

# Research Terms of Reference

## Humanitarian Situation Overview of Water Crisis in Northeast Syria (NES)

SYR2206

Syria

April 2022  
V1

**REACH** Informing  
more effective  
humanitarian action

### 1. Executive Summary

<b>Country of intervention</b>	Syria				
<b>Type of Emergency</b>	<input type="checkbox"/>	Natural disaster	<input checked="" type="checkbox"/>	Conflict	<input type="checkbox"/> Other ( <i>specify</i> )
<b>Type of Crisis</b>	<input type="checkbox"/>	Sudden onset	<input type="checkbox"/>	Slow onset	<input checked="" type="checkbox"/> Protracted
<b>Mandating Body/ Agency</b>	REACH				
<b>IMPACT Project Code</b>	16ATA - BHA				
<b>Overall Research Timeframe</b>	01/02/2022 to 15/04/2022				
<b>Research Timeframe</b>	1. Pilot/ training: NA		6. Preliminary presentation: NA		
	2. Start collect data: NA		7. Outputs sent for validation: 15/04/2022		
	3. Data collected: NA		8. Outputs published: 19/04/2022		
	4. Data analysed: 02/2022 – 04/2022		9. Final presentation: first presentation		
	5. Data sent for validation: NA		11/05/2022		
<b>Number of assessments</b>	<input checked="" type="checkbox"/>	Single assessment (one cycle)			
	<input type="checkbox"/>	Multi assessment (more than one cycle)			
<b>Humanitarian milestones</b>	<b>Milestone</b>		<b>Deadline</b>		
	<input checked="" type="checkbox"/>	Donor plan/strategy	Ongoing		
	<input checked="" type="checkbox"/>	Inter-cluster plan/strategy	Ongoing		
	<input checked="" type="checkbox"/>	Cluster plan/strategy	Ongoing		
	<input checked="" type="checkbox"/>	NGO platform plan/strategy	Ongoing		
	<input type="checkbox"/>	Other (Specify):			
<b>Audience Type &amp; Dissemination</b>	<b>Audience type</b>		<b>Dissemination</b>		
	<input checked="" type="checkbox"/> Strategic		<input checked="" type="checkbox"/> General Product Mailing (e.g. mail to NGO consortium; HCT participants; Donors)		
	<input checked="" type="checkbox"/> Programmatic		<input checked="" type="checkbox"/> Cluster Mailing (Education, Shelter and WASH) and presentation of findings at next cluster meeting		
	<input checked="" type="checkbox"/> Operational		<input checked="" type="checkbox"/> Presentation of findings (e.g. at HCT meeting; Cluster meeting)		
	<input type="checkbox"/> [Other, Specify]		<input checked="" type="checkbox"/> Website Dissemination (Relief Web & REACH Resource Centre)		
			<input type="checkbox"/> [Other, Specify]		
<b>Detailed dissemination plan required</b>	<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No	
<b>General Objective</b>	This is a follow-up to a briefing note published in June of 2021 for NES (link <a href="#">here</a> ). It provides an update on the multisectoral humanitarian crisis in NES arising from three dimensions of the water shortage: the lack of rainfall since late 2020, low water levels in the Euphrates since the start of				

