time. On the other hand, the following statement was made by the Minister of Energy and Water in An-Nahar newspaper dated October 15, 2010 (Doc.# 6)</p> <ol style="list-style-type: none"> <li>The Litani/Awali project is the first phase and Bisri dam the second phase of the GBWSP. The Bisri dam is to follow the Litani/Awali after a maximum of one year.</li> <li>The Minister agreed to go on with the Litani/Awali project on condition that the World Bank will make commitments to finance Bisri dam.</li> <li>The World Bank agreed to finance Bisri dam.</li> <li>The MoE&amp;W forwarded a letter to the Ministry of Finance asking it to send an official request to the World Bank to finance Bisri dam.</li> <li>Currently, the consultant is doing a feasibility study which will be available by the end of 2010.</li> <li>It is expected that the World Bank will send delegates to start preparing for the Bisri dam in January 2011. Therefore, the Litani/Awali project and Bisri dam are one project and the Litani/Awali project will necessarily lead to the Bisri dam development.</li> </ol> <p>The fact that the Awali project took into consideration that more water will be conducted through it, is a guarantee that the Bisri dam will be executed. Both projects will supply Greater Beirut with its entire water requirement (90 MCM) for the coming 25 years.</p> <p>According to OP 4.12, "This policy applies to all com-</p>	<p><b>5(b) Bisri dam is not part of the GBWSP</b></p> <ul style="list-style-type: none"> <li>The Bisri dam is not part of the GBWSP. The dam is not a component of the GBWSP (as evidenced by the description of the Project in the Project documents) nor is it relevant to, or necessary for, the achievement of the objectives of the GBWSP. The Bisri dam would be a separate project.</li> </ul> <p><b>Bisri dam is not financed by the World Bank</b></p> <ul style="list-style-type: none"> <li>Despite discussions and communications with the MoEW, which has expressed its interest in Bank support for the future water supply augmentation (including Bisri dam) for the GBR, no formal request to the Bank, through Ministry of Finance, has been made by the GoL.</li> <li>Therefore, the World Bank has not started preparing any proposed dam project in Lebanon.</li> <li>As part of the GoL's long-term plan for water supply augmentation to the GBR in general and to cater to any future augmentation of water supply to the GBR, the GBWSP conveyor tunnel has been designed to carry a possible flow of up to 9 m<sup>3</sup>/sec. This is appropriate and merely evidence of prudent planning, given the prohibitive costs and engineering complexity associated with expanding the volumetric capacity of the tunnel, or building another conveyance infrastructure in the future.</li> </ul>

No.	Claim/Issue	Response
	<p>ponents of the project that result in involuntary resettlement, regardless of the source of financing. It also applies to other activities resulting in involuntary resettlement, that in the judgment of the Bank, are (a) directly and significantly related to the Bank-assisted project." We would therefore argue that the World Bank should also consider any resettlement that might occur in the future as a result of the Bisri dam's construction.</p>	
5(c)	<p><b>5 (c) Past expropriation decrees and GBWSP</b></p> <p>The <i>Environmental Impact Assessment</i> report includes a list of expropriation decrees issued by the CDR (the World Bank had no involvement in that process) during the period of 1998-1999. Some of these acquisitions have been completed, while the rest of the expropriations are being updated or reissued by the CDR (the decrees are only valid for 8 years). It is questionable whether these expropriations which were completed should have taken place knowing that the project is to be approved at the end of 2010, more than ten years later. Although the World Bank was not involved in the process, since the CDR "has previously undertaken land acquisitions for the purpose of the current project" and is still in the process of expropriating others, it raises the question whether the World Bank's policy on resettlement should be applied to these lands now.</p> <p>Also, according to the RAP, "Apart from losses associated with a minor agriculture business, there will be no loss of any other businesses or income generating activities nor physical relocation of people." It is unclear whether the RAP is referencing all the expropriated lands (previous and new) or the new ones to be completed within the next year.</p>	<p><b>5(c) Past expropriation decrees not used for GBWSP</b></p> <ul style="list-style-type: none"> <li>Between 1997 and 1998, the World Bank led several identification missions to Lebanon to assist the GoL in the preparation of the Awali Beirut Water Conveyor Project and the Greater Beirut Water Supply and Wastewater Project<sup>2</sup>. The Awali Beirut Water Conveyor Project involved a possible World Bank partial guarantee to a BOT scheme. This project however was abandoned due to: (i) the lack of enforceability of the proposed BOT structure under the existing Lebanese law (in particular Article 89 of the Constitution); and (ii) lack of an operational water establishment to contractually receive the treated water from the BOT Operator. The proposed wastewater collection and treatment investments under the Greater Beirut Water Supply and Wastewater Project were dropped as other donors provided financing.</li> <li>During Project preparation in 2010, the Bank carried out due diligence on the prior expropriations undertaken by CDR. The Bank received confirmation from CDR that the expropriations were carried out in accordance with Lebanese law and that there were no pending appeals or otherwise outstanding claims related to them. This is evidenced in the August 3, 2010 letter from the President of the CDR (Annex 11) confirming that: (i) expropriations carried out for the GBWSP prior to World Bank engagement were all carried out in full compliance with Lebanese law and that there were no pending appeals or otherwise outstanding claims associated with the expropriations; and (ii) records of the expropriations and their claims are filed with the CDR.</li> <li>Bank Staff carried out field visits to project areas where prior expropriations had been carried out.</li> </ul>
6.	<p><b>Dam safety for Bisri dam not carried out</b> (OP 4.37 Safety of Dams)</p> <p>In the <i>Integrated Safeguards Data Sheet</i>, the Safety of Dams safeguard was not triggered when assessing the environmental impact of this project. The Bisri dam is a part of the World Bank financed project, the Greater Beirut Water Supply Project. Therefore, since the World Bank will fund the dam, the Bank's Safeguard on Dams should be triggered and considered.</p>	<p><b>Bisri dam is not part of the GBWSP. OP 4.37 does not apply.</b></p> <ul style="list-style-type: none"> <li>The Bisri dam is not part of the GBWSP. As evidenced by the description of the Project in the Project documents, the GBWSP does not comprise a dam and the GBWSP is an independent, stand-alone Project that does not necessitate the Bisri dam.</li> </ul>
7.	<p><b>Economic evaluation</b> (OP 10.04 Economic Evaluation of Investment Opera-</p>	<p><b>The GBWSP is the lowest-cost option to meet immediate demand for drinking water supply in GBR</b></p>

<sup>2</sup> Component 1 of the GBWSP has also been called the "Awali Beirut Water Conveyor Project". Component 2 of the GBWSP was included in the previous "Greater Beirut Water Supply and Wastewater Project". The proposed GBWSP comprises both Component 1 and Component 2.

No.	Claim/Issue	Response																		
	<p>tions)</p> <p>This policy requires the World Bank to finance the cheapest alternative (assuming the same outcome). It states that <i>"the expected present value of the project's net benefit must be higher than or equal to the expected new present value of mutually exclusive project's alternatives"</i>. Therefore if there is a cheaper project that will yield the same or better results than that is the one the World Bank should go with. It is unclear whether the GBWSP is the least costly option because we believe the alternatives considered are not exhaustive.</p> <p>Greater Beirut will need 90 MCM during summer season for the coming 25 years. This water volume can be secured from two projects, the Litani water stored at the Qaroun Lake diverted to the Awali River to be conveyed to Greater Beirut and the Bisri dam to store the Awali River.</p> <p>The other project is that proposed by Mr. Fathi Chatila during 1996. It calls for the storing of the Damour River and to convey 90 MCM to Greater Beirut during summer season.</p> <p>The following table shows a cost estimate for delivering 90 MCM during the summer season to Greater Beirut from each project to Khalde village:</p> <table border="1" data-bbox="196 961 786 1255"> <thead> <tr> <th></th> <th>Litani/Awali &amp; Bisri dam (USD M)</th> <th>Damour Dam (USD M)</th> </tr> </thead> <tbody> <tr> <td>Dam Construction</td> <td>200</td> <td>160</td> </tr> <tr> <td>Conveyor to Khalde</td> <td>110</td> <td>25</td> </tr> <tr> <td>Land Acquisition</td> <td>30</td> <td>20</td> </tr> <tr> <td>Water Treatment Plant</td> <td>100</td> <td>30</td> </tr> <tr> <td>Total Amount</td> <td>440</td> <td>225</td> </tr> </tbody> </table> <p>This shows that delivering 90 MCM during summer season from the Litani/Awali &amp; Bisri dam Project to Khalde Village will cost some USD 215 million more than the Damour dam project.</p> <p><b>Direct Losses</b></p> <p>Meeting Greater Beirut water needs from the Litani/Awali project will cause the following direct losses:</p> <p>1 The 50 MCM stored at the Qaroun Lake and to be delivered to Greater Beirut during summer season is under the control of the LRA. The BMLWA will have to pay the cost of this water volume. If we take into consideration that the cost of each cubic meter is USD 0.10, the total annual cost of the 50 MCM will equal to USD 5 million or a total cost of USD 125 million during 25 years period. This value may increase or decrease depending on the agreement to be made by the LRA and BMLWA.</p> <p>2 The Litani River water stored at the Qaroun Lake is chemically, bacteriologically and industrially polluted compared to the Damour River whose water is slightly bacteriologically polluted. The cost of the water treat-</p>		Litani/Awali & Bisri dam (USD M)	Damour Dam (USD M)	Dam Construction	200	160	Conveyor to Khalde	110	25	Land Acquisition	30	20	Water Treatment Plant	100	30	Total Amount	440	225	<ul style="list-style-type: none"> <li>Economic and financial evaluations were carried out for the GBWSP. In terms of a cost comparison between the GBWSP and a potential Damour dam, the calculation is provided in the cost comparison in Annex 5. The cost comparison indicates that the GBWSP costs are about 24 percent lower. In order to complete a full cost benefit analysis, the costs of: (i) land expropriations at the water treatment plant; (ii) the transmission pipelines and storage reservoirs; (iii) the distribution network with Greater Beirut; and (iv) the cost of detailed designs should be included in the Requesters' estimate.</li> <li>The Litani River Authority (LRA) and the BMLWE both fall under the "tutelle" of the MoEW. As such, any inter-authority agreement must be reviewed and authorized by the Ministry. As part of Project preparation, the Ministry confirmed that there was no proposal to charge the BMLWE for bulk water supplied from the Joun Reservoir. At present there is no agreement for sale of water established between water authorities in Lebanon.</li> <li>Management disagrees with the Requesters' Representative's estimates of the interest rate and repayment period of World Bank loans. His cost comparison methodology is not in line with Bank (and generally) accepted cost-benefit analysis principles, See cost comparison table in Annex 5.</li> </ul>
	Litani/Awali & Bisri dam (USD M)	Damour Dam (USD M)																		
Dam Construction	200	160																		
Conveyor to Khalde	110	25																		
Land Acquisition	30	20																		
Water Treatment Plant	100	30																		
Total Amount	440	225																		



