

9 September 2021

# **WATER CRISIS IN NORTHERN AND NORTHEAST SYRIA**

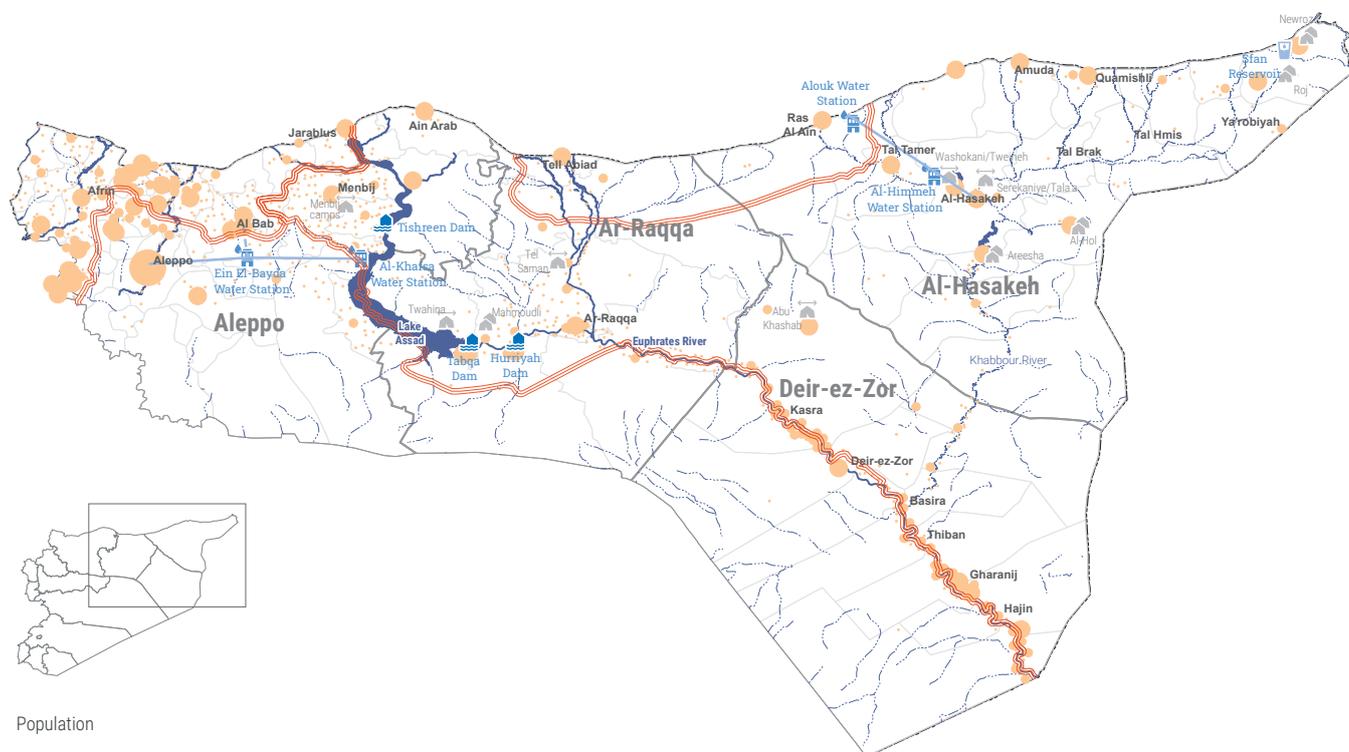
## Immediate Response and Funding Requirements



# Reference Map

## Population and Water Infrastructure

in Northern and Northeast Syria



Population

- 1,000 - 5,000
- 5,000 - 15,000
- 15,000 - 300,000
- 300,000 - 900,000
- > 900,000

Legend

- Formal camp
- Informal site
- International boundary
- Governorate boundary
- Approximate lines of control
- Dam
- Water pumping station
- Reservoir
- Lake
- Water supply line
- Perennial river
- Intermittent river

## People in need at inter-sector and sector level by governorate (pre-water crisis)

(2021 Syria HNO, March 2021)

	PROT	CCCM	ERL	EDU	FAS	HEALTH	NUT	SHELTER	NFI	WASH	INTER SECTOR
Aleppo	2,667,766	303,514	2,168,285	1,410,186	2,647,882	2,574,891	935,292	1,148,842	538,565	2,995,047	2,729,562
Al-Hasakeh	663,709	37,237	529,566	377,042	749,806	729,817	292,086	447,572	270,140	1,105,804	775,464
Ar-Raqqa	454,988	14,666	462,906	291,082	507,772	472,041	185,222	317,831	158,308	619,469	530,622
Deir-ez-Zor	531,884	10,301	435,748	309,803	633,943	456,393	203,124	241,496	142,379	622,431	556,068
<b>TOTAL</b>	<b>4,318,347</b>	<b>365,718</b>	<b>3,596,505</b>	<b>2,388,113</b>	<b>4,539,404</b>	<b>4,233,143</b>	<b>1,615,724</b>	<b>2,155,740</b>	<b>1,109,391</b>	<b>5,342,751</b>	<b>4,591,715</b>

The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations.

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# Summary

## Context

At the start of 2021, more than two out of three Syrians living in northern and northeast Syria (NES) were estimated to be in humanitarian need, a significant increase compared to 2020.<sup>1</sup> This amounts to 4.5 million or 68 per cent of the 6.6 million people living in Aleppo as well as Deir-ez-Zor, Al-Hasakeh and Ar-Raqqa Governorates. Since April/May 2021, the humanitarian situation in northeastern Aleppo as well as Deir-ez-Zor, Al-Hasakeh and Ar-Raqqa Governorates has deteriorated further due to significantly reduced water availability and access, as a result of the following climatic and man-made factors:

- unprecedented low water levels of the Euphrates River since January 2021, following low water flows into the Syrian portion of the river and the principal water reservoirs in NES;
- low and erratic rainfall during the 2020/21 winter season, accompanied by higher than average temperatures, leading to drought-like conditions in the region during the second quarter of 2021<sup>2</sup> and severely affecting agricultural production there as well as in other parts of Syria;<sup>3</sup>
- recurring shutdowns and reduced operational capacity of Alouk water station, supplying an estimated 500,000 people in Al-Hasakeh city and surrounding areas;<sup>4</sup>
- similarly, disruptions to the water system, including the Al-Khafsa water station and the Ein El-Bayda water pumping station, which used to supply water to an estimated 184,000 people in Al-Bab sub-district in northern Aleppo.

These factors combined have had a severe negative impact on the availability of water and people's regular and reliable access to water as well as their right to an adequate standard of living. The situation has further impacted public health, as households are increasingly consuming water that is unsafe and also have less water for domestic use, including for hygiene and sanitation. This has limited the ability to implement critical prevention and control measures in the current COVID-19 context, including handwashing in education facilities, with risks associated with other communicable diseases to increase in autumn and winter. The prevalence of water-borne diseases in the affected areas has risen, placing additional strain on a public health system already debilitated by years of crisis and overburdened by the COVID-19 pandemic. In the current context of economic deterioration – where prices for food and basic goods have risen dramatically while available income and purchasing power for most people have shrunk

– many cannot afford the increasing costs for trucked water or other private supply modalities.

Reductions in both rainfall and river water for irrigation, in combination with high prices for agro-chemicals and fuel, already have and are predicted to further cause substantial harvest losses as well as increases in food prices. These trends have worsened already high food insecurity and malnutrition rates amongst the population.

The overall deterioration in people's living standards is aggravating multiple, pre-existing protection needs and risks, threatening social cohesion and encouraging more widespread adoption of harmful coping mechanisms, including amongst an estimated 289,000 IDPs (internally displaced people) living in 'last resort sites' in NES.

Under International Human Rights Law (IHRL), the right to water is recognized as part of the right to an adequate standard of living. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights. Access to safe, affordable and reliable drinking water and sanitation services are basic human rights. They are indispensable to sustaining healthy livelihoods and maintaining people's dignity. In Syria the right to water is further protected by the application of relevant International Humanitarian Law (IHL) norms.

