Research Terms of Reference

Assessing the impact of community attitudes and institutional capacities in water resource management: A Social-Ecological Analysis in Lebanon

LBN2401

Lebanon

June 2024
Version 1.0

IMPACT Shaping practices Influencing policies Impacting lives

1. Executive Summary

Country of intervention	Lebanon					
Type of Emergency	□	Natural hazard	□	Conflict	x	Other *(Socio-Ecological)*
Type of Crisis	□	Sudden onset	x	Slow onset	x	Protracted
Mandating Body/ Agency	EU-MADAD Fund					
IMPACT Project Code	11AQL 1J5					
Overall Research Timeframe *(from research design to final outputs / M&E)*	20/05/2024 to 30/09/2024					
Research Timeframe[1]	1. Pilot/ training: 19/08/2024		6. Preliminary presentation: 20/09/2024			
	2. Start collect data: 22/08/2024		7. Outputs sent for validation: 20/09/2024			
	3. Data collected: 07/09/2024		8. Outputs published: 26/09/2024			
	4. Data analysed: 13/09/2024		9. Final presentation: 25/10/2024			
	5. Data sent for validation: 13/09/2024					
Number of assessments	x	Single assessment (one cycle)				
	□	Multi assessment (more than one cycle)				
Humanitarian milestones *Specify **what** will the assessment inform and **when** e.g. The shelter cluster will use this data to draft its Revised Flash Appeal;*	**Milestone**		**Deadline (can be tentative)**			
	□	Donor plan/strategy	_ _/_ _/_ _ _ _			
	□	Inter-cluster plan/strategy	_ _/_ _/_ _ _ _			
	□	Cluster plan/strategy	_ _/_ _/_ _ _ _			
	x	NGO platform plan/strategy	30/11/2024			
	x	Other (Specify): Convergences Forum	26/09/2024			
	Audience type		**Dissemination**			

[1] The presentation will be sometime in September 2024. The final report (output type to be discussed) will be completed and disseminated at the end of the project in Jan 2025.

Audience Type & Dissemination *Specify **who** will the assessment inform and **how** you will disseminate to inform the audience*	x Strategic □ Programmatic □ Operational □ [Other, Specify]	□ General Product Mailing (e.g. mail to NGO consortium; HCT participants; Donors) □ Cluster Mailing (Education, Shelter and WASH) and presentation of findings at next cluster meeting [x] Presentation of findings (e.g. at HCT meeting; Cluster meeting) □ Website Dissemination (Relief Web & REACH Resource Centre) □ [Other, Specify]
Stakeholder mapping *Has a detailed stakeholder mapping been conducted during research design to identify all actors that could **contribute** to and/or **benefit from** the research?*	x Yes	□ No
General Objective	To assess the extent to which communities' attitudes, institutional capacities and service provision influence water management. The study aims to highlight the interconnectedness of governance structures, service availability and household perceptions to inform key stakeholders' targeted advocacy initiatives.	
Specific Objective(s)	1. To quantify differences in access to and quality of water services in distinct geographical units (river basins will be used as a layer for characterising the areas). 2. To assess household level factors of positive environmental behaviour[2] and awareness of environmental policies (laws, regulations, community initiatives). 3. To leverage research findings to shape targeted advocacy plans aimed at institutional cost recovery and positive environmental behaviours.	
Research Questions	1. What are the differences in access to and quality of water services across distinct geographical units characterized by three river basins? 2. To what extent do household-level factors influence environmental behaviour and responsiveness to policies? 3. To what extent do existing institutional frameworks address community needs and preferences in water management?	
Geographic Coverage	Al-Ghadir river basin in Mount Lebanon Al-Ostuan river basin in North Lebanon Al-Assi river basin in the Beqaa	
Secondary data sources	- Al- Assi River Basin Management Plan - Al- Ostuan River Basin Management Plan - Al- Ghadir River Basin Management Plan - National Water Sector Strategy 2020-2035 (Report published by Lebanese Ministry of Energy and Water in 2020) - Community Perception Research (CPR) Studies conducted by consoritum partner under the same project (Hawkamaa-EU)	

[2] Solid waste disposal practices within the household, awareness of sources of water pollution, water conservation methods applied, willingness to adapt to environmental-friendly methods in the household

	- Assessment of the Water Situation in Lebanon. Health & Environment Department, Lebanese University, Tripoli, Lebanon. - Baseline Report on the assessment of the current water resources on the Nahr Al Ostuan Basin. - Global Human Settlement population density [GHSL]: 100 m resolution, 2020					
Population(s) *Select all that apply*	□	IDPs in camp		□	IDPs in informal sites	
	□	IDPs in host communities		□	IDPs [Other, Specify]	
	□	Refugees in camp		□	Refugees in informal sites	
	□	Refugees in host communities		□	Refugees [Other, Specify]	
	x	Host communities		x	River basin stakeholders: Municipalities, Households.	
Stratification *Select type(s) and enter number of strata*	□	Geographical #: Municipality in a river basin Population size per strata is known? X Yes □ No	□	Group #: _ _ _ Population size per strata is known? □ Yes □ No	□	*[Other Specify]* #: _ _ Population size per strata is known? □ Yes □ No
Data collection tool(s)	x	Structured (Quantitative)		x	Semi-structured (Qualitative)	
	Sampling method			**Data collection method**		
Structured data collection tool # 1 *Select sampling and data collection method and specify target # interviews*	□ Purposive □ Probability / Simple random x Probability / Stratified simple random □ Probability / Cluster sampling □ Probability / Stratified cluster sampling □ [Other, Specify]			□ Key informant interview (Target #):-_ _ _ _ _ □ Group discussion (Target #):_ _ _ _ _ x Household interview (Target #):626 □ Individual interview (Target #):_ _ _ _ _ □ Direct observations (Target #):_ _ _ _ _ □ [Other, Specify] (Target #):_ _ _ _ _		
Semi-structured data collection tool (s) # 1 *Select sampling and data collection method and specify target # interviews*	x Purposive □ Snowballing □ [Other, Specify]			x Key informant interview (Target #):12 □ Individual interview (Target #):_ _ _ _ _ □ Focus group discussion (Target #):_ _ _ _ _ □ [Other, Specify] (Target #):_ _ _ _ _		
Target level of precision if probability sampling	95 % level of confidence			10 +/- % margin of error		
Disaggregation by gender and age *Are you planning to conduct sex/age disaggregated analysis?*	Gender			Age		
	□	Yes		□	Yes	
	X	No		x	No	
Data management platform(s)	X	IMPACT		□	UNHCR	
	□	[Other, Specify]				
	□	Situation overview #: _ _	□	Report #: _ _	□	Profile #: _ _