No.	Claim/Issue	Response
	<p>ment plant for the Litani River should be equipped with more sophisticated expensive instruments and chemicals which will lead to an increase in the treatment cost. In case we consider that the cost of treating one cubic meter of the Litani River to be mixed with the Bisri dam water will be USD 0.05 higher than the cost of treating one cubic meter of the Damour River, the annual cost increase will reach (90 MCM X USD 0.05) USD 4.5 million, or a total of USD 112.5 million during 25 years period.</p> <p>3 Due to the high cost of the Litani/Awali and Bisri project, the CDR, MoE&amp;W and BMLWA will have to make loans with the World Bank, the Islamic development Bank and other financial bodies for over USD 400 million.(USD 200 million for the GBWSP and USD 200 million for the Bisri dam project) In case the annual interest will reach 4% equivalent to USD 16 million, or a total cost of USD 160 million during 10 years period (taking into consideration that the loans will be settled during this period)</p> <p>Taking the above expenses into consideration, the total cost for conveying 90 MCM annually to Greater Beirut from the Litani/Bisri dam to Khalde village will reach:</p> <p>USD 440 million + USD 125 million + USD 112.5 million + USD 160 million = USD 837.5 million</p> <p>Cost of conveying 90 MCM annually from the Damour dam project will be USD 225 million.</p> <p>In other words, meeting Greater Beirut water needs from the Bisri dam and the Litani/Awali project will cost around USD 612.5 million more than the Damour dam project.</p> <p>Indirect Losses</p> <p>The indirect losses to be caused by diverting 50 MCM annually from the Litani River to Greater Beirut will be as follows:</p> <ol style="list-style-type: none"> <li>1. The average annual water volume of the Damour River flowing to the sea unused during winter season is 180 MCM. If we take into consideration that the cost of each cubic meter is USD 0.10, the annual loss will equal to USD 18 million or a total of USD 450 million during 25 years period.</li> <li>2. The 50 MCM stored at the Qaroun Lake at the elevation of 840 meters above sea level can be used during summer season for irrigating 7000 hectares of dry land. The net increase in income to be caused by irrigating one hectare is USD 4000 annually. The total annual loss the communities will bear is USD 28 million or a total of USD 700 million during 25 years period.</li> <li>3. Meeting Greater Beirut from the Damour dam will enable Al Chouf/Ikleem Al Kharroub inhabitants to use 50,000 m3/d of Al Safa spring. Cost of building a dam to store such a water volume at the elevation of 950 meters above sea level with a water treatment station and land acquisition will reach more than USD 50 million.</li> </ol> <p>The total indirect losses which will be caused during</p>	

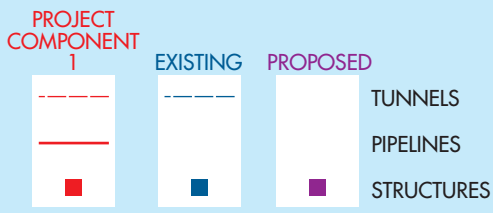
No.	Claim/Issue	Response
	<p>25 years by meeting Greater Beirut water needs from the GBWSP will reach USD 1200 million as follows:            USD 450 million + USD 700 million + USD 50 million = USD 1200 million.</p>	
8.	<p><b>Water Tariffs</b></p> <p>On June 14, 1999, the Council of Ministers decided in decree number 17/99, to form a committee to study the project for meeting Greater Beirut water needs from the Litani River. Among its members were the Director General of the MoE&amp;W, Head of the CDR, Director General of BMLWA, Director General of the LRA, etc.</p> <p>This committee met on July 2, 1999. All of its members called for the delivering of 50 MCM of the Litani River water stored at the Qaroun Lake. Studying of the Damour River is not urgent and can be made at a later date. Among the testimonies made, was one by the Director General of BMLWA who stated that <i>"the Studies made by the BMLWA showed its ability to meet the costs of the Litani/Awali River project during 10 years period by increasing the water tariff by 10 -15% annually. The net income of BMLWA will reach after meeting all debts will equal to USD 93 million starting from the year 2010."</i></p> <p>The current annual tariff applied by the BMLWA equals to USD 157. If we apply a 10% increase annually, the rate will reach USD 407.09 after a 10 year period. This will be equal to 7.54% of the minimum wage. In case we apply a 15% increase, the tariff will reach USD 635.13 annually, equivalent to 11.75% of the minimum wage income.</p> <p>The reason behind BMLWA Director General's decision apply a 10-15% increase in the tariff is that the GBWSP is very expensive and the more expensive a project is, the higher the tariff will be.</p>	<p><b>No tariff increase proposed under GBWSP</b></p> <ul style="list-style-type: none"> <li>No tariff increase is proposed under GBWSP. The current tariff applied by the BMLWE, under the approval of the MoEW, is already adequate to cover operation and maintenance costs. Furthermore, the BMLWE is financing investment costs up to USD140 million from its own reserves.</li> <li>In its most recent Business Plan (2012 – 2017) the BMLWE furthermore confirms that no tariff increases will be applied. The financial analysis done for the Project also does not assume any tariff increases. The Bank held several discussions with the GoL, which confirmed that no tariff increases are envisaged as a result of the Project.</li> <li>The Requesters' comment, based on one reported comment made by the then Director General in 1999, is unsubstantiated.</li> </ul> <p><b>BMLWE Revenue Improvement Strategies: Improve Collections and Reduce Network Losses</b></p> <ul style="list-style-type: none"> <li>The GoL's priority is to increase revenue within the BMLWE, by increasing billing and collection rates and by reducing leakages from the system (through the repair and replacement of the distribution network planned in Component 2 of the GBWSP). This is consistent with international best-practices in utility reform.</li> </ul>
9.	<p><b>Water Quality</b></p> <p>Water analysis conducted over three decades ago on the Litani River water stored at the Qaroun lake and the Litani River water diverted to the Awali River confirms that this water is extremely industrially polluted and has high levels of chemicals and bacteria. The analysis made by <i>Dr. Aref Dia</i>, Professor of Ecology - Faculty of Sciences at the Lebanese University (LU) and a researcher at the Research Lebanese Scientific Center showed that this water carries carcinogens, chemicals that are very dangerous to humans. The analysis Dr. Dia made to the Damour River showed that its water has only small amounts of bacteria and can be treated by conventional methods.</p> <p>A recent petition against the GBWSP raised by two Senior Engineers and a Chief Accountant in the Litani River Authority was printed in An-Nahar Newspaper on October 14th 2010. They confirmed that the Litani River stored at the Qaroun Lake is highly polluted and is not suitable for drinking purposes. Treating the water in the wastewater treatment plants built in the Litani River basin will be insufficient because the pollution is</p>	<p><b>The water delivered under the Project will meet the required national and international quality standards.</b></p> <p><b>Design/Build/Operate Contract for Water Treatment plant based on year long testing data.</b></p> <ul style="list-style-type: none"> <li>The water treatment plant will be tendered as a Design/Build/Operate (DBO) Contract. In a DBO Tender, contractors have the flexibility to propose design solutions that treat the raw influent water (as per testing provided in the Request for Proposals) to the required effluent standards as mandated by Lebanese law, which is in line with international standards for water quality.</li> </ul> <p><b>Water to be Treated to International Water Quality Standards</b></p> <ul style="list-style-type: none"> <li>Based on comprehensive summer and winter water quality surveys of the Litani River and Lake Qaroun waters at the laboratories of the American University of Beirut (USAID 2005), the water quality is deemed appropriate after standard treatment at the proposed Ouardaniyeh water treatment plant. Similarly, in the future the water from the Bisri, Damour, or Janna dams or any other dam planned within Lebanon's Water Strategy needs to be treated at an almost</li> </ul>