## Scope of Plan

Since April/May the coordination mechanisms<sup>5</sup> in all areas of the response – mainly the Syria Humanitarian Country Team (HCT) and the Northeast NGO Forum (NES Forum), with the Syria Cross-Border Humanitarian Liaison Group (HLG) now joining through this plan – have exchanged on response planning and preparedness efforts, with initial support by specific WoS Sector Coordinators and increasingly the entire WoS Inter-Sector Group (ISG).<sup>6</sup>

This plan consolidates response priorities across all areas of the response and involved sectors. It is geographically limited to the Governorates of Deir-ez-Zor, Al-Hasakeh and Ar-Raqqa as well as northeastern Aleppo Governorate, where a particular confluence of factors since late 2020 and early 2021 have led to significant levels of water scarcity, triggering needs across several sectors. Activities under this plan seek to address the immediate needs stemming from the multi-dimensional water crisis in this area. It is acknowledged that some of the same factors which have affected northeast and northern Syria have also impacted other areas of the country, including drought-like conditions leading to significant losses in crop and livestock

1 2021 Syria Humanitarian Needs Overview

2 Global Drought Observatory (GDO), Drought in Syria and Iraq, April 2021; FAQ, Syrian Arab Republic Country Brief, 4 May 2021;

3 Preliminary results of the 2021 FAO/WFP Crop and Food Security Assessment Mission (CFSAM) indicate severe impacts on the agriculture sector in Deir-ez-Zor, Al-Hasakeh, Rural Damascus, Homs, Ar-Raqqa, Dar'a and As-Sweida Governorates. See FSA chapter in this document.

4 See WoS WASH sector chapter in this document

5 'Syria HCT-coordinated response' designates humanitarian assistance delivered from areas controlled by the Government of Syria, including to northeast Syria. 'Syria Cross-Border HLG-coordinated response' designates humanitarian assistance delivered cross-border from Turkey, including that provided by the United Nations as authorized by UN Security Council resolutions 2449 (2018), 2504 (2020), 2533 (2020) and 2585 (2021), or from areas of north-west Syria controlled by non-state armed groups. 'NES NGO Forum-coordinated response' designates humanitarian assistance delivered by NGOs cross-border from Iraq or from areas of northeast Syria controlled by local authorities.

6 A joint operational planning workshop involving key stakeholders was conducted on 15 July 2021.

production in south and central Syria.<sup>7</sup> As a result, a dire food and nutrition security situation is currently evolving across NES, south/central and western Syria, with related needs expected to further grow during the remainder of 2021. These needs will be responded to by the relevant sectors under the framework of the 2021 HRP, with any continued response requirements to be folded into the 2022 HRP.

All activities and funding requirements are within the programmatic scope and budget of the 2021 HRP.<sup>8</sup> Identified funding gaps are for the next four months (September-December 2021), and for activities to be implemented during the next six months (i.e. by latest end-February 2022) or else to be continued under the 2022 HRP. All sector activities included in this plan have been prioritized along these parameters and hence require full funding to ensure a comprehensive immediate response.

As applicable, this plan outlines (but does not include associated costs for) longer-term response and linkage efforts with post-conflict and development programming, which will be required to more sustainably address the structural causes which have led and contributed to the current water crisis.

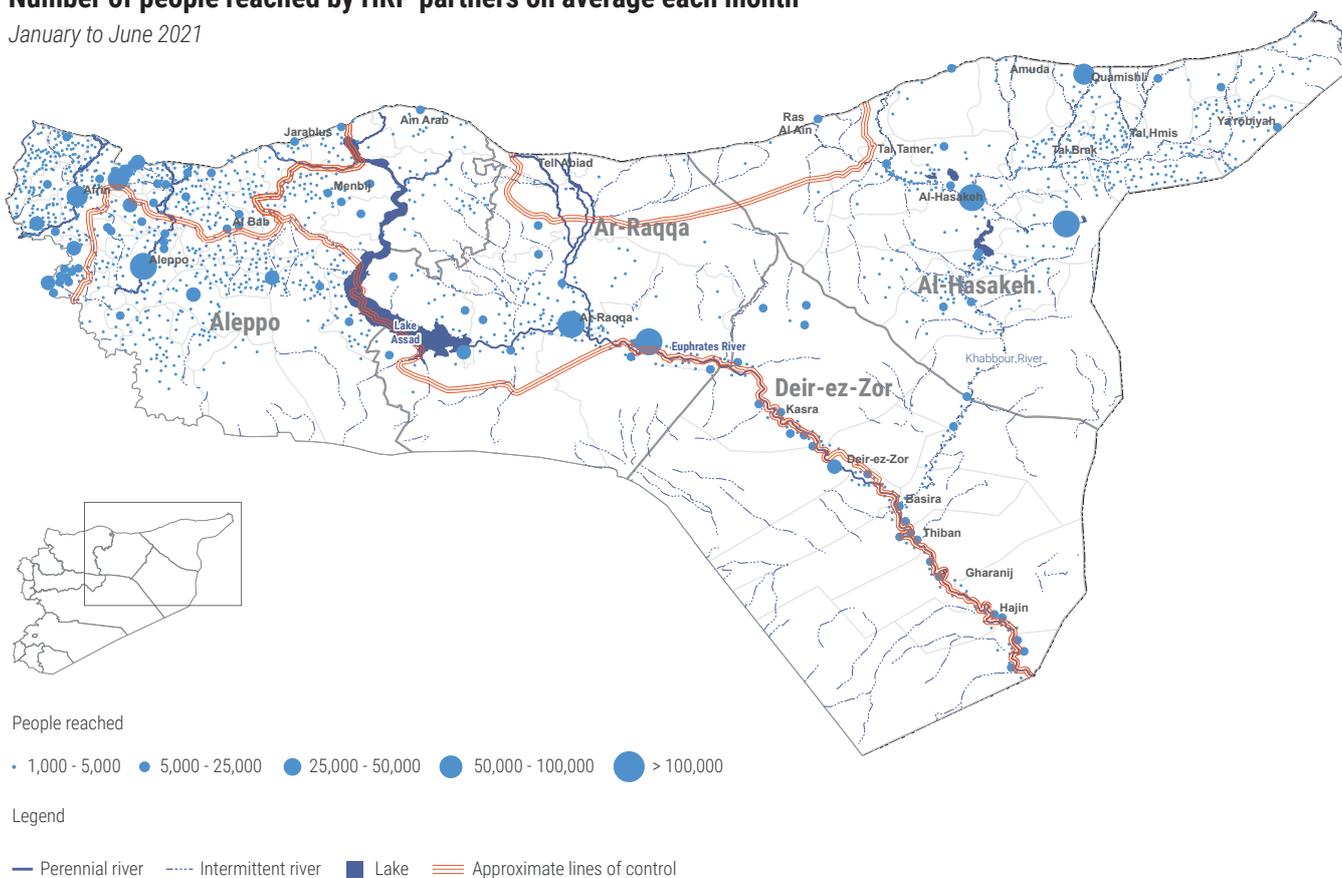
In line with the above planning parameters, through activities laid out in this plan humanitarian partners aim to assist up to 3.4 million of the over five million people estimated to be currently affected by the water crisis in Syria during the period of September to February 2022.

## Implementation Capacity and Access

Response targets have been defined based on current implementation capacity by partners in the region, which varies across sectors. Collectively, of the 4.5 million estimated to be in humanitarian need in the region, partners across all response areas and sectors have reached 3.1 million on average each month in the first half of 2021. Humanitarian access conditions, which are generally permissive in the region, have also been factored into sectoral planning. Limitations in response reach are observed in frontline areas, areas of Aleppo and northern Syria under the control of Turkish Armed Forces and affiliated groups, as well as parts of Deir-ez-Zor. There are unique challenges in Menbij and Ain Al Arab in northern Aleppo, where INGOs and national NGOs report relatively lower constraints, though the humanitarian footprint remains low. The Ras Al-Ain-Tell Abiad area (RAATA) is currently only accessible via Turkey by a few international and national NGOs (those granted permissions report relatively low access constraints). In Deir-ez-Zor Governorate, partners from all response modalities face moderate or higher levels of access constraints due to the frequency of security incidents, particularly in Basira, Hajin and Thiban sub-districts, and social unrest due to rampant poverty and limited access to basic services.

## Number of people reached by HRP partners on average each month

January to June 2021



<sup>7</sup> Preliminary results of the 2021 FAO/WFP Crop and Food Security Assessment Mission (CFSAM) indicate severe impacts on the agriculture sector in Deir-ez-Zor, Al-Hasakeh, Rural Damascus, Homs, Ar-Raqqa, Dar'a and As-Sweida Governorates. See FSA chapter in this document.

<sup>8</sup> At the time of writing, the 2021 HRP is being finalized and will subsequently be consulted with the Government of Syria.

## Current Funding Gap

Total funding requirements for implementing a multi-sector response that reaches all people targeted under this plan are US\$251.4 million. US\$51 million in required funding have already been received, including approximately \$10 million in grants from the Central

Emergency Response Fund (CERF) and another \$10 million from the Syria Humanitarian Fund allocated to organizations responding to the water crisis (excluding NES NGOs, which do not have access to these pooled funds).<sup>9</sup> The current funding gap to implement a comprehensive response to reach all people targeted therefore is \$200.4 million.