	2021, and the ongoing groundwater depletion. The aim is to inform humanitarian actors on the current developments of the crisis in order to better direct aid.			
<b>Specific Objective(s)</b>	1. Identify the impacts of the water crisis (low flow in the Euphrates, drought, groundwater depletion) on water access, electricity access, (agricultural) livelihoods, food security, and health.			
<b>Research Questions</b>	1. How do deficits in water access relate to the current water crisis? 2. How is electricity access impacted by Euphrates water levels? 3. What impacts of the water crisis on agricultural livelihoods are currently being experienced? 4. How does the water crisis compound ongoing food insecurity? 5. Which adverse health effects are expected due to the water crisis?			
<b>Geographic Coverage</b>	Northeast Syria			
<b>Secondary data sources</b>	REACH – <a href="#">Humanitarian Situation Overview in Syria</a> (HSOS) from January 2020 to March 2022 REACH – <a href="#">Joint Market Monitoring Initiative</a> (JMMI) from January 2021 to March 2022 REACH – <a href="#">Agriculture RNA March 2022 in Al-Hasakeh governorate</a> HNAP - Demographic, Socioeconomic, Priority Needs & WASH Household Survey for January 2021 and June 2021			
<b>Population(s)</b> <i>Select all that apply</i>	<input type="checkbox"/>	IDPs in camp	<input type="checkbox"/>	IDPs in informal sites
	X	IDPs in host communities	<input type="checkbox"/>	IDPs [Other, Specify]
	<input type="checkbox"/>	Refugees in camp	<input type="checkbox"/>	Refugees in informal sites
	<input type="checkbox"/>	Refugees in host communities	<input type="checkbox"/>	Refugees [Other, Specify]
	X	Host communities	<input type="checkbox"/>	[Other, Specify]
<b>Data management platform(s)</b>	X	IMPACT	<input type="checkbox"/>	UNHCR
	<input type="checkbox"/>	[Other, Specify]		
<b>Expected output type(s)</b>	X	Situation overview #: 1	<input type="checkbox"/>	Report #: __
	<input type="checkbox"/>	Presentation (Preliminary findings) #: __	X	Presentation (Final) #: at least 5
	<input type="checkbox"/>	Interactive dashboard #: __	<input type="checkbox"/>	Webmap #: __
	<input type="checkbox"/>		<input type="checkbox"/>	Profile #: __
	<input type="checkbox"/>		<input type="checkbox"/>	Factsheet #: __
	<input type="checkbox"/>		<input type="checkbox"/>	Map #: __
<b>Access</b>	X	Public (available on REACH resource center and other humanitarian platforms)		
	<input type="checkbox"/>	Restricted (bilateral dissemination only upon agreed dissemination list, no publication on REACH or other platforms)		
<b>Visibility</b> <i>Specify which logos should be on outputs</i>	<b>REACH</b>			
	<b>Donor:</b> Bureau for Humanitarian Assistance (BHA)			
	<b>Coordination Framework:</b> NES Forum			
	<b>Partner:</b> NES Forum, Agricultural Working Group			

## 2. Rationale

### 2.1 Background

The water crisis in Northeast Syria (NES) spans multiple dimensions – a meteorological drought, reduced flow in the Euphrates River, and a long-term reduction in groundwater levels. Together, these have led to a severe deterioration in the humanitarian situation. The drought began in late 2020 with a delayed onset of winter rains and low rainfall, later made worse by heatwaves and an early end to rains in the spring of 2021.<sup>1</sup> Water levels in the Euphrates then began to decline

1 Food and Agriculture Organization of the United Nations (FAO). (2021b). Syrian Arab Republic : Precipitation analysis, 1980-2021. <https://www.fao.org/emergencies/resources/documents/resources-detail/en/c/1444881/>

rapidly starting early 2021.<sup>2</sup> REACH and others reported on this in the summer and autumn months of 2021, noting the severe decline in access to clean water, electricity, and the impact on agriculture.<sup>3,4,5,6</sup>

This briefing note serves as an update on the humanitarian situation in light of the continued water crisis. Specifically, rainfall levels have remained substantially below long-term average levels in the current agricultural season.<sup>7</sup> Thus, the European Drought Observatory has warned in March 2022 of a medium to high risk of drought impact on agriculture – for comparison, no areas had a high risk in March 2021.<sup>8</sup> Given the duration of the drought, it is likely that not only soils and surface water will be impacted, but also groundwater levels.<sup>9</sup> This is particularly problematic as Syria has seen decades of overexploited groundwater, leading to severe reductions in groundwater levels. This is mainly due to agricultural usage,<sup>10</sup> with certain crops and areas of NES relying heavily on irrigation.<sup>11</sup>

The Euphrates water levels have improved since the beginning of the 2022, with March levels in lake Assad around a meter higher than in 2021, though still two meters lower than in 2020.<sup>2</sup> However, the situation remains vulnerable as climate change<sup>12</sup> and water usage are causing further declines in water flow. As the Euphrates is the single largest source of freshwater in Syria as well as being an important source of electricity,<sup>6</sup> these developments are highly relevant to the well-being of people in NES.