No.	Claim/Issue	Response
	<p>caused by the industrial wastes such as paints and chemicals used by tanneries in addition to household wastes dumped by inhabitants of the Litani River basin (Doc. # 5).</p> <p>The same water which was refused by all inhabitants of South Bekaa to meet their potable water needs will be conveyed to meet Greater Beirut water needs if the GBWSP goes through!</p>	<p>identical plant.</p> <ul style="list-style-type: none"> <li>As of April 2010, the BMLWE and CDR had commissioned additional raw water monitoring of Awali and Litani River water. The results of this testing will be used in the DBO contract for the water treatment plant described above. Preliminary results of this testing confirm that the water quality is appropriate for drinking uses after treatment.</li> <li>As part of regular BMLWE water quality testing operations, the quality of effluent from all water treatment plants will be tested consistently for quality compliance.</li> </ul>
10.	<p><b>Water availability for Irrigation</b></p> <p>The GBWSP depends on the Litani River water stored at the Qaroun Lake at the elevation of 840 meters above sea level. The water volume to be conveyed to Greater Beirut during the summer season can be used to irrigate 7000 hectares of dry land in South Lebanon and/or the Upper Litani River basin which suffers from poor surface and ground water resources. The inhabitants of this region are so poor and have had to migrate to the suburbs of Greater Beirut and other towns to make their living. By conveying the water of the Litani River stored at the Qaroun Lake to provide potable water to Greater Beirut, the livelihoods of agriculture-dependent communities in South Lebanon and/or the Upper Litani River basin are directly harmed. According to studies made by the Ministry of Agriculture and the LRA, the additional income these communities could have would reach USD 4000 per hectare, or a total of USD 28 million annually for irrigating 7000 hectares.</p>	<p><b>Farmers not being deprived of irrigation water due to the GBWSP:</b></p> <ul style="list-style-type: none"> <li>GBWSP does not rely on any water intended for the South of Lebanon or the Upper Litani Basin.</li> <li>Litani water in Lake Qaroun (which merges with the Awali River at the Joun Reservoir) is partly used for irrigation and partly for hydropower generation at the existing Joun Hydroelectric Power Plant. The water for hydropower generation is non-consumptive (i.e., flows through the power plant without a reduction in volume) and is currently discharged into the Mediterranean Sea. A small portion of this non-consumptive water is the water that will be diverted for GBWSP. Therefore, the livelihoods of agriculture-dependent communities in South Lebanon and/or the Upper Litani River basin are not harmed because the water that is diverted for the GBWSP would otherwise be discharged into the sea without being used.</li> <li>Decree 14522 of May 16, 1970 (Annex 12) allocated specific yearly volumes of Litani and Awali River waters to the GBR, to the Upper Litani Basin and to the South of Lebanon.</li> <li>The GBWSP will convey, treat, store and distribute the volume of water allocated to the GBR and does not rely on any water intended for the South of Lebanon or the Upper Litani Basin.</li> </ul> <p><b>Farmers are also provided with irrigation water through other non Bank-financed projects</b></p> <ul style="list-style-type: none"> <li>In addition, the non Bank-financed Canal 800 and Canal 900 Projects are currently in the final stages of tendering and will be implemented by the government over the next 3 years. These projects will serve the South of Lebanon and the Upper Litani Basin with the irrigation water to which the Request makes reference.</li> </ul>
11.	<p><b>Depriving land from Irrigation / Al-Chouf and Ikleem Al-Kharroub Region</b></p> <p>The Al Chouf/Ikleem Al Kharroub region has been witnessing severe water shortages for several decades. Its potable water needs are met mainly by two springs, Al-Safa and Barouk. The Al-Safa Spring lies at the elevation of 950 meters above sea level and its water requires no treatment and can be conveyed to all villages simply by means of gravity. Some 50,000 m<sup>3</sup>/d of Al Safa Spring flows during the summer season along the Damour River bed to a distance of 30 kilometers to irrigate the Damour plain which lies at the elevation of 30 meters above sea level. Meeting the</p>	<p><b>The Al Chouf and Ikleem Al Kharroub regions are not affected by the GBWSP, because they are outside the Project area</b> (see map in Annex 2).</p>

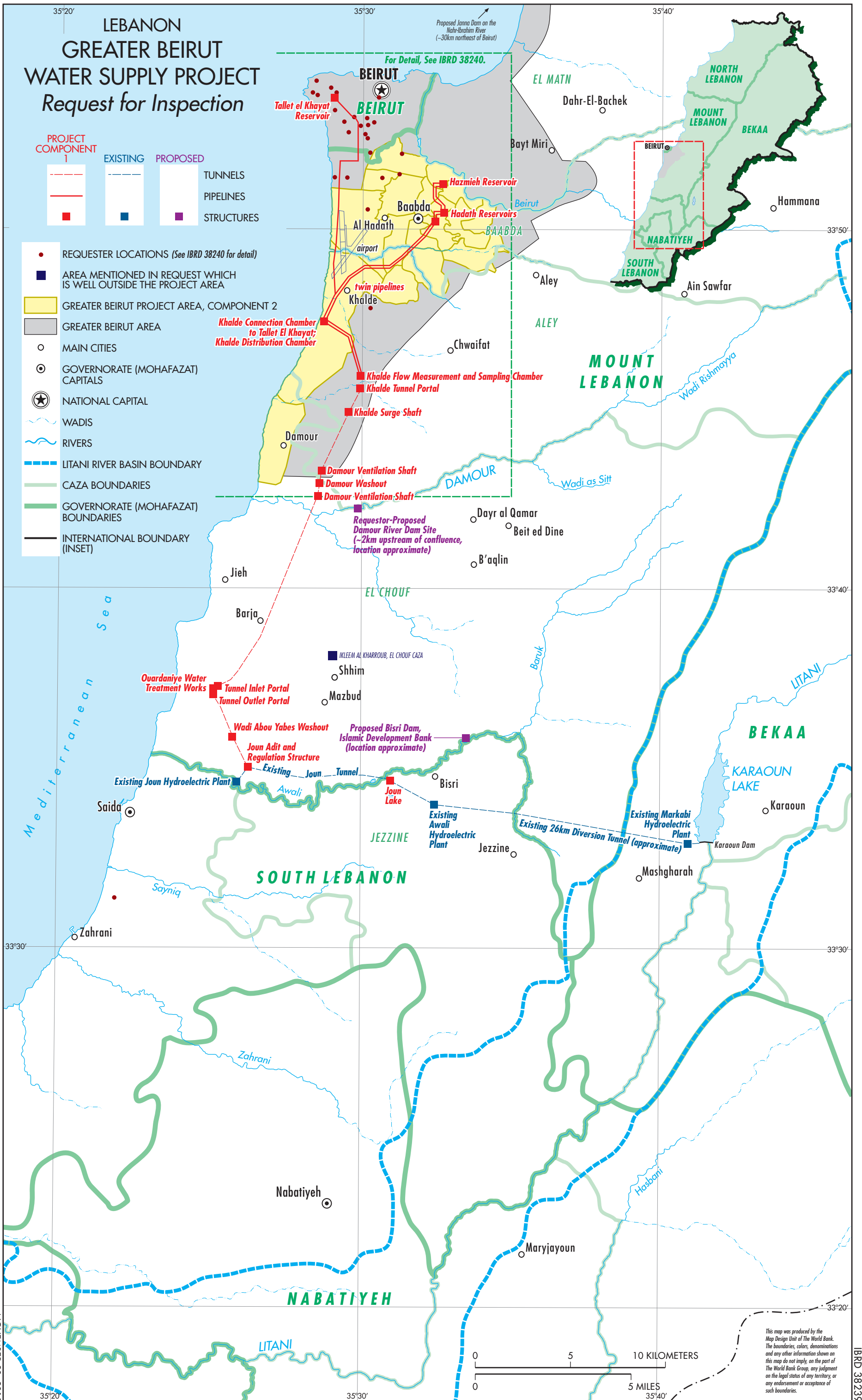
No.	Claim/Issue	Response
	<p>Damour plain irrigation needs and those of other dry coastal lands from the Damour dam will enable inhabitants to use some 50,000 m<sup>3</sup>/d of the Al-Safa Spring for meeting their potable water needs for the coming 25 years.</p> <p>The GBWSP by conveying water from the Litani River stored at the Qaroun Lake, disregarded the Damour River (close to Beirut) as an alternative option for providing potable water to Beirut and consequently for irrigating the Damour Plain. This means the Al-Safa spring will be tied up in providing irrigation for the Damour Plain and therefore leaves the Al-Chouf /Ikleem Al-Kharroub region suffering from the water shortages. For this reason, the GBWSP will indirectly harm residents of that area.</p> <p>Meeting the potable water needs of Al Chouf/Ikleem Al Kharroub could also result in several benefits. The lake to be created beyond the Dam will be 4-5 kilometers long surrounded by two hills covered by a green forest. It would also allow the carrying out of an artificial recharge to the Cenomanian aquifer feeding Greater Beirut. This will increase the water volume pumped by some 25,000 m<sup>3</sup>/d</p>	