## Funding gap

2021

	SECTOR	SYRIA HCT	NES NGO FORUM	SYRIA CROSS-BORDER HLG	TOTAL
	Protection	\$1,216,100	\$217,920	-	\$1,434,020
	Early Recovery and Livelihoods	\$5,180,000	Requirements included under WASH and FSA	\$775,000	\$5,955,000
	Food Security and Agriculture	\$76,024,423	\$66,103,677	\$20,000,000	\$162,128,099
	Health	\$1,340,000	\$4,388,000	\$1,435,000	\$7,163,000
	Nutrition	\$1,900,000	\$1,957,200	\$1,100,000	\$4,957,200
	Water, Sanitation and Hygiene	\$11,102,000	\$5,429,000	\$2,190,000	\$18,721,000
	<i>including WASH in education facilities</i>	\$702,325	\$772,500	\$190,000	\$1,664,825
	<b>Total</b>	<b>\$96,762,523</b>	<b>\$78,095,797</b>	<b>\$25,500,000</b>	<b>\$200,358,320</b>

<sup>9</sup> Since the UN Security Council passed its resolution 2504 (2020), NGOs operating in northeast Syria without authorization from the Government of Syria are unable to access UN-managed pooled funds.

# Part I: Overview of Needs and Response Priorities

## 1.1

# Converging Crises

### Low Water Levels of the Euphrates River

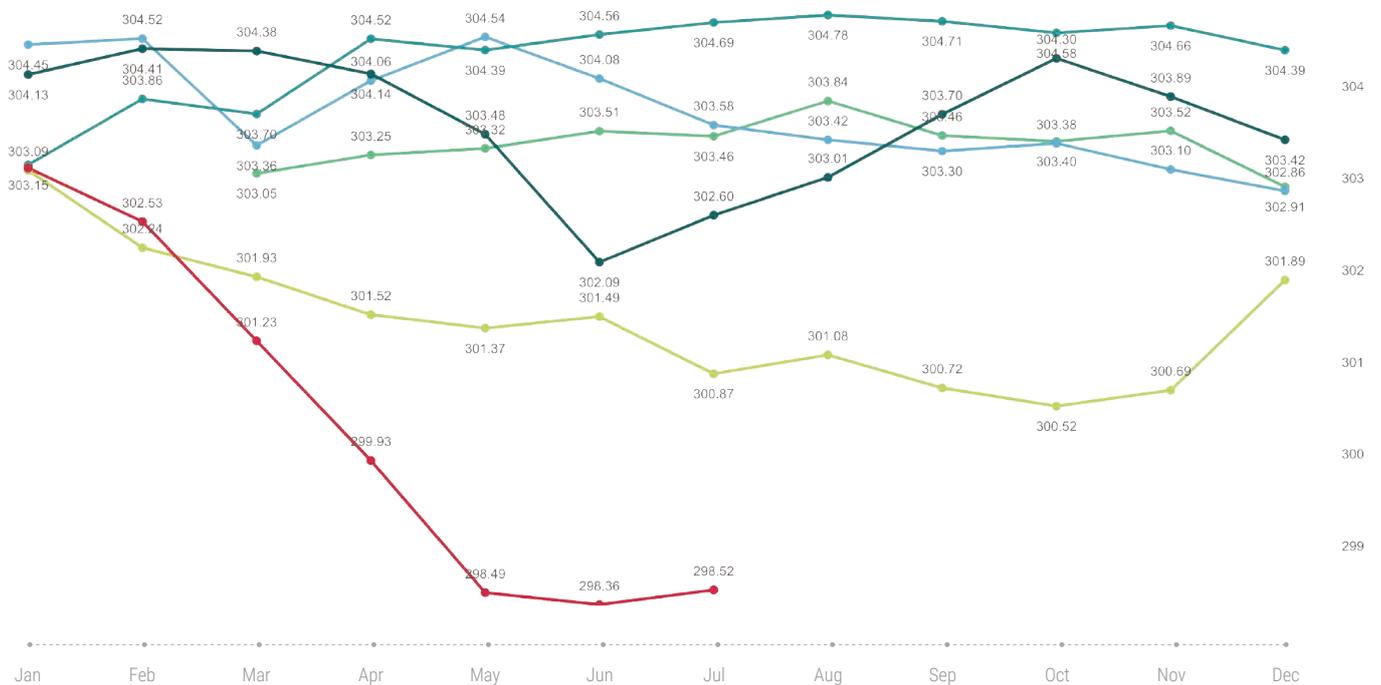
The Euphrates River originates in Turkey, passes through northern and northeast Syria, and into Iraq. In Syria, the river is channeled through three major dams: the Tishreen Dam, the Tabqa Dam (also referred to as ‘Euphrates’ dam) and the Hurriyah Dam. The Euphrates River, including its tributaries, associated freshwater lakes and canals, is the single most important source of drinking water for an estimated 5.5 million people in the Governorates of Ar-Raqqa, Aleppo (including Aleppo city and its environs) and Deir-ez-Zor (including Deir-ez-Zor city and its environs).

The Euphrates River water levels tend to be at their highest in

the “flooding months” between January and April each year, due to rainfall and snowmelt leading to dams in upstream Turkey releasing high levels of water. Since January 2021, the water flows of the Euphrates River, from Turkey into Syria, have been substantially lower than average, leading to critical low water levels in the downstream reservoirs in Syria. While the Tishreen dam, the largest reservoir in NES, for example frequently operates at more than 2,000 m<sup>3</sup> of water per second during the “flooding months” and still operated at 500m<sup>3</sup>/second in January 2021, water levels had dropped to 214m<sup>3</sup>/second in June<sup>10</sup> – less than half of the volume required to ensure the dam’s normal functionality and just over one meter above the dam’s dead level.<sup>11</sup>

### Average Water Level by Month/Year at Tabqa (Euphrates) Dam<sup>12</sup>

by month and year



\* Source: NES WASH Working Group (Dashboard)

The low water levels in the Tishreen and Tabqa dams, respectively, and in the entire Euphrates River has significantly curtailed the amount

of water that can be pumped directly from the dams and at different water stations along the river. While reported water levels have seen

<sup>10</sup> OCHA Syria, *Euphrates Water Crisis and Drought Outlook*, 17 June 2021; IMMAP, *Water Dynamics, Crises and Challenges in North-Eastern Syria*, 11 July 2021

<sup>11</sup> IMMAP, *Water Dynamics, Crises and Challenges in North-Eastern Syria*, 11 July 2021

<sup>12</sup> Source: NES Forum WASH Working Group Dashboard, accessed on 7 September 2021

fluctuations over the past months, they remain significantly below the historic average, with major improvements in the situation unlikely to occur in the remaining months of 2021, months which are commonly dry. At the time of writing, at least a third of the over 200 water stations along the Euphrates River remain significantly affected by the low water levels,<sup>13</sup> impacting water provision to millions of people across the region.

Low water levels have also led to a reduction of electricity generated by both the Tishreen and Tabqa dams, which are the primary sources of electricity for an estimated three million people (across multiple lines of control) in the region. Most communities currently only receive five to six hours of electricity a day, with some substantially less, while power blackouts frequently recur across NES.<sup>14</sup> In a context of widespread fuel and electricity shortages, this loss in electricity has further complicated the operation of vital water pumping stations along the Euphrates River, including the use of more power-intense submersible water pumps.

