



**EU-AFD TECHNICAL ASSISTANCE PROGRAMME TO SUPPORT REFORMS IN THE WATER AND WASTEWATER SECTORS IN LEBANON**



**DRINKING WATER MASTER PLANS STATUS & PROPOSED ACTION**

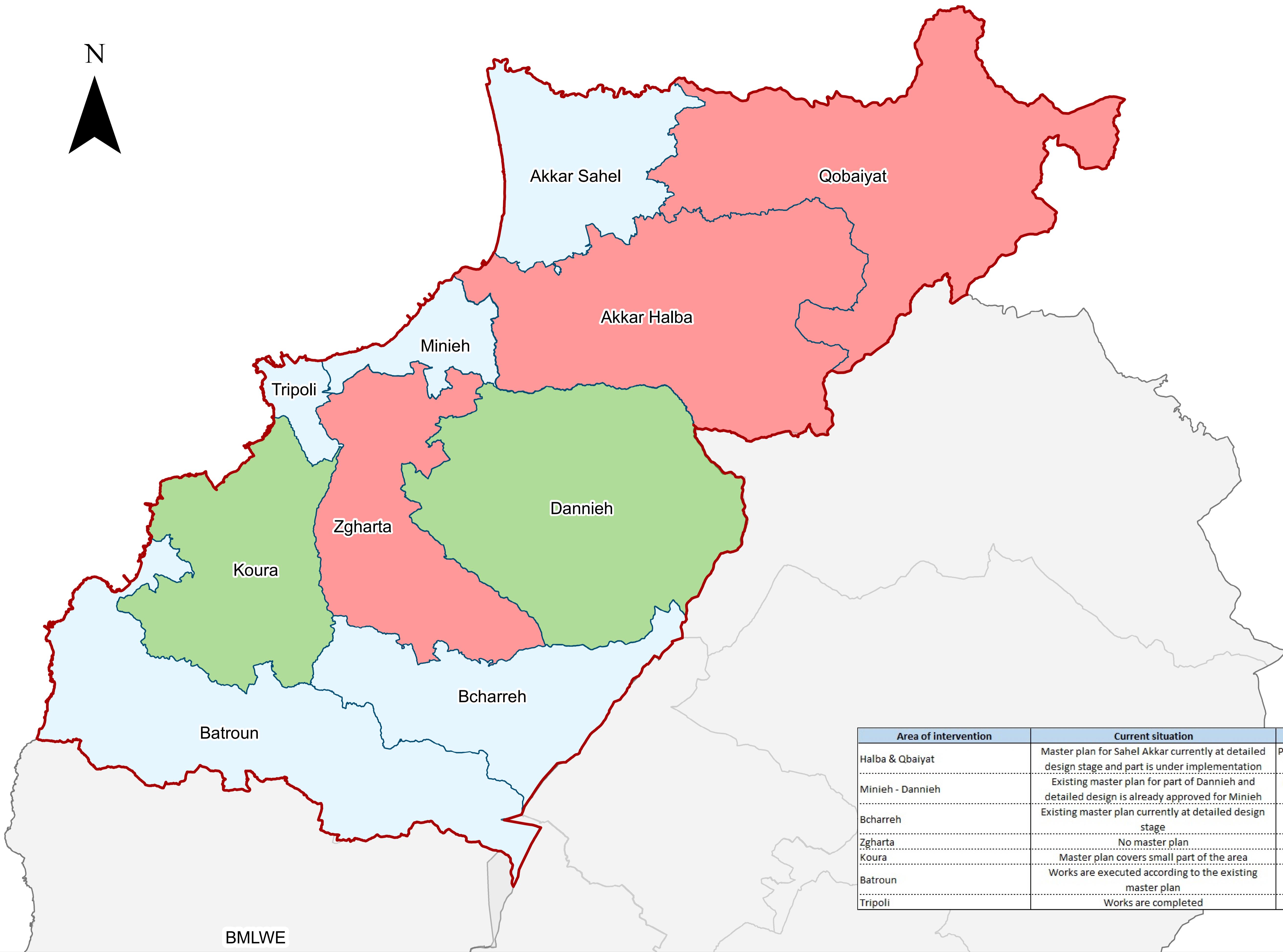
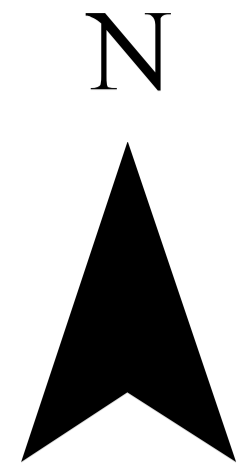


November 2022



**Legend**

- Master Plan to be Completed
- No Action Needed
- New Master Plan Required
- Awali - Bisri Scheme



**Legend**

- Master Plan to be Completed
- No Action Needed
- New Master Plan Required

Area of intervention	Current situation	LTA Assessment / Recommendations
Halba & Qbaiyat	Master plan for Sahel Akkar currently at detailed design stage and part is under implementation	Prepare a master plan for the rest part of Akkar , Halba & Qbaiyat
Minieh - Dannieh	Existing master plan for part of Dannieh and detailed design is already approved for Minieh	Prepare a master plan for the remaining part of Dannieh area
Bcharreh	Existing master plan currently at detailed design stage	No actions to take
Zgharta	No master plan	Prepare a new master plan
Koura	Master plan covers small part of the area	Complement the Master plan
Batroun	Works are executed according to the existing master plan	No actions needed
Tripoli	Works are completed	No master plan needed