Expected ouput type(s)	X	Presentation (Preliminary findings) #: 01	x	Presentation (Final) #: 01	x	Factsheet #: 01
	□	Interactive dashboard #:_	□	Webmap #: _ _	□	Map #: _ _
	□	[Other, Specify] #: _ _				
Access	x	Public (available on IMPACT resource center and other humanitarian platforms)				
	□	Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms)				
Visibility *Specify which **logos** should be on outputs*	***IMPACT***					
	Donor: EU-MADAD					
	Coordination Framework: ACTED, SI					
	Partners: N/A					

2. Rationale

2.1 Background

Lebanon faces its fifth year of financial turmoil, with its currency losing over 95% of its pre-crisis value. Basic service costs, including electricity, water, and gas have surged, with an inflation rate reaching 221% in 2023. The corresponding fuel crisis affected electricity supply, which directly impacted water and wastewater service delivery at the household level. Nearly 2.8 million people are struggling to access safe and adequate amounts of water, aggravated by increasing poverty and deprivation from accessing basic services.

Lebanon's geographical location and topography attracts substantial annual precipitation. Despite investments of over 4 billion USD in the water and wastewater sectors over the past 30 years, the country still grapples with **chronic water supply shortages and drought**.[3] Population growth, haphazard urbanization, agriculture & industrial activity, and climate change heavily impact both quantity and quality of water. The combination of inadequate tariff, low collection & subscription rates, unpaid arrears, and high non-revenue water undermine the viability of the water establishments and impair their ability to cover operation and maintenance expenditures.[4] Lebanon's available water resources have dropped below the annual threshold, and pollution levels in multiple water sources have rendered them unable to meet their designated use. With over forty rivers across Lebanon, the uncontrolled discharge of point and non-point sources of pollution continue to degrade water quality of Lebanese rivers, springs, and wetlands.[5]

Aligned with the 2022 roadmap of recovery of the water sector in Lebanon- the Ministry of Energy and Water (MoEW) recommends among others**, commercial improvements to improve subscription** and collection rates through targeted communication campaigns. On the other hand, donors have stressed the importance of **community engagement to improve conservation of national water resources in Lebanon**. The EU action plan for 2022 highlights **the need to improve public awareness of water management on the environment and promote a culture of payment for water services.**

Effective water management within river basins is crucial for ensuring sustainable water resources and institutional cost recovery. In Lebanon, **variations in service availability and quality** across different geographical units within river basins present significant challenges to achieving equitable water management. **Existing institutional capacities, including operation and maintenance practices, policies, staff capacity, and infrastructure**, play a critical role in determining the success of water management efforts. However, these efforts often fail to consider the critical role of community perceptions and attitudes, which significantly influence the acceptance, reliability, and effectiveness of water management interventions.

[3] Climate change and environmental program, Issam Fars Institute for Public Policy and International Affairs. American University of Beirut, Lebanon. G. Gharios and N. Farajalla.

[4] Roadmap to recovery of the water sector in Lebanon. Ministry of Energy and Water (MoEW). Lebanese Republic. May 2022

[5] SOER. 2020

Water management within river basins in Lebanon face significant challenges due to service inequities and varying institutional capacities. Despite efforts to improve infrastructure and policies, **the impact of community attitudes on service reliability and environmental conservation remains underexplored**. This study addresses **how community perceptions and institutional capacities intersect to influence water management outcomes**, which is essential for developing targeted advocacy plans, central to the uptake of policy instruments targeting communities.

3. Methodology

3.1 Social-Ecological Models - Introduction

A people-centred approach in research is essential for addressing complex environmental challenges because it places the needs, behaviours, and perceptions of communities at the forefront of the analysis. This approach ensures that solutions are not only scientifically sound but also socially acceptable and sustainable. By prioritizing community engagement and incorporating local knowledge, researchers can develop more effective and equitable strategies that resonate with the affected populations and foster greater community participation and ownership. Several global frameworks and approaches aimed at describing and quantifying **the interactions between water resources and human societies** have been instituted. These frameworks include concepts such as Ecosystem Services, Nature-Based Solutions, the Food-Energy-Water Nexus, and Integrated Water Resources Management (IWRM). The social-ecological system (SES) is rooted in interdisciplinary fields such as ecology, sociology, and economics.[6] SES analysis explores how human behaviours, institutions, and ecological processes interact within complex systems. By integrating insights from diverse disciplines, SES frameworks provide a comprehensive perspective for understanding and managing sustainability challenges. They offer a holistic approach that recognizes the dynamic and interdependent nature of social-ecological relationships, crucial for addressing contemporary environmental issues.