At several points during the past months, the Tishreen and Tabqa dams have come dangerously close to reaching 'dead levels', at which point the dam turbines in each dam are at risk of being flooded and

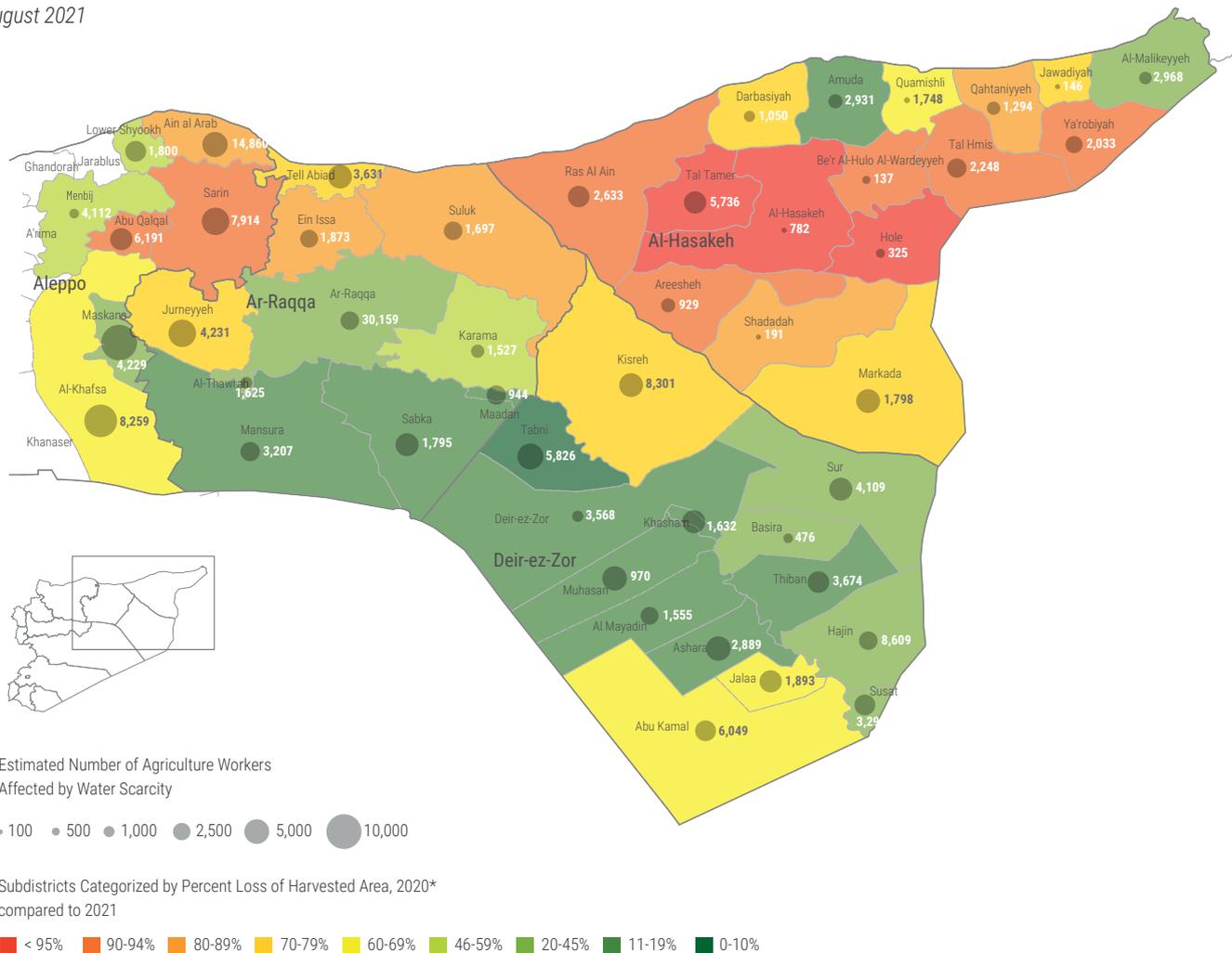
critical infrastructure damage would occur. This would result in full shutdowns of the dams and significant technical repair requirements, which are expected to be beyond the immediate technical capacity of local authorities.<sup>15</sup>

### Low Rainfall and Drought-like Conditions

The humanitarian impact of low water levels in the Euphrates River has been exacerbated by drought-like conditions in large parts of northern and northeast Syria, with severe impacts on rain-fed crops. The 2020/21 winter season saw low rainfall in the area, particularly during the most critical months of winter crop development (January to April) and above-average temperatures. Precipitation has also been insufficient for groundwater recharge throughout NES, and it has undermined rain-fed wadis (valleys) that would normally amalgamate into the Khabbour River and run through the Jazira and Deir-ez-Zor regions.<sup>16</sup> Groundwater recharge has been further compromised as a result of increased reliance on wells and trucked water from underground aquifers due to other water sources becoming less viable over the past several months.

### Estimated Harvest Losses in Northern and Northeast Syria

August 2021



\* Percent loss of crop area harvested measured for 2020-2021 season vs. 2019-2020, except in Deir-ez-Zor where 2020-2021 is compared with 2016-2017 season due to active conflict late 2017 through 2020 (for Kisreh subdistrict, 2020 is used as comparison year because active conflict not a factor in 2019-2020 season)

Source: IMMAP/HNAP, August 2021

<sup>13</sup> See WASH chapter in this document.

<sup>14</sup> OCHA Syria, Euphrates Water Crisis and Drought Outlook, 17 June 2021; REACH, Humanitarian Situation Overview Northeast Syria, June 2021

<sup>15</sup> IMMAP, Water Dynamics, Crises and Challenges in North-Eastern Syria, 11 July 2021

<sup>16</sup> IMMAP, Water Dynamics, Crises and Challenges in NES, July 2021

Al-Hasakeh, which together with parts of Ar-Raqqqa, Aleppo and Deir-ez-Zor Governorates, accounts for about 80 per cent of the country's annual wheat and barley production,<sup>17</sup> has been particularly badly affected. Therefore, initial below-average harvests were reported in May/June, resulting in local authorities in NES only acquiring 200,000 tons of wheat compared to an annual need of 600,000 tons for all of NES.<sup>18</sup> At the time of writing, several estimations suggest up to 75 per cent of total losses for rain-fed crop yield in Al-Hasakeh Governorate, and up to 25 per cent of losses for irrigated yields across all of NES,<sup>19</sup> with a depletion of wheat silos in NES predicted to occur in the coming six months.<sup>20</sup> Given the country's overall reliance on wheat production in NES, these trends are expected to have implications across all of Syria, including for food security. Moreover, with poor yields and crop failures undermining revenues, farmers will struggle to obtain necessary inputs for the sowing season in November, which in turn would affect the 2022 harvest season.

### Functionality of Alouk Water Station in Al-Hasakeh Governorate

The Alouk water station is located in Ras al Ain, in areas controlled by the Turkish Armed Forces and affiliated groups. The station is the only significant source of drinking water for an estimated 500,000 people in

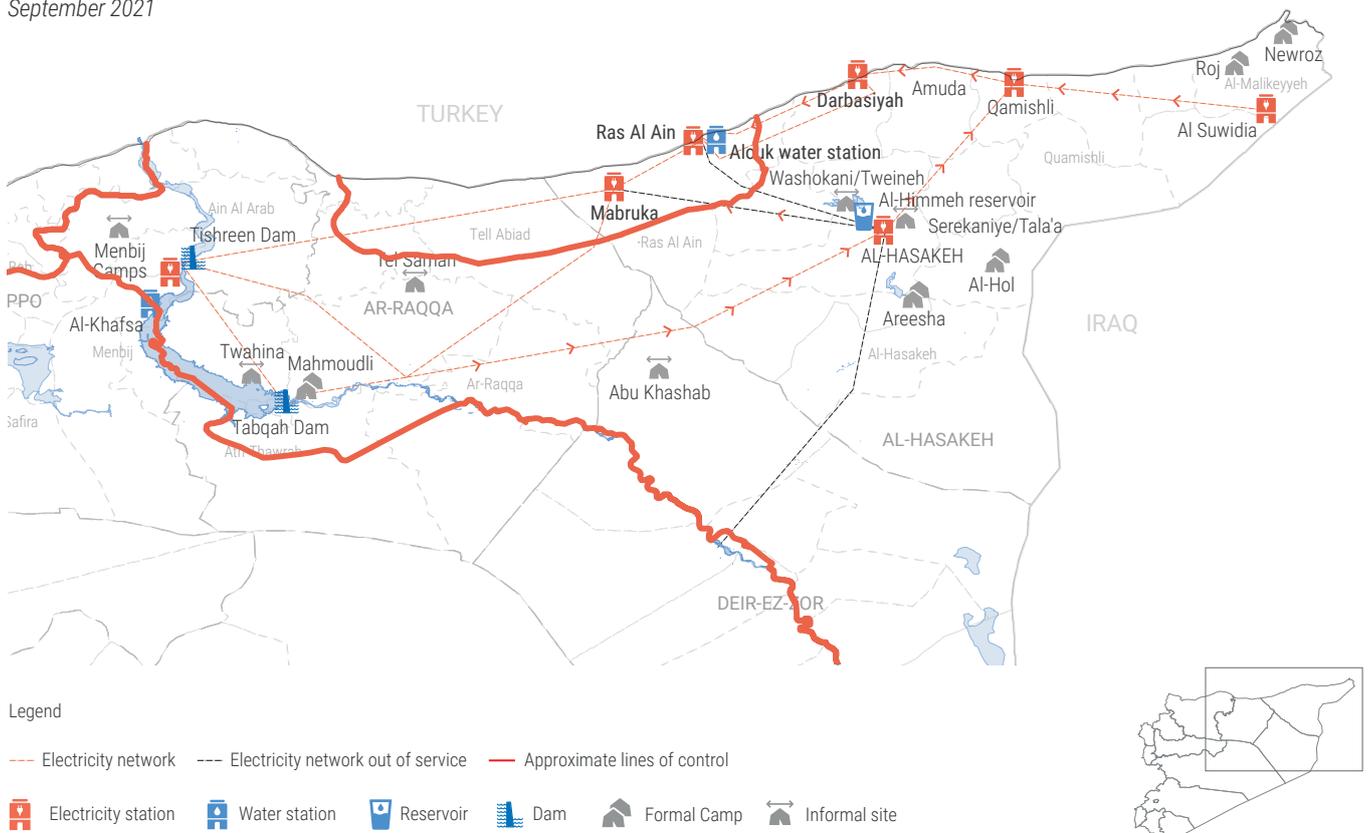
Al-Hasakeh Governorate, primarily Al-Hasakeh and Tal Tamer cities as well as 100,000 IDPs in Al-Hol, Tweina/Washokani, Al Talae/Serekaniye and Areesha camps and settlements and an additional 17,000 people in collective centres.