After widespread initial reporting, there has been no recent update on this situation. Despite the water shortages commonly lessening during the winter months due to this being the main rainfall period and temperatures falling, we expect to see issues resurfacing during the summer months, typically beginning in June.<sup>13</sup> To ensure that humanitarian actors can prepare and react in a timely manner, as well as to highlight ongoing issues, REACH has created a briefing note to fill this gap.

## 2.2 Intended impact

The analysis aims to highlight the current water crisis in preparation for of the dry period during the summer months. As we expect the situation to deteriorate further, this piece can both be used for advocacy and to inform on operational needs across multiple sectors – notably WASH (Water, Sanitation and Hygiene) and FSL (Food Security and Livelihoods). It provides a coherent narrative of the multi-sectoral impacts of the water crisis and places this within the wider context of needs in Syria, thus also providing an information basis on which to anticipate future developments and needs.

## 3. Methodology

### 3.1 Methodology Overview

This assessment relies primarily on secondary data, using data from REACH's monthly Humanitarian Situation Overview in Syria ([HSOS](#)), REACH's monthly Joint Market Monitoring Initiative ([JMMI](#)), and the biannual assessment conducted by the Humanitarian Needs Overview Programme (HNAP). In the course of developing the briefing note, REACH also conducted

<sup>2</sup> WASH Working Group. (2022b). Euphrates Water Level Dashboard.

<sup>3</sup> REACH. (2021a). Briefing Note: Humanitarian Situation Overview in Northeast Syria. [https://www.impact-repository.org/document/reach/b2f66abb/REACH\\_SYR\\_Briefing-Note\\_Humanitarian-Situation-Overview-in-Northeast-Syria\\_June-2021.pdf](https://www.impact-repository.org/document/reach/b2f66abb/REACH_SYR_Briefing-Note_Humanitarian-Situation-Overview-in-Northeast-Syria_June-2021.pdf)

<sup>4</sup> iMAP. (2021c). Water Dynamics, Crises, and Challenges in Northeastern Syria.

<sup>5</sup> Humanitarian Access Team (HAT). (2021a). Drought, Pollution and the Euphrates : Measuring agriculture water stress in northeast Syria.

<sup>6</sup> Food Security Cluster. (2021). WATER CRISIS IN NORTHERN AND NORTHEAST SYRIA Immediate Response and Funding Requirements. [https://fscluster.org/sites/default/files/documents/response\\_plan\\_water\\_crWoSs\\_in\\_northern\\_and\\_northeast\\_syria\\_september\\_2021.pdf](https://fscluster.org/sites/default/files/documents/response_plan_water_crWoSs_in_northern_and_northeast_syria_september_2021.pdf)

<sup>7</sup> European Commission - Copernicus Emergency Management Service. (2022a). GDO - Global Drought Observatory: Compare Monthly Maps. <https://edo.jrc.ec.europa.eu/gdo/php/index.php?id=2075>

<sup>8</sup> European Commission - Copernicus Emergency Management Service. (2022b). GDO - Global Drought Observatory: MapViewer. <https://edo.jrc.ec.europa.eu/gdo/php/index.php?id=2001>

<sup>9</sup> European Commission - Copernicus Emergency Management Service. (2020). Standardized Precipitation Index (SPI). [https://edo.jrc.ec.europa.eu/documents/factsheets/factsheet\\_spi.pdf](https://edo.jrc.ec.europa.eu/documents/factsheets/factsheet_spi.pdf)