The SES model recognizes **the interplay between social and ecological systems** and complements the Ministry of Energy and Water (MoEW) priority of commercial improvements **by incorporating social factors such as institutional trust and reliability which influence subscription rates.** The model also recognizes **the importance of community participation and empowerment in natural resource management by assessing community driven positive environmental behaviours.**

3.2. Methodology overview

The study will employ a mixed methods approach, incorporating both structured household surveys and semi-structured key informant interviews with stakeholders and actors within the river basins. This methodology will be supplemented with a secondary data review from the river basin and community perception surveys focusing on environmental behaviours and institutional trust. By integrating these diverse data sources, the analysis will develop a contextual structural equation modelling (SEM) model, which will be refined to accurately represent the complex interactions within the river basins.

3.2 Population of interest

The population of interest is the Lebanese population living within the 3 river basins Assi, Al Ostuan and Ghadir and defined geographically by the selected municipalities boundaries. This population group, have access to diverse water resources, water network, wastewater infrastructures and under the management of the basin water establishments. In addition, the population of interest have access to agriculture areas affected by the water balance and availability within the basin. Within each river basin, the municipalities (or villages) were selected based on the following criteria:

[6] Cabello, V., B. Willaarts, M. Aguilar, and L. del Moral. 2015. River basins as social-ecological systems: linking levels of societal and ecosystem water metabolism in a semiarid watershed. Ecology and Society 20(3): 20.

- Highest population density [GHSL]
- Service coverage of water + wastewater services [River Basin Management plans] priority services
    - Presence of at least 1 local water establishment office in the area
    - Presence of at least 1 water pumping station
    - Connected to at least 1 wastewater treatment plant in the area
    - High concentration of private and public wells
    - Presence of a sewage network
- Land use Land cover [CNRS]
    - Presence of at least two high water demand fabric (Urban + Agricultural/Industrial)
- Accessibility based on current security context

River Basin	# Villages/ Municipalities	#HH	Village/ Municipality selected	#HH	Selection Criteria
Al Assi	51	69256	Hermel	10600	Accounts for 15% of the river basin HH population High proportion of agricultural lands Meets 4/5 of priority services
			Baalbak-laat	17326	Accounts for 25% of the river basin HH population Meets 5/5 of priority services
Al Ghadir	35	90889	Aley	3070	Accounts for 3% of the river basin HH population Meets 3/5 of priority services Selected due to access constraints in other regions
			Kfarchima	2371	Accounts for 2.6% of the river basin HH population Meets 2/5 of priority services Selected due to access constraints in other regions
Al Ostuane	50	17831	Al Koubayet	2012	Accounts for 11% of the river basin HH population Meets 5/5 of priority services
			Akkar El Atika	2299	Accounts for 13% of the river basin HH population Meets 4/5 of priority services

KIIs will thus be conducted with public institutions, notably the local offices of water establishments and municipalities within the selected areas. KIIs will also be conducted with relevant actors from the water sector, particularly industrial, agricultural and commercial actors alongside LNGOs and INGOs.

The identification of study sites is annexed in Annex 1.

3.3 Secondary data review

A secondary data review will be undertaken looking at existent material and research pertaining to river basin management, and more specifically at water-resource related interactions. The review will enable a better contextual and technical understanding of water resource management within the selected areas. It will also map gaps in the available data on current water management to be explored further through quantitative and qualitative data collection and analysis.

Below is the list of secondary data that will be used in this research.

Secondary source	Purpose of source
Al- Assi River Basin Management Plan (Published by ACTED) Al- Ostuan River Basin Management Plan (Published by ACTED) Al- Ghadir River Basin Management Plan (Published by ACTED)	- Contextual understanding - Key definitions
National Water Sector Strategy 2020-2035 (Report published by Lebanese Ministry of Energy and Water in 2020)	- Triangulating primary data and findings
EU Action Plan 2022 (Report published by the European Commission in 2022)	
Community Perception Research (CPR) Studies	

Materials will be compiled from a range of documents, reports, factsheets, and related materials produced by actors with knowledge of the overall context and specific sectors.

3.4 Primary Data Collection

Household survey

Stratified simple random will be used, the sample size per river basin counts to be between 203 and 212 households, with a total of 626 households interviewed over the three river basins. The selection criteria for the river basin were based on the population size (source: GHSL population data - remote sensing), water resources, the presence of waste water treatment plant (WWTP) and the agricultural lands.

Sampling Methodology

The sampling approach used for this study is Simple Random Sampling Stratified by Municipality. The selected municipalities serve as strata, with the total household (HH) population within each municipality considered as the population. The simple random stratified was applied to ensure that the survey sample is representative across the three river basins.

Sampling Tool

IMPACT Online Sampling Tool was utilized to determine the sample size based on the following criteria:

- Confidence Level (CL): 95%
- Margin of Error (MoE): 10%
- Buffer: 10%

GIS-Based Random Point Generation

Within each stratum (municipality), random points were generated using the Random Points Generation tool in GIS. This means that every household within a selected municipality has an equal chance of being included in the sample. Each point represents a household and is uniquely coded with the municipality's initials followed by a sequential number (e.g., AKK-12).

An overview of relevant household is as follows:

River Basin	Municipality/Village	Water system ID	Population	# of Households (95% CL, 10% MoE, 10% Buffer)
Al Assi	Hermel	WS18	10600	106
	Baalbek + Iaat	WS13 WS08	17326	106
Al Ghadir	Kfarchima	WS08	2371	104
	Aley	WS01	3070	104
Al Ostuan	El Koubayat	C19:	2012	103
	Akkar El Atika	C20 C21	2299	103

Household-level data collection is planned to begin in August 2024 and is expected to last around two weeks, to be completed by August. All data is expected to be collected through in-person, face-to-face interviews that will last about 30 minutes. Regarding gender sensitivities, interviews will be held by both a male and female enumerators pairs in each of the randomly selected households. A data collection assistant will be constantly present on the field alongside enumerators, while field officers will complete random check-ups on them at least once a week. In all instances, enumerators will focus on interviewing the person with the most knowledge about the household, as identified by household members. Enumerators will ensure to collect informed consent from the respondent before starting the interview, clearly explaining the purpose and duration of the assessment and what it implies to participate. They will clearly explain that the respondent is free to choose not to participate and to terminate the interview at any stage. If that person is unavailable, enumerators will attempt to interview the next individual with the greatest knowledge of household circumstances or will move to the next household. Minors will not be selected for participation under any circumstances. The assessment team will take all necessary measures stipulated in the global IMPACT Standard Operation Procedure for Management of Personally Identifiable Information to protect and safeguard personal data and to minimize the risk of attributing findings to specific individuals or households.