BMLWE

For more details see next page



EU-AFD TECHNICAL ASSISTANCE PROGRAMME TO SUPPORT REFORMS IN THE WATER AND WASTEWATER SECTORS IN LEBANON

DRINKING WATER MASTER PLANS STATUS & PROPOSED ACTION

NLWE

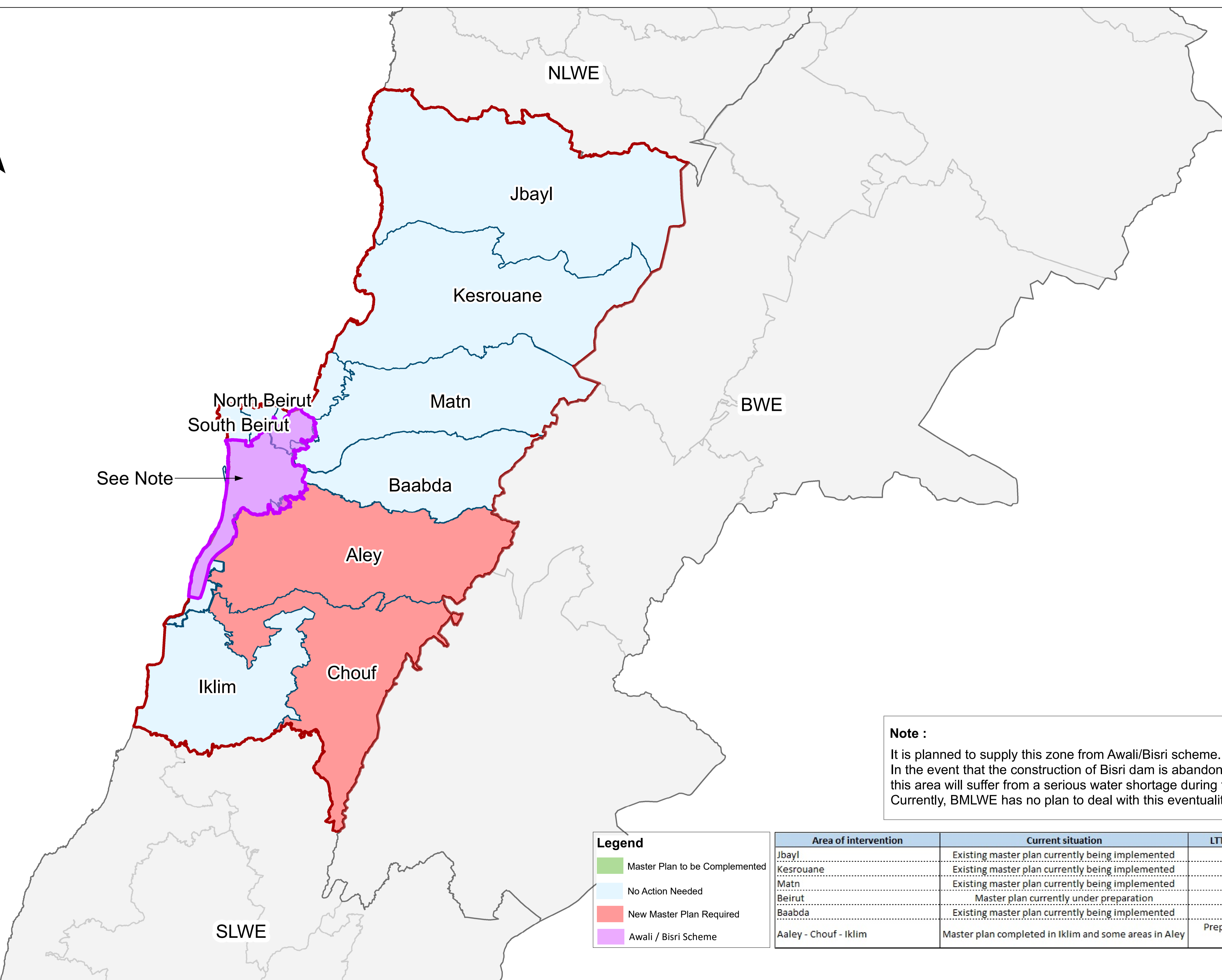
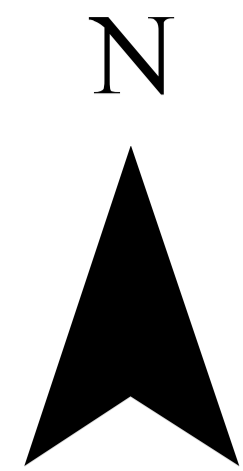