Military operation in October 2019 resulted in damage to electricity power grids, including the water station and water infrastructure in the area. Since late 2019, the station has experienced significant drops in output, operating at less than 30 per cent of total capacity between April and June 2021.

The Alouk station requires adequate electricity provision to function. The electricity comes from the Derbasiye power station and has been frequently cut off, or its level has been reduced, affecting the functioning of the water station. In addition, the electricity grid and water station require constant maintenance/rehabilitation by qualified and well-trained staff. After the station had been completely switched off between 23 June and 25 July 2021, a technical team was granted access and conducted required maintenance operations at Alouk water station on 25 July. The station subsequently resumed limited operation (10 boreholes out of the 30 that are equipped), with water provision well below required levels and reportedly not reaching Al-Hasakeh City. According to reports as of 9 September, the station has not been pumping water since 21 August.<sup>21</sup>

### Water and Electricity Networks in Northeast Syria

September 2021



17 IMMAP: North East Syria Crop Monitoring and Food Security – Situation Update: Impact of low rainfall and other crop stressors on winter crops, May 2021; OCHA Syria, Euphrates Water Crisis and Drought Outlook, 17 June 2021  
 18 IMMAP, Water Dynamics, Crises and Challenges in NES, July 2021  
 19 Economic and Agriculture Office of the Self Administration, quoted in IMMAP, Context Update NorthEastern Syria, 26 August 2021  
 20 As reported by NES NGO Forum, August 2021  
 21 NES NGO Forum, Operational Policy Update, 19-31 August 2021

The Alouk Technical Working Group (ATWG), led by the SSG co-chairs and UNICEF, are tasked with exploring alternative technical solutions for water provision to the affected areas. In July 2021 the ATWG concluded that other sustainable and alternative projects (existing and/or under implementation) were and will be unable to compensate for the loss of output from the Alouk station. The ATWG thus concluded that the Alouk station is the only existing and sustainable option for the provision of water to Al-Hasakeh and its surroundings.

### Functionality of Water Network Supplying Al-Bab Sub-District in Northern Aleppo Governorate

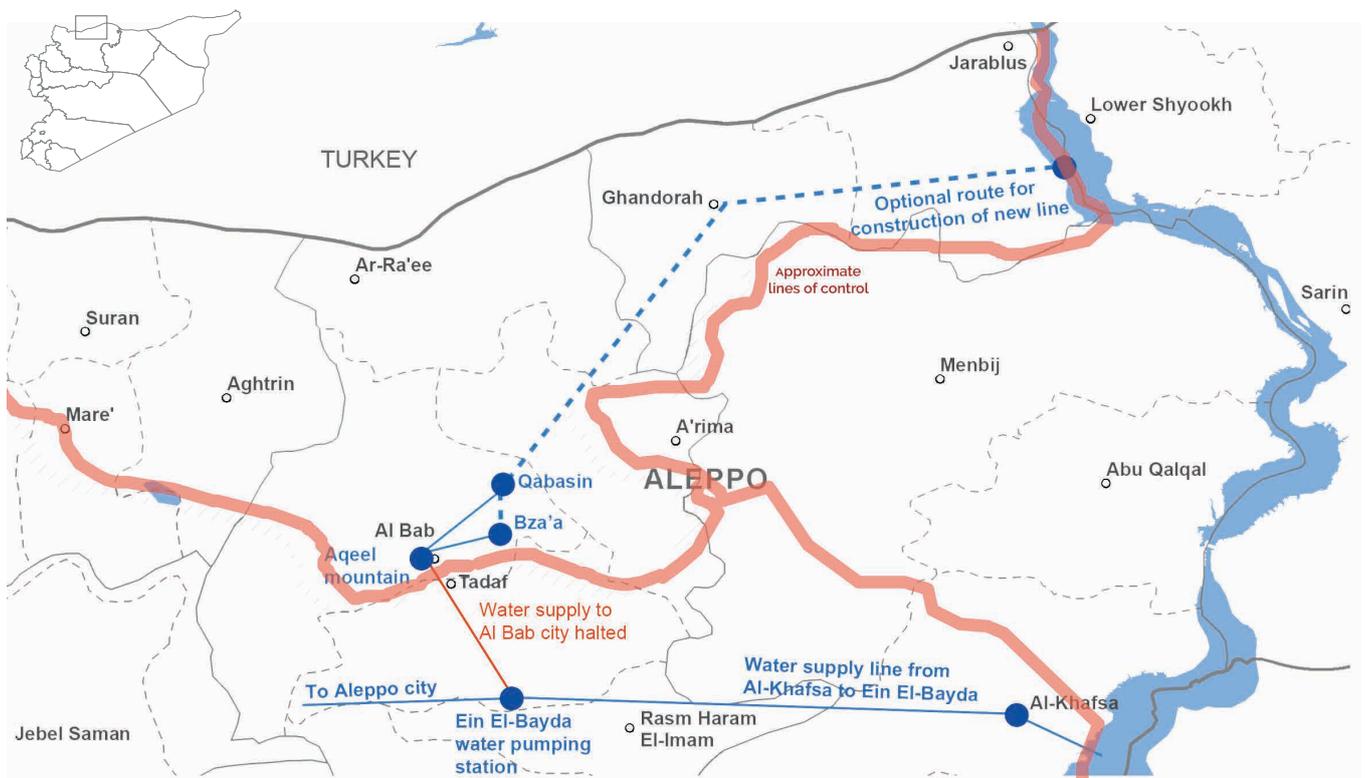
Al Bab city located in the northern countryside of Aleppo Governorate, with an initial population of 145,000 people. It is currently controlled by Turkish Armed Forces (TAF) and affiliated groups. The city and surrounding areas were previously supplied with water from the Al-Khafsa water station, located on the Euphrates River in the east of Aleppo Governorate, through the Ein El-Bayda water pumping station. Following changes in territorial control, both stations are now in Government of Syria-controlled territory and are no longer connected

to the water network supplying Al-Bab city and environs. In addition, the water network within Al Bab city and its connection with Ein El-Bayda water pumping station were extensively damaged during hostilities in 2016/17, with water provision disrupted several times and remaining unreliable since.

At present, there are more than 185,000 people in Al Bab sub-district, including host communities and IDPs, that rely on purchasing water extracted from wells in surrounding villages, private or public cisterns, and water trucking services. Access to water in these areas has been extremely limited, with the majority of the water sources unsafe for drinking, resulting in reports of widespread dehydration and high levels of water-borne disease.<sup>22</sup> The lack of water supply for agricultural purposes has also resulted in loss of income and livelihoods. Recent interventions by humanitarian organizations have focused on adding wells and pumping stations to the water network. While these interventions have met some of the needs, pumped water volume has dropped during the summer months and generally cannot fully compensate for the lack of regular water supply through Ein El-Bayda.

### Water Supply Network for Al-Bab Sub-District

July 2020



\* Source: Field sources

<sup>22</sup> According to the Early Warning Alert and Response Network (EWARN), Al Bab sub-district is among the top sub-districts across Syria to report water-borne diseases, including Typhoid fever and Leishmaniosis, since March 2017.