# Annex 2

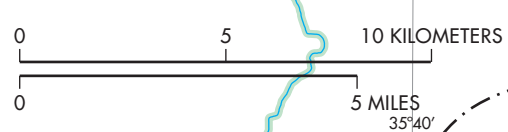
# LEBANON GREATER BEIRUT WATER SUPPLY PROJECT *Request for Inspection*



- REQUESTER LOCATIONS (See IBRD 38240 for detail)
- AREA MENTIONED IN REQUEST WHICH IS WELL OUTSIDE THE PROJECT AREA
- GREATER BEIRUT PROJECT AREA, COMPONENT 2
- GREATER BEIRUT AREA
- MAIN CITIES
- ⊙ GOVERNORATE (MOHAFAZAT) CAPITALS
- ★ NATIONAL CAPITAL
- ~ WADIS
- ~ RIVERS
- LITANI RIVER BASIN BOUNDARY
- CAZA BOUNDARIES
- GOVERNORATE (MOHAFAZAT) BOUNDARIES
- INTERNATIONAL BOUNDARY (INSET)



NOVEMBER 30, 2010



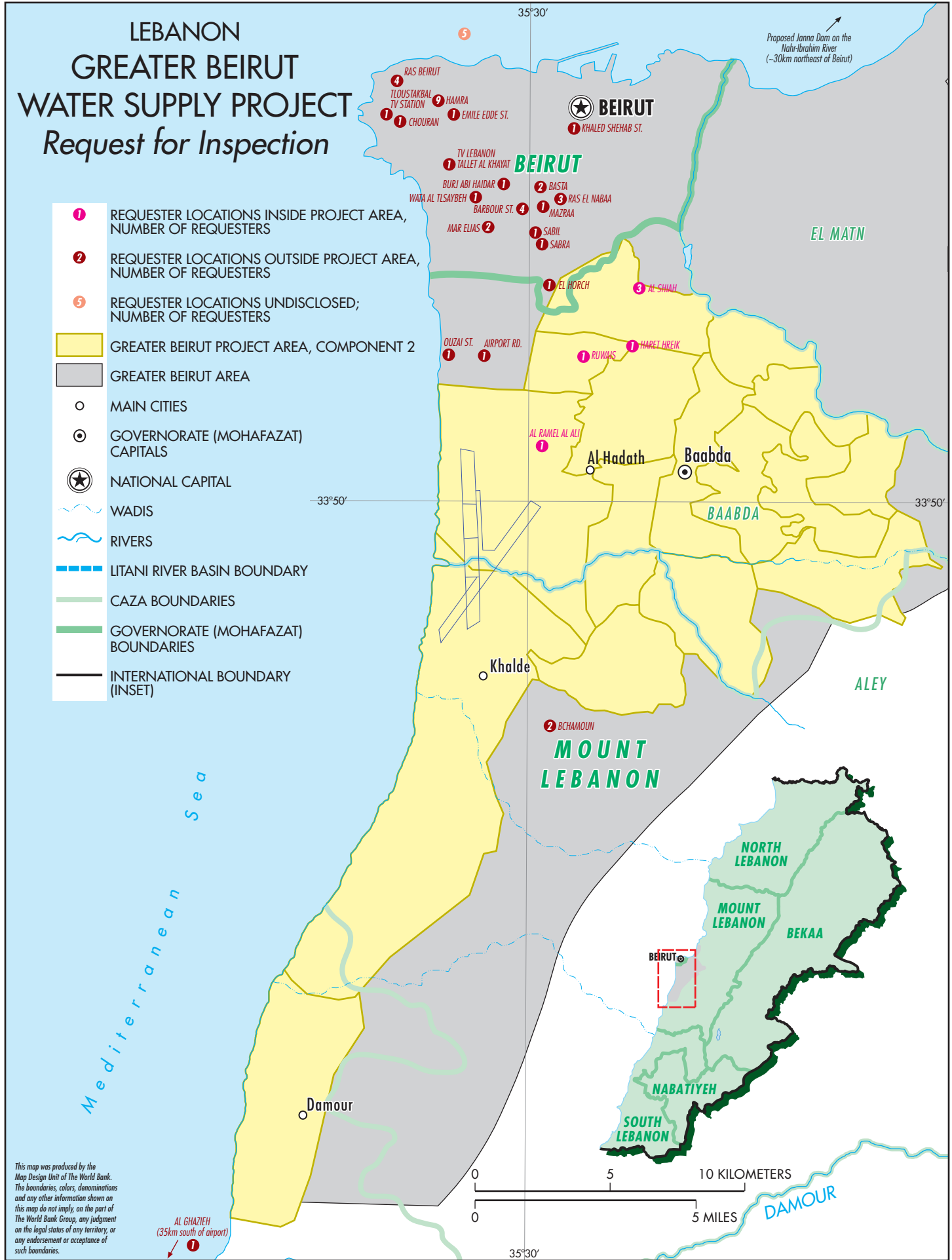
This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.

IBRD 38239

# Annex 3

# LEBANON GREATER BEIRUT WATER SUPPLY PROJECT *Request for Inspection*

- ❶ REQUESTER LOCATIONS INSIDE PROJECT AREA, NUMBER OF REQUESTERS
- ❷ REQUESTER LOCATIONS OUTSIDE PROJECT AREA, NUMBER OF REQUESTERS
- ❸ REQUESTER LOCATIONS UNDISCLOSED; NUMBER OF REQUESTERS
- GREATER BEIRUT PROJECT AREA, COMPONENT 2
- GREATER BEIRUT AREA
- MAIN CITIES
- GOVERNORATE (MOHAFAZAT) CAPITALS
- NATIONAL CAPITAL
- WADIS
- RIVERS
- LITANI RIVER BASIN BOUNDARY
- CAZA BOUNDARIES
- GOVERNORATE (MOHAFAZAT) BOUNDARIES
- INTERNATIONAL BOUNDARY (INSET)



*This map was produced by the Map Design Unit of The World Bank. The boundaries, colors, denominations and any other information shown on this map do not imply, on the part of The World Bank Group, any judgment on the legal status of any territory, or any endorsement or acceptance of such boundaries.*



# Annex 4

Fathi Chatila  
<f.chatila@cphworld  
media.com>

09/05/2010 10:27 AM

To "hchalal@worldbank.org" <hchalal@worldbank.org>,  
"ckfour1@worldbank.org" <ckfour1@worldbank.org>,  
"DSTEEL@WORLD BANK.ORG" <DSTEEL@WORLD BANK.ORG>,  
"fbrown@worldbank.org" <fbrown@worldbank.org>,  
"ismail.makki@cdr.gov.lb" <ismail.makki@cdr.gov.lb>,  
"jo.nseir@gmail.com" <jo.nseir@gmail.com>,  
"mbenouahi@worldbank.org" <mbenouahi@worldbank.org>,  
"mfadel@aub.edu.lb" <mfadel@aub.edu.lb>,  
"nyamouri@worldbank.org" <nyamouri@worldbank.org>,  
"pic@worldbank.org" <pic@worldbank.org>, "piyer@worldbank.org"  
<piyer@worldbank.org>, "memer@cyberia.net.lb"  
<memer@cyberia.net.lb>, "t.chuppe@worldbank.org"  
<t.chuppe@worldbank.org>, "wafac@cdr.gov.lb"  
<wafac@cdr.gov.lb>, "ndaar@bicusa.org" <ndaar@bicusa.org>  
cc "ismailmakki@cdr.gov.lb" <ismailmakki@cdr.gov.lb>

bcc

Subj RE: FW: Greater Beirut Water Supply  
ect

File In IRIS Status: Submitted for processing into IRIS

Dear Mr. Chalal,

I am most satisfied with the way you are responding to matter I have raised out.

Since 14 years, I have been trying draw the attention of the Ministry of Energy & Water, the CDR , BMLWA and The Litani River Authority to the mistakes they have made in studying storing of the Damour River and the great harms they will cause to Greater Beirut inhabitants and to all of the Lebanese citizens. Unfortunately, I was faced with negligence and humiliation.

At last, I have found someone who is listening to what I have to say.

I am looking forward to attend the meeting which i hope it will take place this week. I am sure that Dr. Mutassem will listen to what all parties will have to say and of course, I hope that he will be able to take the right decision.