**CONSULTANT**

Hydroconseil | ED | HYDROPHIL | VA

November 2022

	Master Plan 1	Master Plan 2	Master Plan 3	Master Plan 4	Master Plan 5	Master Plan 6	Master Plan 7
<b>Covered area</b>							
Distribution District	Halba & Qbaiyat	Minieh - Dannieh	Bcharreh	Zgharta	Koura	Batroun	Tripoli
Nbr of localities	158	49	25	47	49	73	9
Nbr of Water systems	28	23	13	22	12	11	1
<b>Population</b>							
Present (2022)	689,694	232,008	47,895	124,423	152,984	69,235	519,122
Projected (2040)	942,489	317,048	65,451	170,028	209,058	94,611	709,397
<b>Subscribers</b>							
Metered	13,383	1,777	0	7	2,674	1,979	43,779
Gauged	2,885	15,231	4123	10921	14877	10,822	12,759
All (2020)	16,268	17,008	4,123	10,928	17,551	12,801	56,538
<b>Use</b>	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply
<b>Consultant</b>	Khatib & Alami	Khatib & Alami	Khatib & Alami Not approved - BTD	Khatib & Alami	Khatib & Alami	Khatib & Alami	Khatib & Alami
<b>Description and Scope of works / Existing and latest master plan</b>	The water supply master plan for the Northern Lebanon gives a general description of each caza, describes the population counts (actual and projected), presented the existing water systems, water resources and the proposed alternatives for the upgrade of the Master plans. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	The water supply master plan for the Northern Lebanon gives a general description of each caza, describes the population counts (actual and projected), presented the existing water systems, water resources and the proposed alternatives for the upgrade of the Master plans. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	The water supply master plan for the Northern Lebanon gives a general description of each caza, describes the population counts (actual and projected), presented the existing water systems, water resources and the proposed alternatives for the upgrade of the Master plans. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	The water supply master plan for the Northern Lebanon gives a general description of each caza, describes the population counts (actual and projected), presented the existing water systems, water resources and the proposed alternatives for the upgrade of the Master plans. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	The water supply master plan for the Northern Lebanon gives a general description of each caza, describes the population counts (actual and projected), presented the existing water systems, water resources and the proposed alternatives for the upgrade of the Master plans. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	The water supply master plan for the Northern Lebanon gives a general description of each caza, describes the population counts (actual and projected), presented the existing water systems, water resources and the proposed alternatives for the upgrade of the Master plans. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	The water supply master plan for the Northern Lebanon gives a general description of each caza, describes the population counts (actual and projected), presented the existing water systems, water resources and the proposed alternatives for the upgrade of the Master plans. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.
<b>Status</b>	Completed	Completed	Completed	Completed	Completed	Completed	Completed
<b>Time frame</b>							
Start date	2013	2013	2013	2013	2013	2013	2013
End date/Duration	2018	2018	2018	2018	2018	2018	2018
<b>Additional Info</b>	The master plan prepared by Khatib & Alami was not approved by NLWE, however another master plan prepared by CDR for sahel akkar is being used to implement the works, financed by IDB.	The master plan prepared by Khatib & Alami was not approved by NLWE, however a master plan for a Part of Minieh & Danniyeh was completed by Nazih Taleb and the detailed design is already approved.	The master plan prepared by Khatib & Alami was not approved nor in use by NLWE, however the detailed designs for Bcharre are prepared by BTB and works will be financed by the KFAED (Kuwait Fund for Arab Economic Development). It is to be noted that the invitation to bid is not launched by the CDR.	The master plan prepared by Khatib & Alami was not approved by NLWE and no other master plans is under preparation.	The master plan prepared by Khatib & Alami was not approved by NLWE and master plans for some areas were implemented.	The master plan prepared by Khatib & Alami was not approved by NLWE, but works to upgrade the water systems were already implemented.	The master plan prepared by Khatib & Alami was not approved by NLWE and no other master plans is under preparation.
<b>LTTA Assessment</b>	<u>Current situation:</u> The master plan for Sahel akkar is under implementation while the rest of Akkar needs a master plan. <u>Recommendations:</u> Prepare a new Master plan for the rest part of Akkar, Halba & Qbaiyat.	<u>Current situation:</u> No master plan for part of Danniyeh nor for Minieh. <u>Recommendations:</u> Prepare a new Master plan for the rest part of Dannieh and for Minieh.	<u>Current Situation:</u> Detailed design are prepared and the works will be implemented accordingly. <u>Recommendations:</u> No need for a new master plan.	<u>Current situation:</u> No master plan is in use. <u>Recommendations:</u> Prepare a new Master plan for Zgharta area.	<u>Current situation:</u> No master plan is in use. <u>Recommendations:</u> Complement/ Update the Master plan for Koura area.	<u>Current situation:</u> Works completed <u>Recommendations:</u> No need for a new master plan	<u>Current situation:</u> Works completed <u>Recommendations:</u> Prepare a new Master plan for Tripoli area.



**Note :**  
 It is planned to supply this zone from Awali/Bisri scheme.  
 In the event that the construction of Bisri dam is abandoned,  
 this area will suffer from a serious water shortage during the three months of low water.  
 Currently, BMLWE has no plan to deal with this eventuality.

**Legend**

- Master Plan to be Complemented
- No Action Needed
- New Master Plan Required
- Awali / Bisri Scheme

Area of intervention	Current situation	LTTA Assessment / Recommendations
Jbayl	Existing master plan currently being implemented	No actions needed
Kesrouane	Existing master plan currently being implemented	No actions needed
Matn	Existing master plan currently being implemented	Some updates are needed
Beirut	Master plan currently under preparation	No actions needed
Baabda	Existing master plan currently being implemented	No actions needed
Aaley - Chouf - Iklm	Master plan completed in Iklm and some areas in Aley	Prepare a master plan for part of Aaley & Chouf districts