<sup>10</sup> Baba, A., Al Kareem, R., & Yazdani, H. (2021). Groundwater Resources and Quality in Syria. Groundwater for Sustainable Development, 100617. <https://doi.org/10.1016/j.gsd.2021.100617>

<sup>11</sup> Food and Agriculture Organization of the United Nations (FAO). (2021a). Special Report : 2021 FAO Crop and Food Supply Assessment Mission to the Syrian Arab Republic. <https://www.fao.org/3/cb8039en/cb8039en.pdf>

<sup>12</sup> Adamo, N., Al-Ansari, N., Sissakian, V. K., Laue, J., & Knutsson, S. (2018). The Future of the Tigris and Euphrates Water Resources in View of Climate Change. Journal of Earth Sciences and Geotechnical Engineering, 8(3), 59-74. <https://www.diva-portal.org/smash/get/diva2:1199706/FULLTEXT01.pdf>

<sup>13</sup> Food and Agricultural Organization of the United Nations (FAO). (2021b). Syrian Arab Republic: Precipitation analysis, 1980–2021. Rome. <https://doi.org/10.4060/cb7151en>

a rapid needs assessment ([RNA](#)) in Al-Hasakeh governorate in March 2022. This [RNA](#) focussed on the water crisis' impacts on farmers in the region.

### **3.2 Population of interest**

The briefing note focuses on northeast Syria, being the area of strongest impact. The analysis predominantly applies to host communities. The situation of in-camp IDPs differs substantially from the situation of residents/host communities in terms of their access to water and livelihoods and thus would require separate consideration. The situation of out-of-camp IDPs is briefly touched upon in the context of water availability, but this population generally faces the same impacts of the water crisis as the host community.

### **3.3 Secondary data review**

#### **Raw Data**

Monthly data from REACH's [HSOS](#) (humanitarian situation) is used. This data is indicative, and thus predominantly used to monitor trends in the humanitarian situation across 2021 and up to March of 2022 (period in which population was primarily affected) as well as making tentative comparisons with the situation in 2020, which was not a drought year. As coverage across 2021 remained largely constant, and due to the high coverage [HSOS](#) achieves, trends across this period can reasonably be assumed to reflect trends in the population.

This is further supplemented by REACH's [JMMI](#) data, which uses vendor KIs to provide an overview over prices and availability of essential food and non-food items across NES and calculates the Survival Minimum Expenditure Bundle (SMEB). HNAP data including sections on the socioeconomic situation, priority needs, WASH and others is collected twice annually at the household level. The socioeconomic indicators were provided in an aggregated form at the household level while the raw data for the WASH section was made available. The latter as used with weights provided by the WASH working group for representativeness at the subdistrict level. The most recent wave that could be accessed was for June 2021, hence the data cannot be used to provide an overview over the current situation; rather, it is used to triangulate and supplement [HSOS](#) data.

Lastly, a rapid needs assessment was conducted by REACH in March 2022 to evaluate the current agricultural situation in NES. The assessment was confined to Al-Hasakeh governorate; however, secondary data<sup>14,15</sup> suggests and the that the situation in Al-Hasakeh may be indicative of the situation in NES more widely.

#### **News Sources**

News reports, primarily from 2021 and early 2022, are used to provide context to the data. This especially applies to sudden changes which may be due to current events or policy changes. Care was taken to use varied sources (both in English and Arabic) and to avoid bias. Where only sources with clear biases are available, sources from differing political perspectives are chosen in order to triangulate. Sources of unknown credibility were disregarded.

#### **Organisational Reports**

Monthly updates by organisations which work in specific sectors that aren't well-covered by REACH data are used; this particularly applies to WHO reports on health and WFP reports on food security. Furthermore, one-off reports on topics of interest are used, including on the water crisis, agriculture, environmental pollution, and others.