Best regards,

Fathi Chatila  
Publisher

**CPH** World Media s.a.r.l.: Helpi

# Annex 5

## Cost-Comparison Table

COMPARISON OF INVESTMENT COSTS			
Damour Dam as proposed by Requester vs Greater Beirut Water Supply Project			
	Cost Estimate A Requester Study (1996) 90 MCM Damour Dam	Cost Estimate B Requester Study (1996) <b>Adjusted by Bank team</b>	Cost Estimate C MWH Feasibility Study (2010) 50 MCM Greater Beirut Water Supply Project
	<i>Ref: Requester Complaint</i>	<i>See assumptions note below</i>	<i>Ref: GBWSP Feasibility Study Update, April 2010, Montgomery Watson Harza (MWH) and PAD</i>
a	Engineering Design/ESIA/Tender Documents	0	14
b	Dam Construction	160	160
c	Water Treatment Plant	30	60
d	Land Expropriations		
	Dam	20	20
	WTP	0	30
e	Pumping Stations	0	15
f	Conveyance	25	25
g	Transmission pipelines + Reservoirs	0	55
h	Distribution and metering	0	61
i	Technical Assistance to BMLWE	0	15
j	Contingencies	0	21.5
i	Taxes	0	0
k	Front end fee	0	0
	<b>Total</b>	<b>235</b>	<b>476.5</b>

\* Engineering Designs for Cost Estimate C would also have been ~ 14 MUSD, but since they were only updated for the GBSWSP, they have not been costed here

**Assumptions and notes**

- The "Cost Estimate A" column presents the Requester's cost estimates for the delivery of water supply to the Greater Beirut Region through a 90 MCM dam at Damour
- As provided by the Requester, "Cost Estimate A" excludes the cost of (i) detailed engineering design (ii) land expropriations at the water treatment plant site (iii) pumping stations (iv) transmission pipelines from Khaldeh to storage reservoirs (v) distribution and metering within the Greater Beirut Region (vi) technical assistance to the Beirut Mount Lebanon Water Establishment and (vi) Contingencies and taxes. To maintain consistency with GBWSP cost comparison, these costs have been included in "Cost Estimate B" column.
- "Cost Estimate C" Column summarizes the various GBWSP costs as presented in the updated feasibility studies by Montgomery Watson Harza (MWH) and in the
- All costs highlighted in blue in "Cost Estimate B" have been adjusted as per the Bank team assumptions below:

**a. Detailed Engineering Design** (Estimated Cost: 14 MUSD): To maintain consistency with GBWSP cost comparison, the cost of the detailed designs, tender documents and ESIA have been included. The designs and tender documents can be estimated at 8% of construction cost (12.8 MUSD). The ESIA can be estimated at 1 MUSD.

**c. Water Treatment Plant** (Estimated Cost: 60 MUSD): The water treatment plant in the GBWSP has been costed at 51 MUSD for a flow of 50 MCM. The estimated flow from the Damour Dam will be 70 MCM (assuming a stored capacity of 90 MCM). As such the water treatment plant estimate in "Cost Estimate A" was increased to at least 60 MUSD to reflect the larger flow to be treated and applicable economies of scale.

**d. Land Expropriation for WTP** (Estimated Cost: 30 MUSD): To maintain consistency with GBWSP cost comparison, the cost of land expropriation at the water treatment plant have been included. These can be conservatively estimated to be as high as 30 MUSD given (i) the proximity of Khaldeh to Beirut capital and the subsequent increase in real estate prices and (ii) the larger footprint of the WTP (@ 70MCM) compared to the GBWSP (50 MCM)

**e. Pumping Stations** (Estimated Cost: 15 MUSD): The flow from Damour Dam will need to be pumped to Khaldeh. The costs of pumping can be conservatively estimated to cost 15MUSD. The GBWSP does not involve any water pumping and is operated entirely by gravity.

**g. h. i. Transmission pipelines, reservoirs, distribution network and technical assistance** (Estimated Cost: 131 MUSD): To maintain consistency with GBWSP cost comparison, the costs of transmitting, storing and distributing the 90 MCM within the Greater Beirut Region, in addition to technical assistance provided to the BMLWE have been included to Cost Estimate B.

**j. Contingencies** (Estimated Cost: 21.5 MUSD): To maintain consistency with GBWSP cost comparison, contingencies and taxes have also been added to "Cost Estimate A"

# Annex 6

Hocine Chalal

08/31/2010 12:46 PM  
82153 MNACS

To Fathi Chatila <f.chatila@cphworldmedia.com>  
cc "aekdawi@bicusa.org" <aekdawi@bicusa.org>, "fbrown@worldbank.org" <fbrown@worldbank.org>, "mbenouahi@worldbank.org" <mbenouahi@worldbank.org>, "mfadel@aub.edu.lb" <mfadel@aub.edu.lb>, "ndaar@bicusa.org" <ndaar@bicusa.org>, "nyamouri@worldbank.org" <nyamouri@worldbank.org>, "pic@worldbank.org" <pic@worldbank.org>, "piyer@worldbank.org" <piyer@worldbank.org>, "tchuppe@worldbank.org" <tchuppe@worldbank.org>, Laszlo Lovei, Hedi Larbi, Emmanuel Mbi, David J. Steel, Claire Kfour, RNEMER@cyberia.net.lb, jo.nseir@gmail.com, Ismail Makki <ismailm@cdr.gov.lb>, wafac@cdr.gov.lb

bcc

Subj RE: FW: Greater Beirut Water Supply  
ect

File In IRIS Status: Submitted for processing into IRIS

Dear Mr Chatila

With reference to your emails regarding the proposed Greater Beirut Water Supply Project, I would like to inform you that we have now received an official response from CDR and Ministry of Energy and Water (MoEW) to the points you have raised. The response, along with a matrix summarizing the main characteristics of the potential water supply sources for the Greater Beirut area, follows below.

We have reviewed the response and are satisfied with it. One of the main points being made in the response is that **the issue of augmenting the water supply to the Greater Beirut area for the mid-term and long-term has not yet been decided, and different options are still on the table, including particularly the Damour dam and the Bisri dam.** However we feel it is important to take notice that the current project, prepared with the assistance of the World Bank, does not preclude any other solutions for the medium and long term at his stage and intends essentially to respond to the most urgent water supply needs for the Greater Beirut area and take advantage of the fact that feasibility studies as well as the required expropriation procedures have essentially been finalized for the proposed investments thus allowing a quick implementation.

Concerning your interested regarding the consultation process as mentioned earlier you can find a fair description of the process and outcomes in the project EIA now disclosed both at the World Bank Information Center (Infoshop) and on the CDR's website. We are nevertheless attaching to this email a short note regarding the consultation held on July 27th, 2010, with the list of participants and the main questions raised and answers provided. You will notice that participation to the meeting included a range of institutional stakeholders, NGO, private parties and that, in particular, a significant number of participants were representatives from municipalities who, we trust, represent appropriately the interest of their constituencies.

Officials from CDR and MoEW will be happy to meet with you to discuss the issues you have raised and to make any further clarifications if necessary. Dr. Mutasem El Fadel, representing the World Bank team, will also be present at the meeting. You will be contacted shortly in this regard.

Best regards.

=====

# Annex 7

From: Shamshad Akhtar/Person/World Bank  
To: MENA Region  
Cc: Stephen F. Lintner/Person/World Bank@WorldBank, Alberto Ninio/Person/World Bank@WorldBank  
Date: 12/02/2010 05:52 PM  
Subject: MENA Region Disclosure Compliance  
Sent by: J. Cielito A. Trinidad  
458-4477 MNAVP

**Dear Colleagues,**

In line with our region's constant efforts to improve the quality of operations and in compliance with the Bank's Operational Policies, I wanted to remind you that the MENA region is committed to:

**Disclose all operational documents** (PIDs, PADs, PDs) through the InfoShop. The monthly **Disclosure & Translation table** helps us comply with this requirement by allowing us to review, once a month, the status of disclosure of all documents in the region. Three focal points have been appointed to facilitate the process in each Sector Department (Muna Abeid Salem in MNSED, Nicole La Borde in MNSHD and Evalyne Tandon in MNSSD). **Please continue to work with them to ensure that documents are properly disclosed by the Infoshop.**

**Ensure in-Country Disclosure-** consistent with applicable safeguards policies - **of safeguards documents** (e.g., EIA, RPF, RAP), by the client, both in English (or language other than the local language) and at least the Executive Summary translated in local language, **and disclose**, upon formal authorization by the client, the same documents through the Bank Information System (Infoshop). In compliance with the Bank's Safeguards Policies, Safeguard Documents must be disclosed in the InfoShop as well as locally, before the Bank begins formal appraisal of the project. The MENA Safeguards Secretariat (Hocine Chalal and Tuyet Chuppe in MNACS) should be consulted in case teams have questions on the application of this memo and in particular on the subject of compliance with the Pelosi amendment regarding operations financed by the Bank.

**I would like to remind all Managers and TTLs of their role in applying extra due diligence with regards to the verification of disclosure of operational and safeguards documents, both through the Infoshop and in country.**

Thank you.

Shamshad

Ms. Shamshad Akhtar  
Regional Vice President  
Middle East and North Africa  
The World Bank  
Washington, D.C. 20433 USA  
+1-202-458 4477  
+1-202-473-9148  
Fax: +1-202-477-0810  
sakhtar@worldbank.org



# Annex 8

Wafa Charaf Eldine  
<wafac@cdr.gov.lb>

08/26/2010 09:18 AM

To piyer@worldbank.org

cc RNEMER@cyberia.net.lb, jo.nseir@gmail.com, Ismail Makki  
<ismailm@cdr.gov.lb>, mutasem.elfadel@gmail.com,  
Mbenouahi@worldbank.org, ckfourri@worldbank.org

bcc

Subj response to e-mails concerning GBWSP  
ect

Dear Mr. Iyer,

Thank you for forwarding to us the recent communications received from Mr. Fathi Chatila, regarding the Greater Beirut Water Supply project, currently in advanced stages of preparation by the Government of Lebanon.

The various options for sustained and cost-effective delivery of potable water to the Greater Beirut area have been under consideration by the Government of Lebanon's various concerned institutions (including the Ministry of Energy and Water, the Ministry of Finance, the Council for Development and Reconstruction, and the Beirut Mount Lebanon Water Authority) for over 40 years.

The Greater Beirut area targets communities covered in the geographical area spanning the Damour River to the South, Nahr El Kalb to the North, the Mediterranean Sea to the West and a 400 meter altitude to the East.