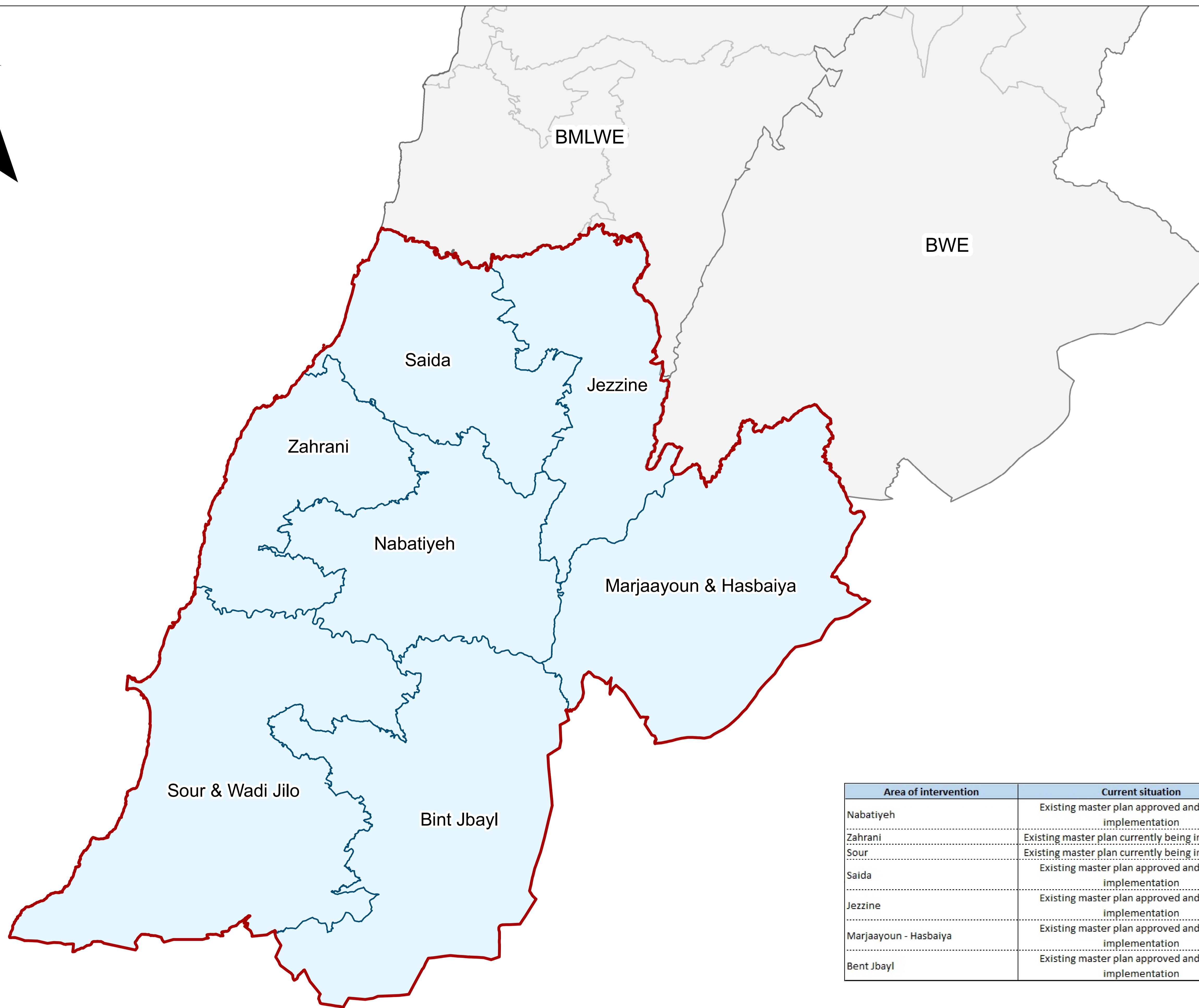
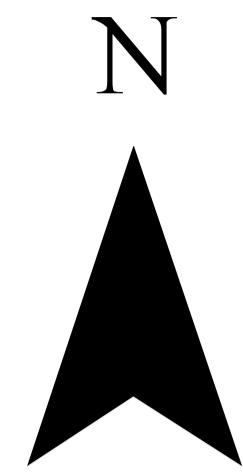
*For more details see next page*



EU-AFD TECHNICAL ASSISTANCE PROGRAMME TO SUPPORT REFORMS IN THE WATER AND WASTEWATER SECTORS IN LEBANON  
 DRINKING WATER MASTER PLANS STATUS & PROPOSED ACTION  
**BMLWE**