Access restrictions caused by security concerns that may arise due to the ongoing cross-border conflict may limit movement of field staff from the base in Beirut. The security situation will be monitored on a weekly basis, and the switch to a contingency methodology (which could consist of remote data collection or key informant interviews), may be triggered. The contingency plan scenarios are annexed in Annex 2.

Enumerator training and tool revision will be undertaken by IMPACT, as well as data monitoring, cleaning and monitoring of enumerators. Training sessions for field officers will be conducted by IMPACT assessment team. Field officers will then proceed to train data collection assistants and enumerators. Trainings sessions are expected to last a total of 3 days. Once data collection is complete, data processing and analysis will be completed by the IMPACT assessment officer.

Key informant interviews

Semi-structured interviews will be conducted via purposive sampling of pre-identified stakeholders. These stakeholders will have been identified through a key informant pool deducted from consultations with consortium partners and water sector advocates. Preliminary findings of the household survey as well as secondary data sources could also be used to identify further stakeholders for interviews.

An overview of relevant stakeholders is as follows (minimum of 12 in total):

Stakeholders	**Number**
Municipalities	6 (2 per river basin, the selected municipalities based on selection criteria)
Regional Water Establishments (RWEs)	3 (1 per river basin)
Additional stakeholders: UoM, CSO, LNGO, mukhtar, INGO, industries (industrial, commercial, agricultural)	TBC

Tool development and interviews will be completed by IMPACT assessment team. Interviews will be conducted by a facilitator alongside a note-taker. Facilitators will ensure to collect informed consent from the interviewee before starting the interview, clearly explaining the purpose and duration of the assessment (around 30 minutes) and what it implies to participate. Once data collection is completed, data processing and analysis will be completed by the IMPACT assessment officer.

3.5 Data Processing & Analysis

After primary data cleaning, data will be consolidated with **a secondary dataset using pre-identified units called water systems**[7] as common intersection data column (joining column). Data will be reshaped to ensure treatment of outliers, missing variables and inconsistent data. Composite indicators will be developed for a set of atomic indicators associated with a latent variable (detailed in the DAP).

Structural equation modelling (SEM)[6] is a statistical technique used to analyse the relationships between observed and latent (unobserved) variables. It allows researchers to test complex hypotheses about how variables are interrelated within a theoretical framework. SEM can assess both the direct and indirect effects of variables on one another, providing insights into causal pathways and overall model fit.

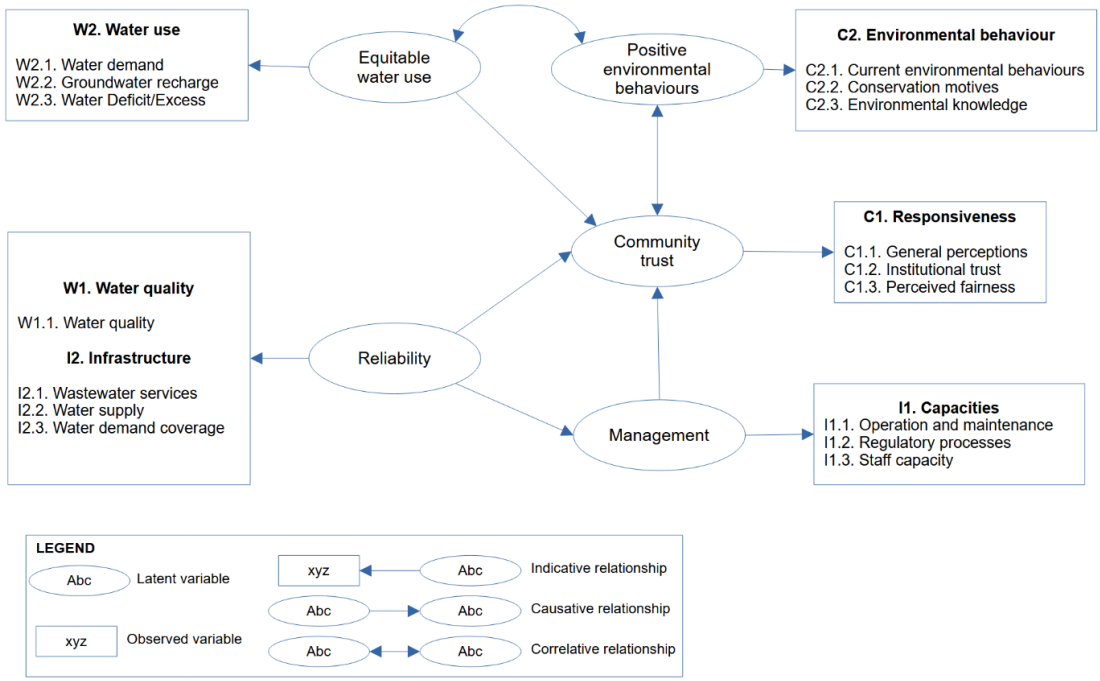
In a SEM diagram, the arrows indicate the directional relationships between variables, and strength of association. Error variances in SEM represent the unexplained variability in observed variables and are estimated as part of the model fitting process to assess the overall fit of the model.

Structural equation modelling (SEM) comprises five essential stages[8]. These stages involve specifying the model, identifying variables, estimating parameters, evaluating the model, and making modifications as necessary.