All engineering options have been considered by experts and consultancy firms and have been compared for technical feasibility, cost-effectiveness, implementation time, long-term relevance, public acceptance, and sovereign safety among other critical factors.

The Government of Lebanon, at its highest level, has determined that the Greater Beirut Water Supply Project, in its components currently under consideration for World Bank assistance, is the only viable option at this point in time, and the *first in a series of priority infrastructure investments* required to meet the short, medium and long term water supply needs of the Greater Beirut area.

Specifically, the Government of Lebanon's decision to implement the Greater Beirut Water Supply Project is shaped by the following critical factors:

- ***Meeting the immediate drinking water needs of the Greater Beirut area***

The Greater Beirut area suffers from chronic and recurring shortages in potable water supply, particularly during the summer period. Reports of water supplied for as little as 3 hours per day to large portions of the resident population are common, verified and documented. The Greater

Beirut area thus faces a significant and immediate deficit in water supply in the immediate short term.

As such, the proposed Greater Beirut Water Supply project has been designed to deliver the volume of water required to alleviate short term demand within the Greater Beirut area. This will be achieved by conveying, treating, storing and distributing available water to the project area. The proposed infrastructure comprises (i) the raw water tunnel from the Joun hydro-electric power plant (ii) the water treatment plant at Ouardaniyeh (iii) the treated water tunnel (iv) the twin transmission pipelines (v) the storage reservoirs in Hazmieh and Hadath and (vi) the rehabilitation and replacement of the distribution system within the Greater Beirut area.

The feasibility studies and detailed designs for the Greater Beirut Water Supply project have recently been updated and are ready to be released for competitive bidding with a planned implementation period of 4 years scheduled to begin in early 2011. The target population can thus expect significant increases in water supply by as early as 2014 under the proposed project.

All other infrastructure investments under consideration, including the Damour, Bisri and Jannah dams, are in preliminary stages of design and engineering preparation which will take a few years to complete. These longer-term options will therefore not address the pressing short term water needs of the Greater Beirut area.

▪ ***Adoption of a phased approach for the medium and long term water needs of the Greater Beirut area***

The first phase envisages the implementation of the proposed Greater Beirut Water Supply Project, which does not comprise any major storage infrastructure (i.e. dams or large reservoirs) for supply increase. However, the design of the proposed Greater Beirut Water Supply Project has been conceived such that the infrastructure is able to carry any additional flows made available by future sources of supply.

In the second phase, the options for supply increase are under consideration by the Government of Lebanon and include the following:

- Damour dam (40 million m<sup>3</sup>/year maximum storage capacity): CDR has already commissioned the feasibility study for Damour Dam.
- Bisri dam (130 million m<sup>3</sup>/year maximum storage capacity): CDR is preparing the consultancy contract for the Environment Impact Assessment, Update of the Feasibility Study of Bisri Dam.
- Jannah Dam (40 million m<sup>3</sup>/year maximum storage capacity): The Ministry of Energy & Water and Beirut & Mount Lebanon Water Authority recently commissioned the preparation of the Feasibility Study for Jannah Dam.

(Please see the attached comparative table prepared by the Ministry of Energy & Water in January 2010).

▪ ***Cost-effectiveness***

The cost of the proposed Greater Beirut Water Supply Project is 370 million USD, proposed to be financed by a World Bank loan of 200 million USD, counterpart financing of 140 million USD by the Beirut Mount Lebanon Water Authority and further counterpart financing of 30 million USD by the Government of Lebanon. The updated cost estimate of 370 million USD reflects inflation, increases in the cost of materials and a general and expected increase in the cost of construction since 1998 (the date of the last Project cost estimate).

Furthermore, the updated cost includes 130 million USD to cover (i) the cost of the upgrading the distribution network (~ 85 million USD) (ii) the cost of land expropriations (~ 30 million USD) and (iii) strengthening of the Beirut Mount Lebanon Water Authority (~15 million USD). The Government of Lebanon is fully satisfied that the cost of the proposed project is reasonable and that the benefits accruing from the project significantly outweigh the cost.

- ***Other issues raised***

*Water Quality of the Litani and Awali Rivers:* The proposed water treatment plant at Ouardaniyeh will be tendered as a Design Build Operate (DBO) contract. Under this form of contracting, the contractor will be required to confirm the influent water quality data and submit a process design that meets international effluent water quality standards. DBO's are highly recommended and widely used forms of contracting for water treatment plants to ensure that the various options for standard and advanced water treatment processes are considered for selection in the final water treatment plant design.

Furthermore, the Ministry of Energy and Water, the Beirut and Mount Lebanon Water Authority and the Litani River Authority have recently begun a comprehensive one-year water quality data collection exercise specific to the Greater Beirut Water Supply Project. Sample locations have been recommended by the design engineer and include the Litani river at the Karoun dam, the Awali river and the Joun reservoir at the Joun hydro electric power plant.

*Public consultation:* In preparation for the two public consultations held on May 12, 2010 and July 27, 2010, as per the prescribed procedure, the Government of Lebanon distributed flyers in Arabic that summarize the project and inform the resident population and stakeholders of the details of the project and the date, time and location of the public consultation sessions. In addition, a socio-economic survey was conducted in the project area where interviews were conducted with the concerned local people.

In addition to the above points, we would like to reassure the World Bank that the Government of Lebanon continues to welcome and consider all qualitative and quantitative comments on its water supply infrastructure investment options.

Both the Ministry of Energy and Water and CDR, in their capacity as implementing agencies for the water sector, will gladly consider all opinions, including those of Mr. Fathi Chatila, as we move forward in exploring the capacity, geological feasibility, cost and engineering design of Damour, Bisri and Jannah dams as medium to long term solutions to increase the water supply resources to the Greater Beirut area.

Thank you

Wafa Sharaf Eldine  
Funding Division Director  
Council for Development and Reconstruction  
and

Randa Nemer  
Advisor to Minister for Energy and Water  
Ministry for Energy and Water



Alternate\_Water\_Supply\_Matrix\_for\_Greater\_Beirut.docx

# Annex 9

## Water Supply for Greater Beirut

Current Population: 1.7 to 2.1 million (ref. water establishment and CDR)

Water Deficit: 45 to 50 million cum/year in Dec. 2008 (ref. water establishment and CDR)

100 million cum/year in 2025 (water establishment – CDR estimates are higher)

Additional water resources: Awali, Bisri, Damour, and/or Jannah

	Awali Conveyor	Bisri	Damour	Jannah
Total Capacity (million cum)	50	130	40	30 to 40
Allocated Quantity for Greater Beirut Water Supply (million cum)	50	120	Unknown but part of the water will go for irrigation especially that there are considerable agricultural areas downstream and farmers have water rights.	20 to 30
Description of the water scheme associated with the water source	<p>Presidential Decree no. 14522, May 1970) allocated water from the Litani and Awali (Bisri) River catchments to different regions of Lebanon. The Greater Beirut area was allocated 50 million cum for the period between mid April till the end of October, which is typically the dry season in Lebanon.</p> <p>Water will be transmitted by gravity through the Awali conveyor (around 24 km) to Khalde and then through pipelines (9.5 km) from khalde to storage reservoirs in Hadath, Telat el Khayat, and Hazmieh from where water will be distributed by gravity to all Greater Beirut.</p>	<p>The dam will provide an additional 120 Million cum which will be transmitted through the Awali Conveyor to Greater Beirut.</p>	<p>The water scheme to feed Greater Beirut (transmission from dam, storage, distribution) is still not defined.</p>	<p>Water will be transmitted by gravity from Jannah to Dbaye (around 30 km) from where it will be pumped to Beirut.</p> <p>The option of transmitting water from Jannah to Dbaye through a tunnel or pipelines and the exact route of the transmission line have not been evaluated yet.</p> <p>The capacity of the pumping station in Dbaye to pump additional water and the cost of pumping require further studied.</p>