	Master Plan 1	Master Plan 2	Master Plan 3	Master Plan 4	Master Plan 5	Master Plan 6	Master Plan 7
<b>Covered area</b>							
Distribution District	Jbayl	Kesrouane	Upper Matn/Costal Meten (excluding the villages under Bisri scheme)	Beirut	Baabda (excluding the villages under Bisri scheme)	Aaley - Chouf - Iklim (excluding the villages under Bisri scheme)	Bisri scheme (Cover villages in Baabda-Aalley, an Metn)
Nbr of localities	133	78	88/24	12	18	213	37
Nbr of Water systems	5	3	8/2	2	3		1
<b>Population</b>							
Present	158,238	336,951	535,253	466,499	151,077	430,459	821,523
Projected (2035)	188,371	400,577	643,126	523,278	171,681	539,073	922,260
<b>Subscribers</b>							
Metered ( End 2021)	0	10,990	27,835/0	19,571	0	0	
Gauged ( End 2021)	21,205	46,618	24,937/83,400	54,431	49,804	55,443	
<b>Use</b>	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply
<b>Consultant</b>	Dar El Handasa Nazih Taleb & Partners	BEHT		Aretelia	Dar El Handasa Nazih Taleb & Partners	Iklim El Kharroub : Dar El Handasa Aaley Strategie : BTB	
<b>Description and Scope of works</b>	Jbayl master plan is prepared by Dar El Handasah. Some works are under execution, 40 reservoirs and pumping stations need expropriations and construction. Janneh dam & WTP are under execution.	Kesrouane master plan is completed. Ftouh kesrouane need to be implemented (under execution). Works in coastal and middle Kesrouane are completed.	Matn master plan is completed. Works in coastal and upper maten to be executed (water supply from Janneh and Beqaata dams).	Beirut master plan is designed. Works on going.	Master plan studied by Dar El Handasah (executions not completed)	The scope of services cover the calculation of the water needs, the assessment of the water resources, the preparation of the water balance, the identification of solutions to supply the study area with water, the selection of works to be executed, the cost estimates, and the schedule of implementing the proposed works.	The Bisri Water scheme aims to increase the volume of water available to the Greater Beirut and Mount Lebanon area where approximately half of the Lebanese population lives. More than 850,000 will have access to clean water. The Project is financed by the World Bank, Islamic Development Bank, and the Government of Lebanon. Works cover the construction of:  A dam and its associated works as transmission lines linking the dam with the Awali Hydroelectric Plant water and Joun Lake. The maximum water level of the dam is at 467 masl, the total storage volume of the reservoir is estimated at 125 Mm3, and the area expected to be inundated at 434 ha.  A treatment plant at Wardanieh and a conveying system that includes an underground tunnel and large transmission lines of 1200 mm to supply water to the storage reservoirs at Al Hazmiyeh and Tallet El Khayyat.