1. Model Specification: The first step in SEM analysis is the hypothetical model specification. It occurs before both data collection and modelling. This entails crafting a theoretical framework that delineates variables and their interconnections, drawing from existing literature and theory.

   The following preliminary model was developed considering the secondary data review that will quantify the impacts of observed variables (in rectangles) on latent factors (in circles). The strength of association between latent variables will be assessed, and the model estimation for positive environmental behaviours and community responsiveness to policies/advocacy will be developed.

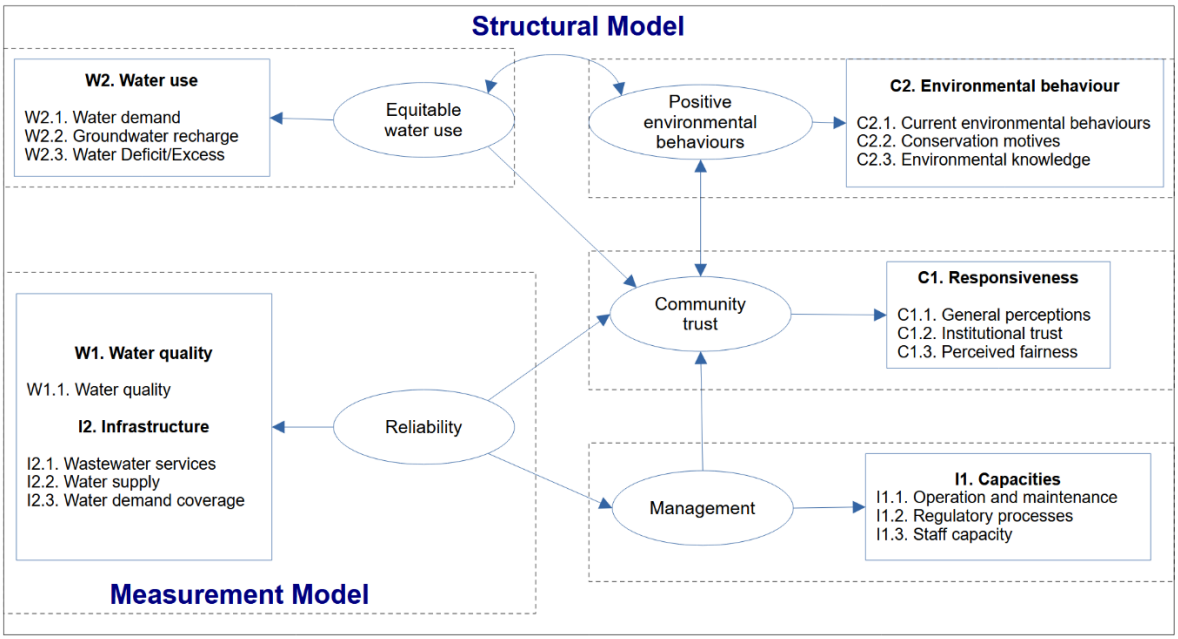
[7] A water system can be defined as the process of supplying water to a community. It includes the infrastructure for the transmission, collection, storage and distribution of water for domestic, commercial, industrial and agricultural use within determined boundaries.
[8] Structural Equation Modeling: https://www.statisticssolutions.com/free-resources/directory-of-statistical-analyses/structural-equation-modeling/



2. Model Identification: Model identification is a property of the model itself, and not of the data. This step specifically determines whether there is a unique solution in our data for all the free parameters in our model. Parameters are typically represented by the arrows or paths between the SEM components, which are usually latent variables and observed variables, and those can have fixed value or free (to be estimated).

3. Model Estimation: Structural modelling equation uses an iterative feature also known as fitting function. The fitting function is used to minimize the difference between the observed covariance matrix S and the estimated theoretical covariance matrix P, and hence, it improves the primary estimates of parameter with iterative calculation cycle. The final estimates give the best fit parameter to the observed covariance matrix S.

4. Model Testing: Structural equation modelling helps in concurrent analysis of both indirect and direct relationship among manifest (observable) and latent variables. The model testing includes the analysis of two conceptually distinct models such as structural and the measurement model. The measurement model serves as the foundation for understanding how well the observed variables represent the underlying theoretical constructs (latent) in SEM. The measurement model is to be converted into structural model by assigning relationships from one construct (latent) to another based on the proposed theoretical model.



Evaluation of SEM is generally based on fit indices to test the single path coefficient such as p value and standard error and for the overall model such as χ2, RMSEA.

There are many types of model-of-fit indices, for our analysis we propose using "Absolute fit indices". The Absolute fit indices measure the overall goodness of fit for both the structural and measurement models collectively. It is the indices which show how well a priori model will be fitting in the sample data. It also shows which model has the best fit among the proposed models.

Below is the classification of fit indices and their cutoff value.

Absolute fit indices	**Name**	**Cutoff value**
Model chi-square (χ2)	Chi-square	Insignificant result (p > 0.05)
χ2/df	Relative/normed chi-square	Value of <2.0
RMSEA	Root means square error of approximation	Value between 0.08 and 0.10 (mediocre fit),
GFI	Goodness of fit statistics	Value >0.90 or >0.95
AGFI	Adjusted goodness of fit statistics	Value of >0.80
RMR	Root means square residual	N/A
SRMR	Standardized root means square residual	Value of <0.05

5. Model Modification: This is the final step of structural equation modelling. The objective of this step is to modify the model so that to explore the best-fitted model which fits the data perfectly. The final most converged model developed will generate findings on strength of association between latent variables and to what degree they are intertwined.