<p>Estimated Cost (million USD)  - Excluding cost of expropriation and distribution within Greater Beirut</p> <p>Cost of expropriation cannot be covered by donors and should be covered from governmental resources.</p>	<p><b>200</b> including:  - 24 km tunnel from Awali to Khalde with 150 million cum capacity  - Water treatment plant for 150 million cubic meter/year (Pipelines from Khalde to reservoirs  - 3 Reservoirs of 30,000 cum, 50,000 cum and 20,000 cum</p>	<p><b>200</b> for dam, all other associated costs included in Awali conveyer</p>	<p><b>140</b>  Cost of transmission line (around 10 km) and required storage are not known so far.</p>	<p><b>312</b> – 158 for dam and the remaining for power plant, transmission, treatment, etc...(ref. Khatib and Alami)</p> <p><b>170</b> (ref. water establishment)</p>
<p>Status of Expropriation</p>	<p>No expropriation required for tunnel</p> <p>Expropriation for the pipelines from Khalde to the reservoirs, the 3 reservoirs and the treatment plant are in advanced stages of preparation</p>	<p>Expropriation decree for dam available</p>	<p>No expropriation decree for the dam.</p> <p>Expropriation for transmission (around 10 km) and storage are not available</p>	<p>Expropriation decree for dam available</p> <p>Expropriation for transmission (30 km) from Jannah to Dbaye is not available.</p>
<p>Available Design Documents</p>	<p>Final design have been updated and are ready to be tendered. Environmental and Social Impact Assessment has also been updated and finalized.</p>	<p>Feasibility and Environmental Assessment</p>	<p>Pre-feasibility study available, feasibility study under preparation</p>	<p>Feasibility and Environmental Assessment</p>
<p>Time required to complete tender documents</p>	<p>Final design and tender documents are currently in final stages of review</p>	<p>2 years to finalize design and prepare tender documents for dam</p>	<p>5 years to complete feasibility studies, hydrological and geological studies, final designs, environmental assessment and tender documents for dam and transmission.</p>	<p>12 to 18 months to complement dam hydrological and geological studies and finalize feasibility studies</p> <p>2 year to finalize design and prepare tender documents</p>
<p>Availability of funds for construction</p>	<p>World Bank</p>	<p>70 million from Islamic Bank</p> <p>Donors for 130 million to be</p>	<p>No funding available so far, donors to be identified once feasibility study is completed and cost of transmission and</p>	<p>At least 3 years to prepare and finalize conveyor studies</p> <p>170 million available at water establishment</p> <p>Arab fund refused to</p>



		identified (World Bank could contribute and would assist identifying other donors)	dam are known	contribute
Estimated date to initiate construction	March 2011	December 2012	December 2015	Other donors should be identified. December 2013
Estimated date to complete works and get water to Beirut	December 2014 (50 million cum/year)	December 2017 (100 million cum/year)	December 2020 (if funds available) (Around 30 million cum/year)	December 2018 (if funds available) (Around 20 to 30 million cum/year)

# Annex 10

COUNCIL FOR DEVELOPMENT & RECONSTRUCTION  
BEIRUT- LEBANON

No. : 4031/I

Beirut, 03/08/2010

To Hedi Larbi  
Director Middle East Department  
Middle East and North Africa Region  
The World Bank

Subject : Lebanon-Greater Beirut Water Supply Project Environmental and Social Management  
Plan and Resettlement Action Plan. Farmer Case.

Dear Mr. Larbi

In the context of the Greater Beirut Water Supply Project we are pleased to provide the following clarifications regarding a family of farmers working and residing temporarily at a green house located within the treatment plant proposed site at Ouardaniye, that will be affected by land acquisition under the project.

As has been confirmed by the owner of the land and the agricultural business on the site, Mr.Majed Khodor TERRO, the farmer family voluntary took up occupation on the land while being familiar with the status of the land being under an expropriation decree, and know that they will have to be relocated.

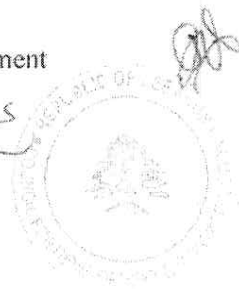
We would like to inform you that in accordance with article 22 of the Lebanese Expropriation law No. 58/91, described below, the Expropriation Commission will assess the compensation awarded to the affected landowner based not only on the value of the land, but also taking into consideration other ongoing affected activities, including in this case the agricultural business and the workers. This can be done without going into detail about the workers status or situation otherwise.

The owner will then in turn provide resettlement assistance to the caretakers and he has confirmed to us that he will be offered alternative employment in the same condition, at the another location provided by him.

Best Regards,

Council for Development  
and Reconstruction

President  
Nabil A. El Jisr



# Annex 11

COUNCIL FOR DEVELOPMENT & RECONSTRUCTION  
BEIRUT - LEBANON

No. : 4032/1

Beirut, 03/08/2010

To Hedi Larbi  
Director Middle East Department  
Middle East and North Africa Region  
The World Bank

Subject : Lebanon-Greater Beirut Water Supply Project Environmental and Social Management  
Plan and Resettlement Action Plan. Expropriations Issues.

Dear Mr. Larbi

In the context of the Greater Beirut Water Supply project currently under preparation in cooperation with the World Bank, we are pleased to provide you with the following clarifications relating to prior actions taken independently by the CDR for the purpose of preparing this project.

As you are aware, we received several World Bank identification missions to Lebanon between 1997 and 1998, with a view to prepare the Awali Beirut Water Conveyor Project and the Greater Beirut Water Supply and Wastewater Projects. World Bank involvement in both of these projects was however abandoned and the wastewater collection and treatment components of the proposed Greater Beirut Water Supply and Wastewater Project have since been financed and implemented by other donors, namely the European Investment Bank.

The government of Lebanon undertook land acquisitions for the purpose of both of the above mentioned projects covering the period between 1998 and 2000. We confirm that the World Bank was not involved in any of these expropriations.


Records of the expropriations and their claims are filed with the CDR, and can be accessed as necessary by the World Bank.

We can also confirm that there are no pending appeals or otherwise outstanding claims associated with the expropriations and that they were all carried out in full compliance with Lebanese Law.

Previous issued expropriation decrees that were not completed, will be reissued in full compliance with procedures established in connection with the current Greater Beirut Water Supply Project.

Best Regards,

Council for Development  
and Reconstruction

  
President  
Nabil A. El Jisr

# Annex 12

## Ministry of Hydraulic and Electric Resources

### Decree No. 14522

Distributing the water of the Litani River and other sources of water in the area between the road of Beirut-Damascus and the springs of Anjar- Chemsine and underground water in Terbol area north of this road in the central Beqaa for irrigation purposes.

The President of the Republic,

Based on

- the Lebanese Constitution;
- decision No. 3 of the board of directors of the National Authority of the Litani River, minutes No. 475 on July 18, 1968 in respect of distributing the water of Litani River for irrigation purposes;
- studies made by Ministry of Planning [sic] on this subject;
- the report of World Bank mission dated April 30, 1969;
- the report of the joint mission of the FAO and the International Bank for Reconstruction and Development No. 69/41 on Oct. 16, 1969;
- recommendation by Minister of Hydraulic and Electric Resources; and pursuant to
- the approval of the Council of Minister on April 8, 1970.

### Decreed

#### Article 1

**The term "western foothills"** in this decree means the Lebanese territories between Beirut River, the Mediterranean and the south borders at an altitude of 800 m above sea level.

**The term "South Beqaa"** refers to the area from the Beqaa plain from the dam of Albert Naccache in the south to the road of Beirut-Damascus in the north and the section in the north of this road between the course of the Litani River and the irrigation channel at an altitude of 900 m till Ryak.

#### Article 2

The total amount of water which can be used in an average water year in the regions covered in this decree is determined at 510 million m<sup>3</sup>. This amount can be distributed during the period as of mid-April until the end of October every year as shown in table 1 attached to this decree.

#### Article 3

This volume of water shall be distributed over the regions shown in table 2 attached to this decree, as summarized below:

South Beqaa	140 Million m <sup>3</sup>
Western foothills	320 Million m <sup>3</sup>
Potable water and water for industrial purposes	50 Million m <sup>3</sup>
TOTAL	510 Million m <sup>3</sup>

The irrigation water currently used in these regions is included in this amount.

**Article 4**

Pending the construction of Khardala Dam, storing water therein, and using it for irrigation purposes, the above quantities (as shown in table 2) shall be reduced as follows:

South Beqaa	120 Million m <sup>3</sup>
Western foothills	270 Million m <sup>3</sup>
Potable water and water for industrial purposes	40 Million m <sup>3</sup>
TOTAL	430 Million m <sup>3</sup>

**Article 5**

In case new water resources are available, the government of Lebanon will distribute them to the western foothills, taking into consideration technical rules and future water needs based on the distribution guidelines by virtue of this decree.

**Article 6**

Water quantities mentioned in article 2 of this decree shall not be deemed a vested right vis-à-vis the State. These quantities can be decreased in drought years depending on water availability. The State is also entitled to decrease the quantities allocated for irrigation as per table 2 by 25% and, if necessary, add this 25% to the 50 million m<sup>3</sup> allocated for potable water, household, and industrial purposes without any compensation to beneficiaries of irrigation water.

In view of the foregoing, the State is entitled to identify the areas that can be cultivated using permanent irrigation water, while the remaining areas shall be cultivated on a seasonal basis.

The State, temporarily, may distribute unneeded potable water and water allocated for household and industrial purposes to irrigation.

Shortage of water in drought years and due to meeting the needs for potable water and water for household and industrial purposes shall be distributed over all regions pro rata to allocated quantities.

**Article 7**

In line with water distribution scheme and new irrigation projects developed for different regions, priority shall be given to fertile soil most fit for irrigated agriculture.

**Article 8**

All other decisions and decrees in conflict with this decree shall be revoked and deemed null and void.

**Article 9**

This decree shall come into force upon publication in the official gazette.