## 1.2

# Humanitarian Impact

Each of the above crises have their distinct climatic, technical and man-made causes, and have reinforced each other, have similar negative consequences for the population and exacerbated existing humanitarian needs amongst the population in northern and northeast Syria and parts of Aleppo. The principal humanitarian implications can be summarized as follows:

### Reduced access to safe and sufficient water for 5.5 million people, with severe implications for public health

- Approximately one third of the estimated 200 water pumping stations which typically pump, treat and deliver water from the Euphrates River, or connected lakes and canals, to approximately 5.5 million people<sup>23</sup> are currently significantly impacted by low water levels in the Euphrates River. This has dramatically reduced water supply through piped networks, on which the majority of communities in NES typically rely. In June, 44 per cent of the communities which were connected to the piped network received water for a maximum of only two days per week.<sup>24</sup> In addition, reduced rainfall has limited the replenishment of groundwater resources, on which other water sources like boreholes and wells depend.
- Limited operating capacity of the Alouk water station is specifically and currently limiting the provision of piped drinking water to an estimated 500,000 people in Al-Hasakeh Governorate, including up to 100,000 IPDs in Al-Hol, Tweina/Washokani, Al Talae/Serekaniye and Areesha camps in Al-Hasakeh.
- In addition, Al-Khafsa and Ein El-Bayda water pumping stations currently do not provide water to an estimated 184,000 people in Al-Bab sub-district in northern Aleppo Governorate, including Al-Bab city with a population of 145,000 people.
- These conditions combined have reduced access to water in an estimated 70 per cent of all communities in NES (specifically those in Deir-ez-Zor and Ar-Raqqa).<sup>25</sup> As a result, households have had little choice but to rely on unsafe water sources such as private boreholes or stored water and, most commonly at this point, frequently unregulated private water trucking.<sup>26</sup> Given the demand, water trucking prices have increased by 36 per cent between January and June 2021,<sup>27</sup> diverting household income away from other critical expenditures.
- A noticeable deterioration in water quality has been observed by communities in NES, particularly in the upper Ar-Raqqa region, the Al-Hasakah area, and communities in the southern Jazira region.<sup>28</sup> These trends are likely a result of communities being forced to use alternate, less safe water sources.<sup>29</sup> At the same time, concerns have been raised over diminishing water quality in the Euphrates River itself, a result of concentration of upstream pollution, including untreated sewage from Ar-Raqqa and industrial waste in the Balikh River. This is further increasing the likelihood of water-borne diseases and chronic illnesses via drinking water and the consumption of produce from farms irrigated with river water.<sup>30</sup>
- Consequently, WHO Early Warning, Alert and Response Network/System (EWARN/EWARS) data points to a progressive increase of water-related diseases in all three NES Governorates as well as Aleppo Governorate during the first half of 2021 (see page 27).
- In the current COVID-19 context, the reduction in safe and sufficient water is affecting critically required hygiene and other preventative measures, such as handwashing at home but also in formal and non-formal education facilities in NES – which were already suffering from poor WASH conditions before the water crisis.<sup>31</sup> COVID-19 cases continue to spike across NES, with Deir-ez-Zor for example reporting the highest case fatality rate – at nearly 17 per cent as of end-August – across all governorates in Syria.<sup>32</sup>
- The lack of access to safe water is disproportionately impacting women's and girls' health and reproductive health. Women have specific hygiene needs during menstruation, pregnancy and breast feeding, and the water crises pose risks of increased maternal morbidity and mortality.

23 Syria HCT, June 2021

24 REACH, Humanitarian Situation Overview Northeast Syria, June 2021

25 Ibid.

26 By June, key informants in 37 per cent of all communities reported water trucking as the most common source of drinking water. Ibid.

27 REACH, Market Monitoring Northwest and Northeast Syria, June 2021

28 In July 2021, 43 per cent of communities across NES perceived a deterioration in water quality, compared to 33 per cent of communities in May. REACH, Humanitarian Situation Overview in Northeast Syria, June 2021

29 IMMAP, Water Dynamics, July 2021

30 Mercy Corps Humanitarian Access Team, Measuring Agricultural Water Stress in Northeast Syria, August 2021

31 See Education sector chapter of this document.

32 WHO, Syrian Arab Republic COVID-19 Dashboard, accessed on 1 September 2021.

## The right to water and sanitation under International Law

Under International Human Rights Law (IHRL), the right to water is recognized as part of the right to an adequate standard of living. The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights. Access to safe, affordable and reliable drinking water and sanitation services are basic human rights. They are indispensable to sustaining healthy livelihoods and maintaining people's dignity. International human rights law entails specific obligations related to access to safe drinking water. These obligations require States to ensure everyone's access to a sufficient amount of safe drinking water for personal and domestic uses, defined as water for drinking, personal sanitation, washing of clothes, food preparation, and personal and household hygiene. These obligations also require States to progressively ensure access to adequate sanitation, as a fundamental element for human dignity and privacy, but also to protect the quality of drinking-water supplies and resources.

In Syria the right to water is further protected by the application of relevant International Humanitarian Law (IHL) norms. International humanitarian law protects certain categories of persons and objects. While this body of law does not mention the right to water, it contains various norms aimed at ensuring that persons not or no longer taking part in hostilities are not denied food or access to it. Moreover, IHL obligations binding parties to the conflict are to be implemented immediately and not progressively. Such rules include the special protection of objects indispensable to the survival of the civilian population, such as foodstuffs, agricultural areas for the production of foodstuffs, crops, livestock, drinking water installations and supplies and irrigation works, the prohibition of starvation as a method of warfare, as well as rules on access and the delivery of humanitarian assistance when the civilian population is in need.

### Poor agricultural production and loss of livelihoods, leading to or exacerbating food insecurity amongst at least 3.4 million people and increasing malnutrition rates

- Low water levels in the Euphrates River, poor rainfall and generally high temperatures, in combination with high prices for pesticides, fertilizers and fuel, have severely affected both rain-fed and irrigation-dependent crop production. Current crop forecasts predict anywhere between 75 to 90 per cent of total losses for rain-fed agriculture in NES,<sup>33</sup> and up to 25 per cent of losses for irrigation-fed agriculture at the end of the 2021 harvest season. Harvest and income loss is estimated to affect 72 per cent of farmers in NES,<sup>34</sup> and disproportionately women (accounting for 70 per cent of the farming work force) as well as female-headed households (25 per cent).
- Income and livelihood loss due to harvest failures as well as losses in the fishing sector, in combination with reduced access to safe water for drinking and domestic use, and disproportional high household expenses for food and water (trucking), amongst others, have negatively impacted an already highly food insecure population.
- Food Security and Agriculture sector partners currently estimate that the food security situation of an estimated 3.36 million people has been affected by the reduced water flow in the Euphrates River, as well as the drought-like conditions across northern and northeast Syria, which have also impacted other parts of the country<sup>35</sup>. This is against a backdrop of widespread food insecurity in the region, with almost seven out of ten people (68 per cent or 4.54 million people) in Aleppo, Al-Hasakeh, Ar-Raqqa and Deir-ez-Zor Governorates already considered food insecure by early 2021, before the current water crisis emerged.<sup>36</sup>
- In combination with an increased use of contaminated and unsafe water, the above trends are exacerbating already higher than national average rates of malnutrition in NES. Localized assessments in Ar-Raqqa have documented worrying increases to 13 per cent Global Acute Malnutrition in children under five years of age, including three per cent with severe acute malnutrition.<sup>37</sup> In Al-Hol sub-district three times more cases of severe malnutrition were reported in July compared to May 2021.<sup>38</sup> An increase in nutritional complications in pregnant and lactating women is also observed.<sup>39</sup> These trends are likely to also exacerbate chronic malnutrition prevalence in the affected region, which in Deir-ez-Zor for example already is amongst the highest country-wide, at 18.5 per cent.<sup>40</sup>
- The collapse of winter crop harvest has also reduced fodder stocks, thereby threatening livestock-based livelihoods and the long-term viability of agricultural producers in NES, specifically in terms of seed availability and land preparation activities for the summer in 2021 and the winter 2022 cropping seasons.

33 Authorities quoted by Syria HCT, June 2021 and by NES Forum, August 2021.

34 See FSA Chapter in this document.

35 Preliminary findings from the 2020/2021 Crop Production Assessment Mission (CFSAM) conducted by FAO indicate significant agriculture production losses in several Syrian Governorates, including Deir-ez-Zor, Rural Damascus, Al-Hasakeh, Homs, Ar-Raqqa, Dar'a and As-Sweida.