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14 iMMAAP. (2021). Livestock Market Systems Rapid Assessment. <https://immap.org/product/livestock-market-systems-rapid-assessment-in-northeast-syria/>

15 Food and Agriculture Organization of the United Nations (FAO). (2021a). Special Report : 2021 FAO Crop and Food Supply Assessment Mission to the Syrian Arab Republic. <https://www.fao.org/3/cb8039en/cb8039en.pdf>

## Dashboards

The dashboard of the WASH WG is heavily used. This dashboard includes information on Euphrates water levels, functionality of water stations at the Euphrates, functionality of Alouk water station, and more going back several years. This information is provided by various organisations working in the WASH sector and is regularly updated.

## Academic Papers

Where possible, information was backed up by academic sources. This applies specifically to background information which is relevant across an extended period, such as on groundwater resources in Syria or long-term impacts of previous droughts.

## 4. Roles and responsibilities

Table 3: Description of roles and responsibilities

<b>Task Description</b>	<b>Responsible</b>	<b>Accountable</b>	<b>Consulted</b>	<b>Informed</b>
<i>Research design</i>	JAO	HSM RM	IMPACT HQ Research Department	CC
<i>Data analysis</i>	JAO	HSM RM	GIS SAO	CC
<i>Output production</i>	JAO, GIS SAO	HSM RM	Agriculture WG, WASH WG, NES Forum	CC
<i>Dissemination</i>	AO / HSM RM / CC	HSM RM	PDO	Donor, Partners
<i>Monitoring &amp; Evaluation</i>	PDO	PDO	HSM RM	IMPACT HQ Research Department
<i>Lessons learned</i>	AO / HSM RM	HSM RM	NA	IMPACT HQ Research Department

**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

## 7. Monitoring & Evaluation Plan

IMPACT Objective	External M&E Indicator	Internal M&E Indicator	Focal point	Tool	Will indicator be tracked?
<b>Humanitarian stakeholders are accessing IMPACT products</b>	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	X Yes
		# of downloads of x product from Relief Web	Country request to HQ		<input type="checkbox"/> Yes
		# of downloads of x product from Country level platforms	Country team		<input type="checkbox"/> Yes
		# of page clicks on x product from REACH global newsletter	Country request to HQ		X Yes
		# of page clicks on x product from country newsletter, sendingBlue, bit.ly	Country team		X Yes
		# of visits to x webmap/x dashboard	Country request to HQ		<input type="checkbox"/> Yes
<b>IMPACT activities contribute to better program implementation and coordination of the humanitarian response</b>	Number of humanitarian organisations utilizing IMPACT services/products	# references in HPC documents (HNO, SRP, Flash appeals, Cluster/sector strategies)	Country team	Reference_log	X Yes
		# references in single agency documents			X Yes
<b>Humanitarian stakeholders are using IMPACT products</b>	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_Feed back and Usage_Survey template	NA
		Perceived usefulness and influence of IMPACT outputs			NA
		Recommendations to strengthen IMPACT programs			NA
		Perceived capacity of IMPACT staff			NA
		Perceived quality of outputs/programs			NA

	Number of humanitarian documents (HNO, HRP, cluster/agency strategic plans, etc.) directly informed by IMPACT products	Recommendations to strengthen IMPACT programs			NA
Humanitarian stakeholders are engaged in IMPACT programs throughout the research cycle	Number and/or percentage of humanitarian organizations directly contributing to IMPACT programs ( <i>providing resources, participating to presentations, etc.</i> )	# of organisations providing resources (i.e. staff, vehicles, meeting space, budget, etc.) for activity implementation	Country team	Engagement_log	<input type="checkbox"/> Yes
		# of organisations/clusters inputting in research design and joint analysis			<input type="checkbox"/> Yes
		# of organisations/clusters attending briefings on findings;			X Yes