3.6 Limitations

Conducting this research presents limitations that we can enumerate as follows:

1- Access: limited access to certain area such as Akkar and the Beqaa might affect the research due to their proximity to the Syrian border and ongoing conflicts.
2- Incomplete data: Access to certain areas may be restricted due to resistance from local or non-state actors, particularly in these regions. These challenges may affect access to these areas and ultimately the sample size and general comprehensiveness of the study.
3- Analysis technique: Model is a proof of concept and relates to the underlying assumptions made. It is often employed as a statistical means to test predictive hypotheses. However, decision problems can occur in cases when there are two or more alternative models which make fundamentally different assumptions about the variables' relationships, but still lead to the exact same model fit, making it impossible to base a decision solely on statistical criteria.

4. Key ethical considerations and related risks

The proposed research design meets / does not meet the following criteria:

The proposed research design…	***Yes/ No***	***Details if no (including mitigation)***
… Has been coordinated with relevant stakeholders to **avoid unnecessary duplication** of data collection efforts?	Yes	
… **Respects respondents, their rights and dignity** (*specifically by: seeking informed consent, designing length of survey/ discussion while being considerate of participants' time, ensuring accurate reporting of information provided*)?	Yes	
… Does not **expose data collectors to any risks as a direct result** of participation in data collection?	No	Minimal risk on the safety of enumerators (Close monitoring will be prioritized from the security focal point as well as efficient communication in case of incidents)
… Does not **expose respondents / their communities to any risks as a direct result** of participation in data collection?	Yes	
… Does not involve **collecting information on specific topics which may be stressful and/ or re-traumatising** for research participants (both respondents and data collectors)?	Yes	
… Does not involve **data collection with minors** i.e. anyone less than 18 years old?	Yes	
… Does not involve **data collection with other vulnerable groups** e.g. persons with disabilities, victims/ survivors of protection incidents, etc.?	No	Training on referral pathways and protection protocols will be conducted.

… Follows IMPACT SOPs for management of **personally identifiable information**?	Yes	

5. Roles and responsibilities

Task Description	*Responsible*	*Accountable*	*Consulted*	*Informed*
Research design	Research Manager Deputy Research Manager Assessment Officer	Research Manager	IMPACT HQ	Donor, Consortium Partners
Supervising data collection	Field Officer	Senior Field Officer		
Data processing (checking, cleaning)	Deputy Research Manager	Deputy Research Manager		
Data analysis	Deputy Research Manager	Deputy Research Manager		
Output production	Deputy Research Manager Assessment Officer	Deputy Research Manager	IMPACT HQ	Consortium Partners
Dissemination	Deputy Research Manager	Research Manager	IMPACT HQ	Donor, Consortium Partners
Monitoring & Evaluation	Deputy Research Manager	Deputy Research Manager	IMPACT HQ	
Lessons learned	Deputy Research Manager Research Manager	Research Manager	IMPACT HQ	

Responsible: *the person(s) who executes the task*

Accountable: *the person who validates the completion of the task and is accountable of the final output or milestone*

Consulted: *the person(s) who must be consulted when the task is implemented*

Informed: *the person(s) who need to be informed when the task is completed*

6. Data Analysis Plan

7. Monitoring & Evaluation Plan

IMPACT Objective	External M&E Indicator	Internal M&E Indicator	Focal point	Tool	Will indicator be tracked?
Humanitarian stakeholders are accessing IMPACT products	Number of humanitarian organisations accessing IMPACT services/products Number of individuals accessing IMPACT services/products	# of downloads of x product from Resource Center	Country request to HQ	User_log	N/A
		# of downloads of x product from Relief Web	Country request to HQ		N/A
		# of downloads of x product from Country level platforms	Country team		N/A
		# of page clicks on x product from REACH global newsletter	Country request to HQ		N/A
		# of page clicks on x product from country newsletter, sendingBlue, bit.ly	Country team		N/A
		# of visits to x webmap/x dashboard	Country request to HQ		N/A
IMPACT activities contribute to better program implementation and coordination of the humanitarian response	Number of humanitarian organisations utilizing IMPACT services/products	# references in HPC documents (HNO, SRP, Flash appeals, Cluster/sector strategies)	Country team	Reference_log	*[List here relevant HPC-documents to be monitored: E.g. Iraq HNO 2018, Iraq Flash Appeal Mosul, Shelter Cluster strategy]* *[List here relevant agency-documents to be monitored: E.g. UNHCR Country Strategy, UNICEF WASH Response Strategy]*
		# references in single agency documents			
Humanitarian stakeholders are using IMPACT products	Humanitarian actors use IMPACT evidence/products as a basis for decision making, aid planning and delivery	Perceived relevance of IMPACT country-programs	Country team	Usage_Feedback *and* Usage_Survey template	*[Outline here the usage survey to be implemented for this research cycle* *E.g. Usage survey to be conducted in November 2017,*
		Perceived usefulness and influence of IMPACT outputs			
		Recommendations to strengthen IMPACT programs			

	Number of humanitarian documents (HNO, HRP, cluster/agency strategic plans, etc.) directly informed by IMPACT products				*following the release of x outputs, targeting at least 10 partners* *E.g. Usage survey to be conducted at the end of the research cycle related to all outputs, targeting at least 20 partners]*
		Perceived capacity of IMPACT staff			
		Perceived quality of outputs/programs			
		Recommendations to strengthen IMPACT programs			
Humanitarian stakeholders are engaged in IMPACT programs throughout the research cycle	Number and/or percentage of humanitarian organizations directly contributing to IMPACT programs *(providing resources, participating to presentations, etc.)*	# of organisations providing resources (i.e.staff, vehicles, meeting space, budget, etc.) for activity implementation	Country team	Engagement _log	N/A
		# of organisations/clusters inputting in research design and joint analysis			N/A
		# of organisations/clusters attending briefings on findings;			N/A