36 FSA Sector, 2021 HNO

37 NES NGO Forum, August 2021 and WoS Health Sector, September 2021

38 NES Health Working Group, Outbreak Monitoring and Preparedness Dashboard, accessed 30 August 2021

39 See Nutrition chapter in this document

40 WoS Nutrition Sector, 2021 HNO

### Reduced electricity generation and availability for up to three million people:

- The reduced water flows in the Euphrates River and subsequent decrease in hydro-electric power generated by the Tishreen and Tabqa dams have compounded already existing fuel and electricity shortages in the region. This has impacted many of the estimated 200 water stations along the Euphrates River, as these stations rely on electricity to pump water for drinking, domestic use and irrigation-dependent agriculture.
- Major urban centres in NES, like Al-Hasakeh city, are experiencing acute electricity shortages, with many communities receiving an average five to six hours of electricity a day.<sup>41</sup> Electricity rationing in eastern rural Aleppo and Ar-Raqqa has led to power outages of 17 to 18 hours a day.<sup>42</sup>
- The absence of regular and reliable electricity has significant impacts at the household and the community levels. Households, for example, are unable to draw water from boreholes using electric pumps. In addition, lack of access to electricity increases protection concerns, including GBV and especially for women and girls.
- At the same time, health facilities in NES are forced to increase already high<sup>43</sup> reliance on generators which consume already scarce and costly fuel, heightening the risks of interrupting critical health services, including surgery, cold chain storage, sterilization, safe blood storage, and timely and accurate diagnosis, as well access to maternal and gynecological services.

### Increased risks to protection and social cohesion:

- The human right to water is indispensable for leading a life in human dignity. It is a prerequisite for the realization of other human rights.<sup>44</sup>
- Reduced water availability in the regions stands to increase protection risks for specific population groups. It leads to an

increase in harmful coping mechanisms and negatively impacts social cohesion, as tensions amongst different competing users of water as a resource increase.

- Absence of safe and sufficient drinking water supply and proper sanitation facilities has a disproportionate effect on the lives of women and girls, who usually bear the responsibility for collecting water, which can be time-consuming and result in increased health risks, such as uterine prolapse, musculoskeletal problems, fatigue and stress, as well as reduced school attendance.
- Similar to other areas of the country, the macro-economic decline in 2020 has led to widespread losses of jobs and income opportunities as well as sharp increases in food, (trucked) water and other basic goods across NES. All current and predicted impacts described above will financially squeeze households across NES further, making increased reliance on harmful coping strategies more likely. This includes households taking on more debt, with debt payment already accounting for 13 per cent of average household expenditure in Deir-ez-Zor (the highest figure country-wide) and 10 per cent in Al-Hasakeh.<sup>45</sup> Protracted debt locks families into cycles of repayment, limits their ability to afford goods and services required to meet basic needs, and reduces their financial ability to absorb new shocks.
- More concerning harmful coping mechanisms include increased reliance on child labour and child marriage, impacting children's rights and increasing the risk of gender-based violence. Available data indicates that five per cent of children of IDP households work to support household income, with rates more than three times higher for female-headed IDP households, and particularly in NES.<sup>46</sup> An increase in child marriage – reported in 18 per cent of communities across Syria as a very common issue<sup>47</sup> – will continue to leave girls at risk of sexual and physical abuse, poor nutrition and increased chance of maternal neonatal death.

41 REACH, *Humanitarian Situation Overview Northeast Syria*, June 2021

42 Syria HCT, June 2021.

43 More than a quarter of public hospitals across Syria require generators, with reliance particularly high in Aleppo (55 per cent) and Al-Hasakeh (50 per cent) Governorates. WHO Health Resources and Services Availability Mapping Systems (HeRAMS), Q2, 2021

44 United Nations Committee on Economic, Social and Cultural Rights, General Comment No. 15: Articles 11 and 12 (Right to Water), Article 1, [https://www2.ohchr.org/english/issues/water/docs/CESCR\\_GC\\_15.pdf](https://www2.ohchr.org/english/issues/water/docs/CESCR_GC_15.pdf)

45 2021 Syria HNO

46 Ibid.

47 Ibid.

## 1.3

# Response Priorities

Under this plan, six sectors will (continue to) implement and scale up a number of critical response activities over the course of the next six months (September 2021 – February 2022), aiming to assist a total of 3.4 million people in northeastern Aleppo Governorate as well as Ar-Raqqa, Al-Hasakeh and Deir-ez-Zor Governorates. Other sectors<sup>48</sup> are monitoring the situation closely and have reviewed internal stocks and contingency measures.

### Immediate Priorities by Humanitarian Partners (next six months):

- Ensure access to safe water for an estimated **3.44 million** people, through the following interventions:
  - retrofitting and rehabilitating **185** water stations;
  - rehabilitating and maintaining **65** tanker filling stations;
  - providing chlorine to **147** water stations and/or tanker filling stations;
  - limited improvements to safe water provision in **110** Health Centers and **534** Education Facilities, as based on close coordination between WASH, Education and Health sectors;
  - emergency water trucking to an estimated **427,000** people (mostly related to the dysfunctional Alouk water station);
  - for the Alouk water station specifically: access allowing (see page 15), maintain and rehabilitate the station (boreholes and pumping system, including electricity), look further into alternative sources of electricity (e.g. solar power);
  - for the Al-Bab water station specifically: beyond the now expired SCHF project funding, maintain (including through a cost recovery system) and operationally enhance the recently established and rehabilitated system of additional wells and pumping stations.
- Respond to immediate food assistance and livelihood support needs of an estimated **3.36 million** food insecure people by:
  - providing four-months protection food rations to an estimated **334,000** vulnerable farming and food insecure households (**1.67 million** people);
  - targeting approximately **237,000** households (**1 million** people) with adapted crop seeds through in-kind or cash and voucher programming;
  - supporting at least **120,000** households (**688,000** people) engaged in livestock production with emergency livestock.
    - rehabilitating water pumping sets (i.e. for irrigation) in the most severely affected locations, including training of affected farmers on irrigation management and water conservation techniques.
- Treat malnutrition in **6,000** severely malnourished children, **25,000** moderately malnourished children and **200,000** pregnant and lactating mothers through mobile and fixed delivery modalities, and support training and capacity-building on early detection and recommended infant and young child feeding practices in emergencies (IYCF-E).
- Mitigate and prevent livelihood and income loss through short-term work opportunities and vocational training for an estimated **23,000** people, with a specific focus on vulnerable groups including women, people with disabilities, female headed households and young people; rehabilitate basic, local economic and agriculture infrastructure, including **200** markets, warehouses and small shops and twenty-two kilometers of irrigation canals and valleys; and establish water users' associations/groups to promote water use efficiency in **31** sub districts.
- Scale up the provision of essential health services, including reproductive health, by at least **six** hospitals and **20** Primary Health Centers (PHC), set up **12** Rapid Response Teams (RRTs), and train an additional **78** RRTs to support the early detection and response to water-borne diseases and acute malnutrition, including complications for PLW, in affected communities, and provide required medicines, equipment and training.
- Implement specific services as well as training and awareness raising initiatives in order to respond to and mitigate significant protection needs and risks across the affected population, including through:
  - provision of Protection, GBV and CP services (case management, coordination and referrals, legal services, supporting community-based structures, PSS, parental care, legal counselling) for **5,200** children and **2,300** GBV victims;
  - implementation of community-led initiatives in an estimated **45** communities;
  - awareness-raising sections on critical protection risks and prevention approaches, including menstrual hygiene management, for an estimated **110,000** affected people.

<sup>48</sup> This includes the WoS Shelter/NFI Sector and S/NFI sectors in each response area, which maintain their commitment to provide emergency support to those newly displaced by providing emergency shelter and core NFI support. Sector partners remain on standby to respond to emerging needs as necessary and will re-prioritize existing contingency stocks depending on the situation on the ground. As at 2 September 2021, NES sector partners have 800 emergency shelter kits and 915 NFI Kits in stock, while HCT sector partners have 2,000 family tents and 5,000 NFI kits that may be deployed in case of sudden displacement. Additionally, SNFI partners in NWS have 14,000 family tents and 3,000 NFI kits available as contingency stock, with additional stocks expected to arrive in the pipeline.

## Recommendations regarding Alouk water station:

### Recommended actions by donors:

- Provide additional funding to continue to support:
  - emergency water trucking when Alouk is partially or totally switched off.
  - the implementation of 17 reverse osmosis units on boreholes in Al-Hasakeh city;

### Recommended actions by parties to the conflict:

- Based on the critical status of Alouk, parties to agree to ensure sufficient electricity provision to Alouk water station, and sustainable access for the technical personnel in The Department of Water Resources and for technical elements of the humanitarian community to support Alouk's functionality.
- Protect and provide access to both Alouk and the al Darbasiyah powerplant.