Baabada, May 16, 1970

Charles Helou, (signed)

Issued by the President of the Republic

Prime Minister, Rachid Karame (signed)

Minister of Hydraulic and Electric Resources, Anouar Khatib (signed)

**Table 1**

**Distribution of Litani River water for irrigation purposes**  
**Quantities of water currently available and used for irrigation purposes**

First:

Quantities of water annually available during the irrigation season in the period as of mid-April until the end of October - from different sources in the areas between the road of Beirut-Damascus, the southern borders, and between the springs of Anjar- Chemsine, and the underground water in Terbol area north of this road in the central Beqaa - amount to 510 million m<sup>3</sup>. This amount of water is detailed in the following table:

SOURCE	ALTITUDE (m)	QUANTITY (mm <sup>3</sup> )	Notes
1. Spring of south Beqaa	870-890	50	
2. Underground water in the south Beqaa	840	60	
3. Water available in the Qaraoun Lake	820	160	
4. Ain al Zarqa (Water Litani Course)	600	20	
5. Tunnel of Markaba-Jezzine	600	10	
6. Qasmieh River (estuary)	5	17	
7. Nahr el Awali	30	10	
8. Different small and scattered springs	-	5	
9. Damour River	445	5	
10. Beirut River (Daychounieh)	50	5	
11. El Zahrani & Abou Assouad	180-400	10	
12. Ras el Ain (Tyr)	18	10	
13. Underground water in the southern coastal plains	-	20	
14. Khardala Dam	270	80	
15. Marjeyoun	-	3	
16. Springs in the lower Litani River from Markabi to Mansoub	3	45	
TOTAL		510	

Notes:

1. Latest studies show that the quantities of water that could be extracted from the underground in the south Beqaa exceed the amount of 60 million m<sup>3</sup> mentioned in line item 2 in the table above to at least 70 million m<sup>3</sup>.
2. The springs of the upper Litani currently used for irrigation between Tell-Amara and the road of Damascus are not counted in this table, despite the fact that water currently used in other regions particularly in the western foothills and south Lebanon are included in distribution over different regions.
3. Possible construction of a dam in Kamed El laouz area was not taken into consideration, though such dam can be filled with water taken from underground water in Rashaya area (Aiha –Kfarkouk) through a tunnel.
4. The Khardala Dam has not been constructed yet, and until this date, it is not known how to benefit from the springs of the lower Litani.
5. The above four notes show that the proposed water quantity allocated for irrigation purposes in south Beqaa is sufficient for this area with a large reserve of no less than 50 m<sup>3</sup> remaining.

Second:

The quantities of water currently used in irrigation and the irrigated areas are as follows:

- A. In south Beqaa 76 million m<sup>3</sup> is currently used to irrigate approx. 9,500 ha. An irrigation project at an altitude of 900 m shall maintain an overall and standard-based reorganization of irrigation system in south Beqaa, and hence, the irrigated area shall be subject to such reorganization.
- B. In the western foothills, 112 million m<sup>3</sup> is used to irrigate 8,600 ha. as detailed in the table below. It is worth noting that a huge amount of water is wasted and the water allocated for the currently irrigated areas should be rationalized and lowered to only 86 million m<sup>3</sup>.

	Beirut River	Damour River	Nahr el Awali	Qasmieh Project	Ras El Ain	Underground Water	Litani River	Marjayoun	Other sources	Total Area	Quantities of water allocated
Region	ha	ha	ha	Ha	ha	ha	ha	ha	ha	ha	million m <sup>3</sup>
The area between Beirut River and Ghadir River	350	-	-	-	-	-	-	-	50	400	4.5
The area between Ghadir River and Damour River	-	400	-	-	-	-	-	-	50	450	4.5
The area between Damour River and Nahr el Awali	-	-	250	-	-	400	-	-	50	700	7.5
The area between Nahr el Awali and Al Zahrani River	-	-	450	300	-	600	-	-	50	1400	14
The area between Al Zahrani River and Litani River	-	-	-	2000	-	100	-	-	100	2200	22
The area between Litani River and Borders	-	-	-	900	1100	850	300	300	-	3450	34.5
Total	350	400	700	3200	1100	1950	300	300	300	8600	86
Quantity of water currently used for irrigation	5	5	9	50	10	20	5	3	5	112	
Quantity of water to be allocated	3.5	4	7	32	10	20	3	3	3	86	

N.B:

Water savings because of reorganization of irrigation systems in western foothills and south Lebanon amount to  $112 - 86 = 26 \text{ m}^3$ . This quantity has been allocated for irrigating new lands despite great difficulties facing reorganization of old irrigation systems and taking out water savings from farmers.

**Table 2**

**Distribution of Litani water for irrigation**

Distributing the water of the Litani River and other sources of water in the area between the road of Beirut-Damascus, the southern borders, and the springs of Anjar- Chemsine and underground water in Terbol area north of this road in the central Beqaa during the irrigation season from the middle of April until the end of October of every year

**First: Lands of the region**

Areas of lands in each region are shown below:

**A. Lands of South Beqaa**

The areas of land down the channel at an altitude of 900 m amount to 30480 ha, of which 22500 ha for irrigation, and the remainder is for roads, housing, and wasteland. An area of 9,500 is currently irrigated in this region.

**B. Lands of the western foothills:**

The total area of the western foothills within the domain area of the National Authority of the Litani River and between an altitude of 800 m and the sea level amount to 211,000 ha, of which only 7,400 ha are being irrigated.

**Second: Method of distributing water for irrigation purposes**

Since the available amount of water in the Litani River is not sufficient to irrigate all arable and irrigable lands, water can be distributed by either of these two methods:

1. Irrigating arable and irrigable lands nearby water, accordingly, depriving remote areas from irrigation; or
2. Irrigating sections of lands in each region by a reasonable and fair amount of water to ensure equity among regions and avoid deprivation of any region from the benefits of irrigation from Litani water.

Since the second method secures more social equity and does not deprive any regions nearby Litani river from benefiting from its water, it is used to distribute water over the western foothills, taking into consideration the currently irrigated areas. Decreasing the regions, which currently include irrigated areas by the same percentage of new water allocated to regions not including currently irrigated areas leads to full establishment of the right of the irrigated areas and giving them additional right. Moreover full inclusion of the currently irrigated areas into distribution account as if such areas are not irrigated areas deprive them totally from their vested right, and the new irrigated areas shall be very minimal, accordingly people living there shall not feel the benefits of the project. Therefore, for distributing new water, half of the irrigated areas is considered while the other half is deemed as having a vested right and not included in the distribution account.

In south Beqaa, the quantities of water available in springs and underground water are hardly enough to irrigate the whole region, therefore, to be able to request finance from the International Bank for Reconstruction and Development, the amount of water deemed enough for full irrigation was allocated to lands most fit for irrigation in the region.

**Third: Water distribution**

**A. Irrigation of south Beqaa**

An amount of 140 million m<sup>3</sup> shall be allocated to south Beqaa, and this amount is enough for full irrigation during the period from April to October according to the reports of the International Bank for Reconstruction and Development and FAO. This water is taken from these sources:

1. Underground water in south Beqaa	60 m <sup>3</sup>
2. Springs in south Beqaa	50 m <sup>3</sup>
3. Qaraoun Lake	30 m <sup>3</sup>
Total	140 m <sup>3</sup>

**B. Irrigation of western foothills:**

An amount of 320 million m<sup>3</sup> shall be allocated to western foothills. This amount shall be taken from different sources located in the western foothill and the quantity of water available for irrigation in Qaraoun Lake (i.e., 130 m<sup>3</sup>). This amount shall be divided over the areas currently irrigated and new irrigation projects as follows:

- Currently irrigated areas	86 m <sup>3</sup>
- New areas	234 m <sup>3</sup>
Total	320 m <sup>3</sup>

**C. Reserve for potable water and industrial needs**

An amount of 50million m<sup>3</sup> shall be reserved for Beirut city and industrial projects.

50 m<sup>3</sup>

510 m<sup>3</sup>

**Fourth: Lands to be irrigated**

**A. Lands covered by the project in south Beqaa:**

$$14000,000 \text{ m}^3 = 23,500 \text{ ha approx.}$$

The percentage of irrigated land: 6000 m<sup>3</sup> per ha

$$22,500 = 78\%$$

30,000

This for full irrigation, the remainder lands are for roads, housing, and wastelands.

**B. Lands covered by the project in western foothills**

New areas that can be irrigated:

$$\frac{23,400,000}{7000} = 33,428.57 \text{ ha}$$

$$7000 \text{ m}^3 / \text{ha}$$

- Percentage of distribution per regions (with a total area of 211,140 ha):

$$\frac{33,428.57}{211,140} \times 100 = 15.83\%$$

211,140

This percentage shall apply to the area of each region, and then half of the currently irrigated area shall be taken out of such region.



Region	Total Area under an altitude of 800 m	17.8% of this area	50 % of the currently irrigated area	New area which will benefit from allocated water	Total amount of water allocates	Total irrigated area	% of irrigated area to total irrigated area under an altitude of 800 m
	ha	ha	ha	ha	mm3	ha	
The area between Beirut River and Ghadir River	7880	1400	0.5% X 400	1200	7	1600	20.3%
The area between Ghadir River and Damour River	17240	3000	0.5% X 450	2775	20	3225	18.7%
The area between Damour River and Nahr el Awali	23040	4100	0.5% X 700	3750	27	4450	19.3%
The area between Nahr el Awali and Al Zahrani River	25040	4400	0.5% X 1400	37000	26	51000	20.3%
The area between Al Zahrani River and Litani River	44740	7000	0.5% X 2200	6900	49	91000	20.3%
The area between Litani River and Lebanese borders	93200	16400	0.5% X 3450	14675	104	18125	13.4%
Total	211140	37300	0.5% X 8600	33000	234	41600	19.7%

The official gazette, issue 49, June 18, 1970, pages 1029, 1030, 1031, 2032, 1033, 1034, 1035, and 1036