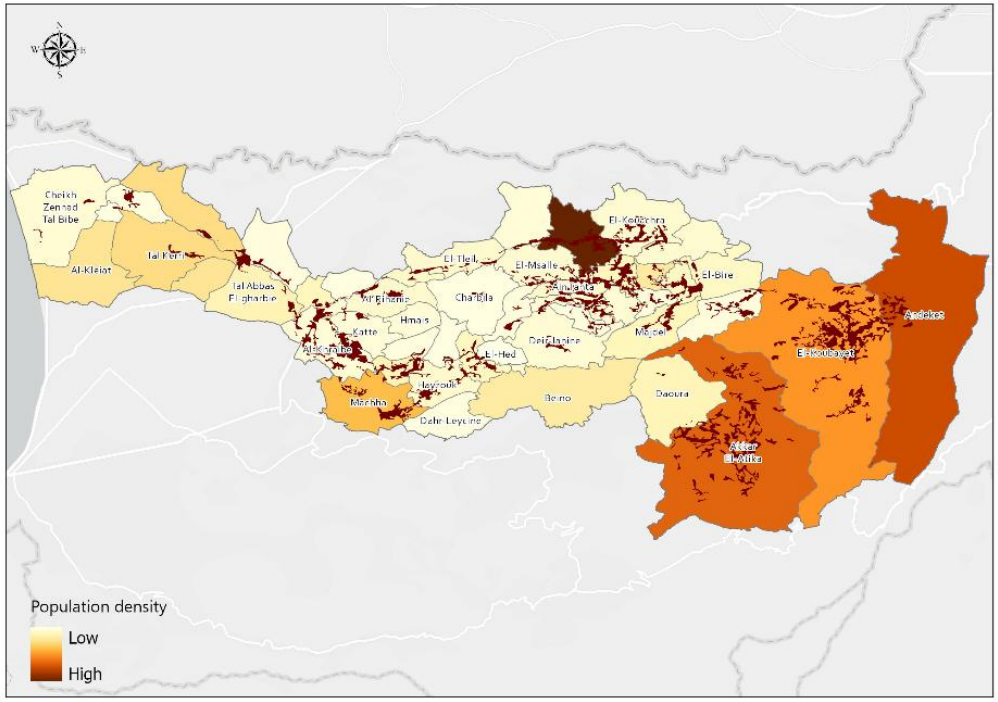
ANNEX 1: IDENTIFICATION OF STUDY SITES

The geographical units within each river basin will be determined based on the following criteria, which will be adjusted dependent on the variabilities within each river basin:

1. Population density: WorldPop
2. Service coverage of water services: River Basin Management Plans + WEAP models [WEAP21]
3. Land Use Land Cover: inclusion of urban areas, agricultural areas or commercial/industrial zones

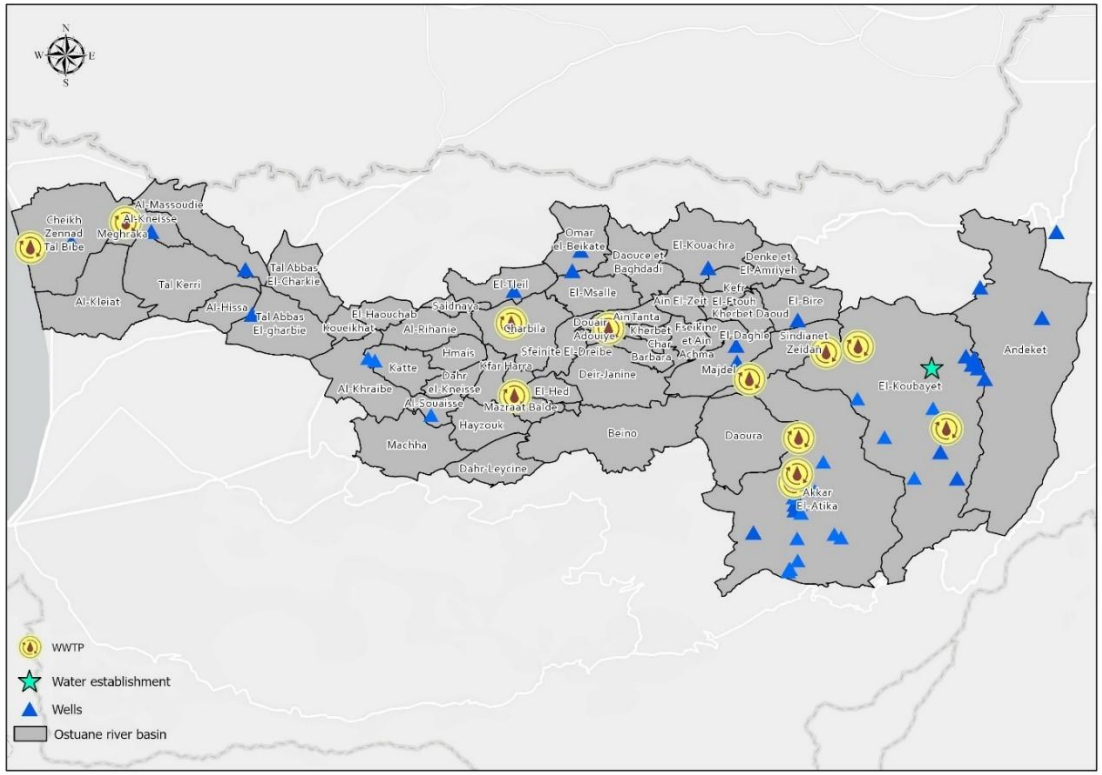
Al-Ostuan River Basin [example][9]

Using the WorldPop population density map, 2 areas were identified having the highest population density within Al Ostuan river basin: Akkar Atika with approximately 7756 individuals, and Qobayat with 7345 individuals.