<b>Status</b>	Currently under implementation	Currently under implementation	Currently under implementation	Currently under implementation	Currently under implementation	Outdated	Conveying system : 70% executed Dam construction : on hold
<b>Time frame</b>							
Start date				2022			
End date/Duration	2008	2007	2003/Updated 2012	On going	2012	Iklim El Kharroub 2016 Aaley Strategie 2018	
<b>Additional Info</b>					Awali Master Plan		
<b>LTTA Assessment</b>	Current situation : Master plan completed. Works are under execution (Small updates to include new wells in the water resources) Recommendations : No further actions needed	Current situation : Master plan completed. Recommendations : no need for a new master plan	Current situation : Master plan completed. Recommendations : no need for a new master plan	Current situation : Master plan on going Recommendations : No further actions needed	Current situation : Master plan completed. Recommendations : no need for a new master plan	Current situation : Master plan completed in Iklim El Kharroub. Recommendations: Need to prepare a new master plan for Aaley & Chouf area.	Current situation : Water supply from Awali scheme Recommendations : To be reviewed if Bisri dam is dismissed



Legend	
<span style="color: green;">■</span>	Master Plan to be Complemented
<span style="color: lightblue;">■</span>	No Action Needed
<span style="color: red;">■</span>	New Master Plan Required

Area of intervention	Current situation	LTTA Assessment / Recommendations
Nabatiyeh	Existing master plan approved and awaiting implementation	No actions needed
Zahrani	Existing master plan currently being implemented	No actions needed
Sour	Existing master plan currently being implemented	No actions needed
Saida	Existing master plan approved and awaiting implementation	No actions needed
Jezzine	Existing master plan approved and awaiting implementation	No actions needed
Marjaayoun - Hasbaiya	Existing master plan approved and awaiting implementation	No actions needed
Bent Jbayl	Existing master plan approved and awaiting implementation	No actions needed

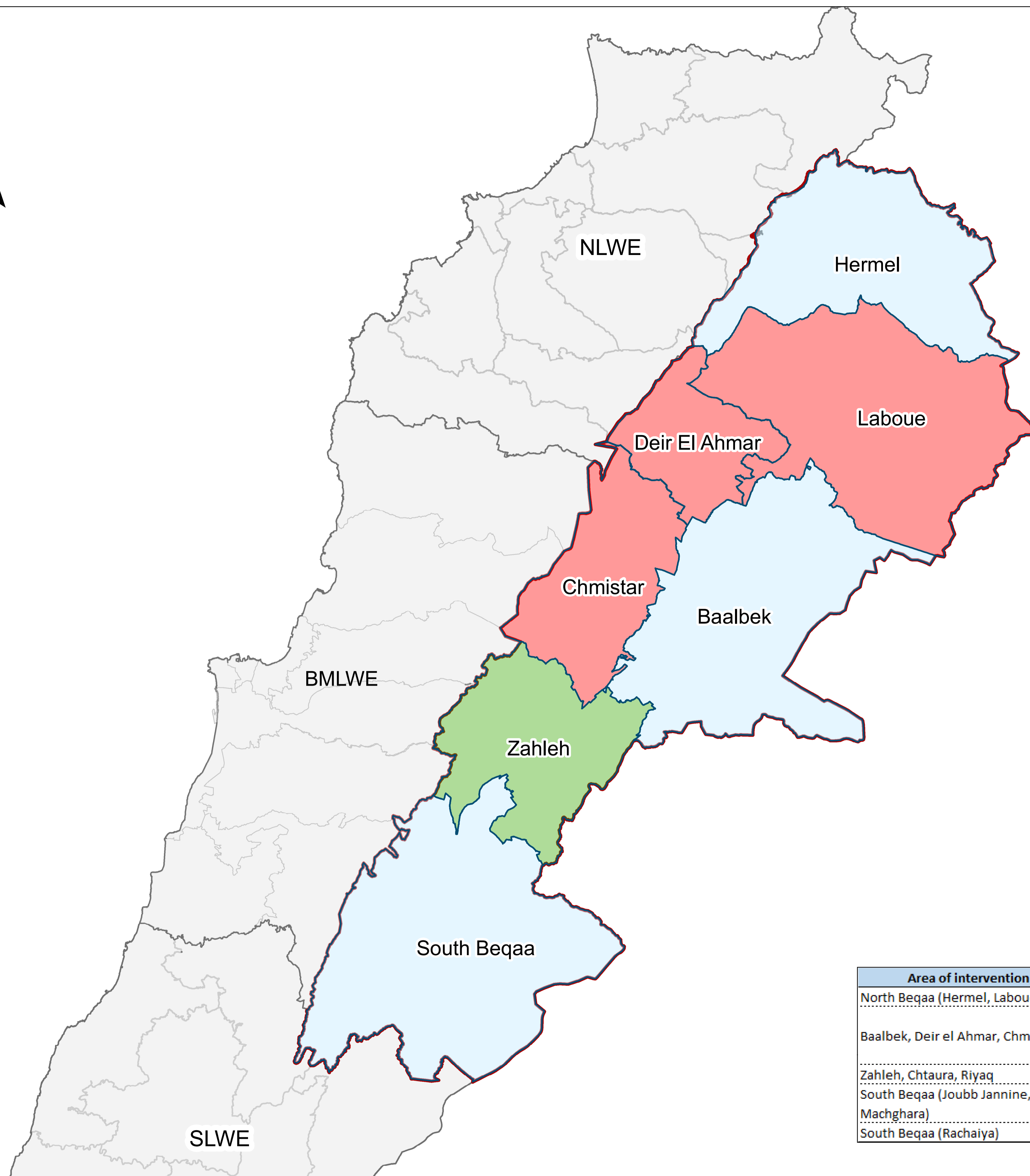
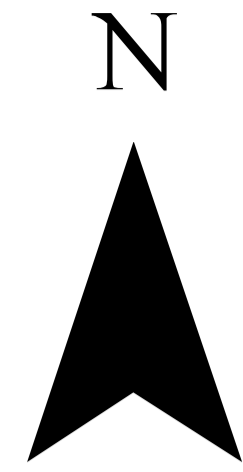
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EU-AFD TECHNICAL ASSISTANCE PROGRAMME TO SUPPORT REFORMS IN THE WATER AND WASTEWATER SECTORS IN LEBANON  
**DRINKING WATER MASTER PLANS STATUS & PROPOSED ACTION**  
**SLWE**