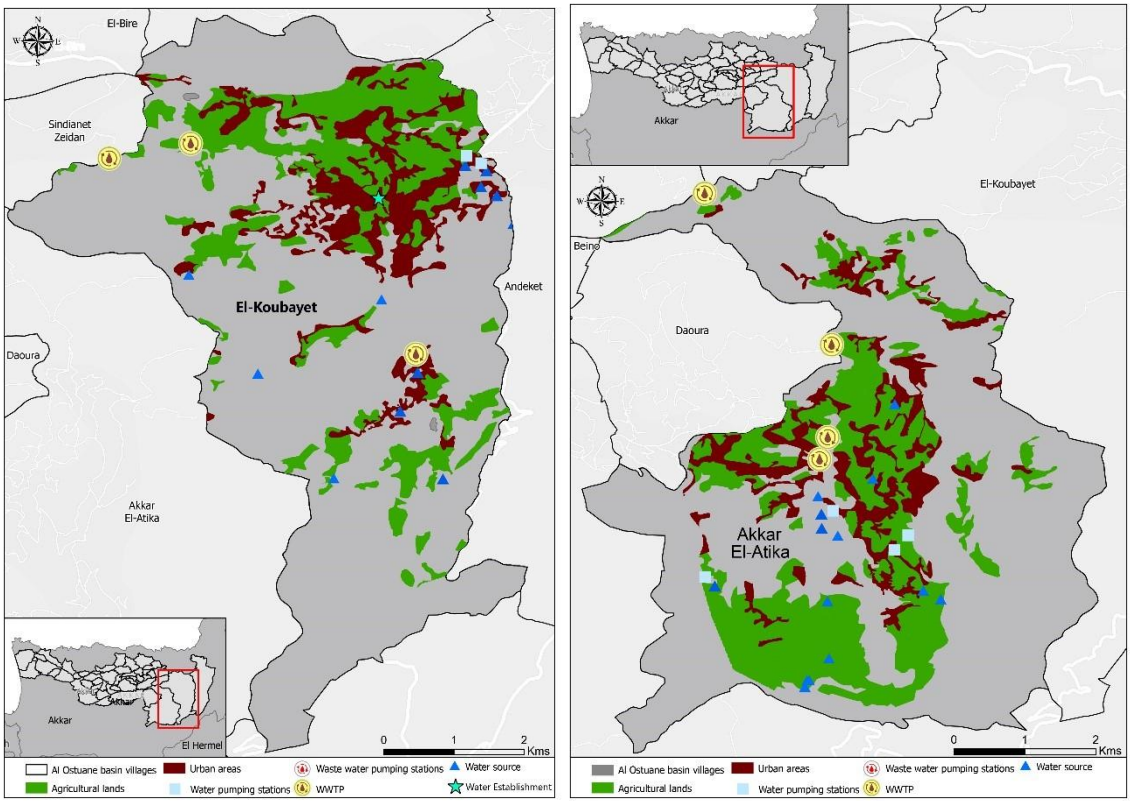
[9] For instance, we have utilized the river basin management data which is available at Acted as part of the HawkaMaa project. We will obtain the data from WW-GVC and LebRelief for the other 2 river basins and select study areas accordingly.

2) Service coverage of water:
    i) Sub WE office location
    ii) Presence of Private and public wells [river basin catchment management plans]



3) Proportion of catchment areas dedicated to agricultural land, residential areas, commercial areas (LULC): (i) Urban fabric - medium and high density, (ii) Industrial or commercial areas and (iii) Agricultural areas

The LULC map aids in identifying areas with the highest percentage of various land cover types within the basin. Predominantly, urban fabric and agricultural areas constitute the highest percentage, while industrial and commercial areas have the lowest representation. Approximately 45% of the selected areas comprise agricultural lands, primarily consisting of olive groves, field crops, and fruit trees, with urban areas comprising approximately 12%. Based on these criteria, two specific areas were chosen: Akkar Atika and Qobayat.


El-Bire
Sindianet Zeidan
El-Koubayet
Andeket
Daoura
Akkar El-Atika
Akkar
El Hermel
0 1 2 Kms
Al Ostuane basin villages
Urban areas
Waste water pumping stations
Water source
Agricultural lands
Water pumping stations
WWTP
Water Establishment
Akkar
El-Koubayet
Beino
Daoura
Akkar El-Atika
0 1 2 Kms
Al Ostuane basin villages
Urban areas
Waste water pumping stations
Water source
Agricultural lands
Water pumping stations
WWTP

ANNEX 2: CONTINGENCY PLANNING SCENARIOS

	Scenario 1	Scenario 2	Scenario 3
Description	**Heightened tensions no change in controlled status.**	**Conflict increased within controlled scenario + high likelihood to remain localized for an extended period**	**Escalation in uncontrolled scenario. Potential evac of non-essential staff. Potential loss of comms and access.**
Trigger(s)	Sporadic conflict + unrest	Change in regional power dynamics. Escalation in intensity + frequency within preidentified hotspots. Civilians targeted in localized attacks.	Mass civilian casualities. Damage to key infrastructure. State of emergency declared.
Office presence	Staff outside of Beirut- daily status update Staff in Achrafieh-can come to office	Staff working from home.	Essential staff continue operating from Beirut.
Field movements	Daily status update based on geographical locations	Field movements to be within green zones only.	No field movements. Unless following appropriate security guidelines/ mechanisms.
Field operations	All field activities delayed until 7th august (planning + recruitment can continue) actual start date to be updated.	Field activities adapted to remote for red/orange zones. Field activities move to remote with detailed contingency plan for red zones.	Field activities move to remote for red/orange zones. Field activities move to remote with detailed contingency plan for red zones. Complete cessation of operations except for emergency assessments.
Others	Field activities can start + 2 days from cut-off date.	Field activities can commence 7-10 days from approved contingency plan. Adapt methodology to ensure assessment objectives are met. Information shared with relevant partners.	Contact all potential donors + parties with updated contingency plans.