	Master Plan 1	Master Plan 2	Master Plan 3	Master Plan 4	Master Plan 5	Master Plan 6	Master Plan 7
<b>Covered area</b>							
Distribution Nbr of localities	Nabatiyeh 27	South Lebanon 24	South Lebanon 90	South Lebanon 55	South Lebanon 28	Nabatiyeh	Nabatiyeh
Nbr of Water systems	7 (northern ,Western ,Middle, Southern, Nabatiyeh , Arnoun/Yohmor , Zaoutar )	5 (Middle , Northern, Eastern,Coastal,Southern)	15 (Kfar Dounine, Maaroub, Haddatha, Kafra,Saddiqine, Mansouri, Hanaouay, Deir AAmes, Maarakeh-Tayr debba, Aaytit, Chehabiyeh, Borj Ech chemali, Sour, Es soultaniyeh, Ramiyeh)	3 ( Bisri – Kfaroue - Faouar System,Brak Spring- Qennarit System,Al Tassa System)	6 (Ain Toghra System,Kfar Houneh System,Jezzine System,Benouati System,Aaramta System,Srayri System)	1- Halta-Kfar Chouba Subsystem 2- Hebbariyeh ( Fardis-Abou Qamha- Kaoukaba Hebbariye Kfarhamam-Rachaiya-El Fokhar -Meri Hebbariye old PS. Chouaya- in Qenia -Hebbariye New PS Chouaya Central Reservoir -Chouaya -Ain Qinia-New PS Chouaya Central Reservoir -Hasbaiya- Ain Jarfa ) 3-Hasbaiya Subsystem 4- Kalout 5- Kfeir 6- Marj Ez Zouhour 7- Wazzani PS. Taybeh El Tall -Krkakila-Deir Mimas-Borj El Mlouk -Qlaiaa-Marjaayoun - Wazzani PS. Wata El Khiam-Khiam/Ain Aarab and Majidiyeh	1- Taybeh WTP- 2-Saf El Hawa 3- Markaba 4- Balaweel 5- Taybeh 6- Qobou 7- Chaqra
<b>Population</b> Present (2020)	353,109	216,384	569,101	331,321	51,660	101,556	68,625
<b>Subscribers</b>							
Metered							
Gauged							
All (2020)	34,091	14,443	31,573	53,216	6,247	13,813	28,035
<b>Use</b>	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply
<b>Consultant</b>	BTD	BTD	BTD	DAR	DAR	Khatib & Alami	Khatib & Alami
<b>Description and Scope of works</b>	Tasks ncludes reviewing, updating and completing the 2014 master plan of Nabatiye area by calculating the water needs, assessing the water resources, establishing the water balance and finding solutions to supply the study area localities with water, selecting the works to be executed and estimating their cost as well as selecting a priority scale for their implementation.	Tasks ncludes reviewing, updating and completing the 2014 master plan of Nabatiye area by calculating the water needs, assessing the water resources, establishing the water balance and finding solutions to supply the study area localities with water, selecting the works to be executed and estimating their cost as well as selecting a priority scale for their implementation.	Tasks includes reviewing, updating and completing the 2014 master plan of Nabatiye area by calculating the water needs, assessing the water resources, establishing the water balance and finding solutions to supply the study area localities with water, selecting the works to be executed and estimating their cost as well as selecting a priority scale for their implementation.	Tasks includes reviewing, updating and completing the 2014 master plan of Nabatiye area by calculating the water needs, assessing the water resources, establishing the water balance and finding solutions to supply the study area localities with water, selecting the works to be executed and estimating their cost as well as selecting a priority scale for their implementation.	Tasks includes reviewing, updating and completing the 2014 master plan of Nabatiye area by calculating the water needs, assessing the water resources, establishing the water balance and finding solutions to supply the study area localities with water, selecting the works to be executed and estimating their cost as well as selecting a priority scale for their implementation.	Tasks includes reviewing, updating and completing the 2014 master plan of Nabatiye area by calculating the water needs, assessing the water resources, establishing the water balance and finding solutions to supply the study area localities with water, selecting the works to be executed and estimating their cost as well as selecting a priority scale for their implementation.	Tasks includes reviewing, updating and completing the 2014 master plan of Nabatiye area by calculating the water needs, assessing the water resources, establishing the water balance and finding solutions to supply the study area localities with water, selecting the works to be executed and estimating their cost as well as selecting a priority scale for their implementation.
<b>Status</b>	Completed	Completed	Completed	Completed	Completed	Completed	Completed
<b>Time frame</b>							
Start date	2018	2018	2018	2018	2018	2018	2018
End date/Duration	2020	2020	2020	2020	2020	2020	2020
<b>Additional Info</b>	Dar El handasah Taleb prepared a master plan in 2014, but no actions were taken since that time. In 2018, SLWE decided to update this water master plan and retained BTD for this aim. The master plan is currently under implementation. As part of the proposed works, the SLWE is executing Mega projects to increase the capacity of the production from the main sources in springs of Ghalle, Nabaa Al tasse and Aalman.	Dar El handasah Taleb prepared a master plan in 2014, but no actions were taken since that time. In 2018, SLWE decided to update this water master plan and retained BTD for this aim. The master plan is currently under implementation. As part of proposed works, the SLWE is constructing a pumping station at El Brak springs and is planning to upgrade the yield of Tefhahta pumping stations all with the objective to upgrade the water systems in the studied area.	Dar El handasah Taleb prepared a master plan in 2014, but no actions were taken since that time. In 2018, SLWE decided to update this water master plan and retained BTD for this aim. The master plan is currently under implementation. As part of proposed works, the SLWE is currently executing works to upgrade the yield of the pumping stations of Wadi Jilo, Ras El ain, Batoulay and others associated infrastructure, all with the objective to upgrade the water systems in the studied area.	Dar El handasah Taleb prepared a master plan in 2014, but no actions were taken since that time. In 2018, SLWE decided to update this water master plan and retained Dar El Handassa (Shair and partners) for this aim. The master plan is currently under application and new projects will be implemented when funds are found.	Dar El handasah Taleb prepared a master plan in 2014, but no actions were taken since that time. In 2018, SLWE decided to update this water master plan and retained Dar El Handassa (Shair and partners) for this aim. The master plan is currently under application and new projects will be implemented when funds are found.	Dar El handasah Taleb prepared a master plan in 2014, but no actions were taken since that time. In 2018, SLWE decided to update this water master plan and retained Khatib and Aalami for this aim. The master plan is currently under application and new projects will be implemented when funds are found.	Dar El handasah Taleb prepared a master plan in 2014, but no actions were taken since that time. In 2018, SLWE decided to update this water master plan and retained Khatib and Aalami for this aim. The master plan is currently under application and new projects will be implemented when funds are found.
<b>LTTA Assessment</b>	<u>Current situation:</u> The Master plan is in use and under implementation. <u>Recommendations:</u> No actions in terms of master planning are required.	<u>Current situation:</u> The Master plan is in use and under implementation. <u>Recommendations:</u> No actions in terms of master planning are required.	<u>Current situation:</u> The Master plan is in use and under implementation. <u>Recommendations:</u> No actions in terms of master planning are required.	<u>Current situation:</u> The Master plan is in use and under application. <u>Recommendations:</u> No actions in terms of master planning are required.	<u>Current situation:</u> The Master plan is in use and under application. <u>Recommendations:</u> No actions in terms of master planning are required.	<u>Current situation:</u> The Master plan is in use and under application. <u>Recommendations:</u> No actions in terms of master planning are required.	<u>Current situation:</u> The Master plan is in use and under application. <u>Recommendations:</u> No actions in terms of master planning are required.



**Legend**

- Master Plan to be Completed
- No Action Needed
- New Master Plan Required

Area of intervention	Current situation	LTTA Assessment / Recommendations
North Beqaa (Hermel, Laboueh)	Existing master plan for Hermel Area	Prepare a new master plan for Labboue Area
Baalbek, Deir el Ahmar, Chmistar	Existing master plan for Baalbeck is executed (70%) while the master plan for Deir El Ahmar and Chmistar require an review and update	Prepare a master plan for Deir El Ahmar and Chmistar Areas
Zahleh, Chtaura, Riyaq	Master plan covers only the city of Zahle	Complement and update the Master plan
South Beqaa (Joubb Jannine, Machghara)	Existing master plan currently being implemented	Some updates are needed
South Beqaa (Rachaiya)	Existing master plan currently being implemented	Some updates are needed

*For more details see next page*



EU-AFD TECHNICAL ASSISTANCE PROGRAMME TO SUPPORT REFORMS IN THE WATER AND WASTEWATER SECTORS IN LEBANON

DRINKING WATER MASTER PLANS STATUS & PROPOSED ACTION

**BWE**



**CONSULTANT**

November 2022



	Master Plan 1	Master Plan 2	Master Plan 3	Master Plan 4	Master Plan 5
<b>Covered area</b>					
Distribution District	Hermel, Labboue	Baalbek, Deir el Ahmar, Chmistar	Zahleh, Chtaura, Riyaq	Joubb Jannine, Machghara	Rachaiya
Nbr of localities	37	110	52	44	35
Nbr of Water systems	3	23	5	10	9
<b>Population</b>					
Present	97,500	561,447	491,000	181,780	81,357
Projected (2035)	121,762	610,035	533,377	197,441	88,382
<b>Subscribers</b>					
Metered					
Gauged June (2022)	2,977	31,341	36,752	14,294	4,878
<b>Use</b>	Water Supply	Water Supply	Water Supply	Water Supply	Water Supply
<b>Consultant</b>	Kredo	Kredo	Kredo	Kredo	Kredo
<b>Description and Scope of works</b>	Master Plan within the Service Area of the Bekaa Water Establishment for the planning horizon of 2035. A detailed assessment of the existing situation was carried out and Capital Investment Plans and Priority Action Plans for water supply and wastewater systems were developed to provide full service to the population of the Bekaa which was projected to reach 1.5 million residents in 2035. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	Master Plan within the Service Area of the Bekaa Water Establishment for the planning horizon of 2035. A detailed assessment of the existing situation was carried out and Capital Investment Plans and Priority Action Plans for water supply and wastewater systems were developed to provide full service to the population of the Bekaa which was projected to reach 1.5 million residents in 2035. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	Master Plan within the Service Area of the Bekaa Water Establishment for the planning horizon of 2035. A detailed assessment of the existing situation was carried out and Capital Investment Plans and Priority Action Plans for water supply and wastewater systems were developed to provide full service to the population of the Bekaa which was projected to reach 1.5 million residents in 2035. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	Master Plan within the Service Area of the Bekaa Water Establishment for the planning horizon of 2035. A detailed assessment of the existing situation was carried out and Capital Investment Plans and Priority Action Plans for water supply and wastewater systems were developed to provide full service to the population of the Bekaa which was projected to reach 1.5 million residents in 2035. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.	Master Plan within the Service Area of the Bekaa Water Establishment for the planning horizon of 2035. A detailed assessment of the existing situation was carried out and Capital Investment Plans and Priority Action Plans for water supply and wastewater systems were developed to provide full service to the population of the Bekaa which was projected to reach 1.5 million residents in 2035. All technical recommendations were aligned with the National Water Sector Strategy adopted by the Lebanese Government and proposed works were optimized to reduce operation & maintenance and energy costs. Detailed cost estimates were developed by project components, types of work and cazas.
<b>Data base</b>					
Networks - Transmission lines(kms)	100	467	256	459	345
Reservoirs	19	131	52	66	50
Wells	41	97	54	51	48
Booster pumps	1	4	4	6	1
Springs	11	23	10	12	4
<b>Status</b>	Completed for Hermel Caza	Completed for Baalbek Caza	Completed for Zahle City	Completed	Completed
<b>Time frame</b>					
Start date	2013	2013	2013	2013	2013
End date/Duration	2015	2015	2015	2015	2015
<b>Additional Info</b>	In addition to the Water master plan, 2 masters plan for wastewater and irrigation were prepared also by the same consultant. Later to the Kredo's master a second master plan was prepared by Dar Taleb upon the request of CDR.	In addition to the Water master plan, 2 masters plan for wastewater and irrigation were prepared also by the same consultant. A second master plan is under implementation financed by the World bank for the area of Baalbek	In addition to the Water master plan, 2 masters plan for wastewater and irrigation were prepared also by the same consultant. It should be noted that a partial master plan was prepared for the Zahle district by BTD and funded by the CDR.	In addition to the Water master plan, 2 masters plan for wastewater and irrigation were prepared also by the same consultant. It should be noted that a master plan was also prepared Rafic Khroury funded by the MoEW for West Beqaa and Rachaya district.	In addition to the Water master plan, 2 masters plan for wastewater and irrigation were prepared also by the same consultant. It should be noted that a master plan was also prepared Rafic Khroury funded by the MoEW for West Beqaa and Rachaya district.
<b>LTA Assessment Recommendations</b>	<u>Current situation:</u> The master plan for hermel district is under implementation and the execution of works is awaiting the funding. The Master plan in use for Labboue requires to be revised and updated to consider the output of the new strategy and to take into account the demographic, infrastructures and water resources changes and to base the design of the master on realistic water resources balance. <u>Recommendations:</u> Prepare a new Master plan for the area of of Labboue.	<u>Current situation:</u> 70 % of works at Baaalbeck caza are completed and the rest is awaiting funding. The master plan for Deir El Ahmar and Chmisater is outdated. <u>Recommendations:</u> Prepare a new Master plan for the area of Deir El Ahmar and Chmistar.	<u>Current situation:</u> The partial master plan covers only the city of Zahle. In addition, the output of the new strategy and the demographic, infrastructures and water resources changes are not included in the master plan in use. <u>Recommendations:</u> Complement and update the Master plan for the area of Zahleh.	<u>Current situation:</u> The output of the new strategy and the demographic, infrastructures and water resources changes are not reflected in the master plan in use. <u>Recommendations:</u> No further actions needed	<u>Current situation:</u> The output of the new strategy and the demographic, infrastructures and water resources changes are not reflected in the master plan in use. <u>Recommendations:</u> No further actions needed