*Progress on the above issues would significantly decrease the scope and costs for currently required humanitarian response, for example for water trucking.*

## Recommendations regarding the Al-Bab water network:

### Recommended actions by donors:

- Ensure continued funding to maintain and operationally enhance the recently established and rehabilitated network of twenty wells and eighteen pumping stations, including the inclusion of water storage tanks for a gravity flow water distribution system. These operational enhancements would cover an estimated 70 per cent of domestic needs (follow-up to SCHF funded project, which ended 26 August).
- Consider funding for increased diversification of electricity sources, including the introduction of solar panels.

### Recommended actions by parties to the conflict:

- Restore water supply from Al-Khafsa and Ein El-Bayda water pumping stations to Al-Bab city and surroundings by reconnecting these stations to the water network.
- Continue efforts to reconnect the principal water stations supplying Al-Bab sub-district to the electricity grid.
- Similar to other locations where ground water recharge has been greatly affected, prioritize the Al-Bab area for a comprehensive hydrogeological study.

## Considerations for longer-term actions and technical support

In order to build climate change resilience, build on humanitarian investments and support sustainable recovery and development, enhance social cohesion and improve people's livelihoods and well-being, sustainable natural resource (water and land) and energy management need to be addressed along the Euphrates River basin, and across Syria. Key measures should include:

- mapping of existing groundwater resources in particularly depleted areas to assess remaining viable aquifers; establishment of plans for managing and regulating groundwater resources; and promotion of best practices for water use by private actors and farmers;
- protection of water resources, including preventing the contamination of surface and groundwater resources and wells;
- repair of piped systems to reduce water losses;

- increased efficiency of water use, supporting water harvesting projects and using high efficiency irrigation methods;
- promotion of non-conventional water use (e.g. treated wastewater) and a generalized need to invest in sewage / wastewater treatment systems and the re-use of treated waste, for example, in irrigation;
- improvement of agricultural production practices (e.g. drought tolerant crops and trees, adopting 'climate smart' agriculture);
- as far as energy production, greater diversification of energy sources, e.g. through solar energy, to reduce operational costs and decrease dependency on hydro-electric power generation.

Implementing these measures will require strengthening the capacities of, and coordination efforts between, national and sub-national government institutions and authorities, communities and vulnerable groups to assess, plan and manage climate change-induced water, land and energy challenges. At the same, transboundary coordination and agreements on water management and use are required, including provisions on monitoring.

## Part II: Needs and Response by Sector

### 2.1

## Early Recovery and Livelihoods

#### CONTACTS

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#### Critical Needs

The severity scale and complexity of Early Recovery and Livelihoods (ERL) needs of people in northeast Syria (NES) remain extensive. In the first half of 2021, many factors continue to impact the humanitarian situation in NES to varying degrees. However, the reduction of water flows in the Euphrates River continues to stand out in the list of reported risks. The hydroelectric plant of Tabqa Dam, has significantly diminished output, leading to reduced energy production capacity, which has in turn resulted in power blackouts across northeast Syria. Moreover, frequent shutdowns of the Alouk water station and its needed repairs, leave the flow of water from Alouk insufficient to meet the needs of the population. The combination of these factors has contributed to lowering the capacity of households and communities to cope with internal and external stressors, keeping their resilience under constant pressure.

As a result of water level shortage, the livelihoods and income for farmers in Ar-Raqqa, Deir-ez-Zor and parts of Aleppo Governorates have been impacted and have led to job loss in rural livelihoods. Across NES, 60,150 owners of agricultural land and their families are directly affected and 83,600 seasonal agriculture workers, including other agricultural activities workers and their families are indirectly affected. It is estimated that more than 70 per cent of seasonal workers in rural areas are women, which becomes the main group effected by the poor performance of the agriculture sector.

The fisheries sector is also impacted by the drop in water levels, which

threatens the existence of fish varieties that live in shallow waters. Fishing has become unregulated and new fishermen have entered the sector, which negatively impacts the licensed fishermen. In Ar-Raqqa Governorate, the number of officially licensed fishermen is about 500 fishermen, while the number of unlicensed fishermen who work randomly is about 5,000 fishermen. In Deir-ez-Zor Governorate, 1,000 fishermen and their families are also affected by the water crisis.

The reduction of resources and livelihood opportunities caused by the water crisis may create tensions between communities. The associated negative impacts will contribute to increasingly multidimensional community needs and exacerbate vulnerabilities.

#### Sector-wide Response Priorities

From an ERL perspective it is important to provide alternative (to the agriculture sector) job opportunities for seasonal workers, until the agriculture sector requires their services again. Additionally, vocational trainings should partially consider alternative sectors not linked with agriculture production.

Against this background, ERL intervention will focus on activities that address the most urgent needs. This will be mainly focused on income-generating support, restoration of basic and social services and other sustainable non-agricultural livelihoods opportunities.

Therefore, the sector has identified the following activities for the planned intervention:

#### Planned intervention activities

ACTIVITIES (ERL HCT SECTOR ONLY)	TARGETS	REQUIRED FUNDING (US\$)	AVAILABLE / REALLOCATED FUNDING (US\$)	FUNDING GAPS (US\$)
Create short-term work opportunities, including women and female headed households	182,000 people * 3 months	\$2,650,000	0	\$2,650,000
Provide vocational and skills training opportunities, including women and female headed households	3,500 people	\$1,400,000	\$780,000	\$620,000

ACTIVITIES (ERL HCT SECTOR ONLY)	TARGETS	REQUIRED FUNDING (US\$)	AVAILABLE / REALLOCATED FUNDING (US\$)	FUNDING GAPS (US\$)
Rehabilitate or repair basic, local economic infrastructure (markets, storage, warehousing and processing, fishing shops).	250 infrastructures	\$1,250,000	0	\$1,250,000
Establish water users' associations/groups (WUAs/WUGs) in the target area to promote water use efficiency by committing to irrigation schedules	31 sub- districts	\$310,000	0	\$310,000
Clean irrigation canals and valleys	22 km	\$1,000,000	\$400,000	\$600,000
Provide market-based modalities of assistance to vulnerable households	750 households	\$525,000	0	\$525,000
<b>Total</b>		<b>\$7,135,000</b>	<b>\$1,180,000</b>	<b>\$5,955,000</b>

The following specific activities are included in the WASH sector plan and implemented in coordination between the ERL and the WASH sectors;

- Alouk water station: rehabilitation of ten wells through the provision of needed mechanical spare parts and electrical equipment.
- Nafasha pumping stations: rehabilitation of nine wells and the provision of reliable source of energy (solar systems).
- Rehabilitation of ten kilometers of sewage networks in Rural Qamishli and Al Yaroubieh which suffer from environmental and health related challenges.
- Provision of reliable and sustainable sources of energy to 19 wells previously rehabilitated by UNDP.
- Rehabilitation of ten wells in need of urgent rehabilitation.

### Advocacy on Longer-term Response

The rehabilitation of Euphrates River hydroelectric plant in Tabqa will secure the northern region with energy, and will result in the provision of drinking water for Aleppo city and parts of Rural Ar-Raqqa Governorate. It will also enable the operation of pumping stations for irrigation in northern and eastern Aleppo. This will contribute to an improved humanitarian situation and positively impact 1,031,862 inhabitants in Aleppo city and its rural areas, Al-Hasakeh Governorate and Ar-Raqqa city.

With the wells in Alouk and Nafasha pumping station being connected to the water grid lines for both Al-Hasakeh and Qamishli cities, the rehabilitation of the wells will mean that the whole population in the target area will benefit from the rehabilitation efforts.

Finally, the establishment of a new water grid, as well as the rehabilitation and the upgrading of the existing water system in Al-Bab city, will respond to the current gaps in access to water in the area, and will provide a more sustainable solution to the issue.

### ERL Sector Financial Requirements

SECTOR BUDGET	TOTAL REQUIREMENTS (US\$)	AVAILABLE FUNDING (US\$)	FUNDING GAP (US\$)
HCT Sector	\$6,360,000	\$1,180,000	\$5,180,000
NES Early Recovery Working Group	Activities prioritized by the NES Early Recovery Sector are included under other sectors, mainly WASH and FSL.		
HLG Cluster	\$775,000	0	\$775,000
<b>Total</b>	<b>\$7,135,000</b>	<b>\$1,180,000</b>	<b>\$5,955,000</b>

## 2.2 Food Security and Agriculture

### CONTACTS

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### Critical Needs

The erratic rainfall during the 2020/2021 agricultural season across the eastern region of the Mediterranean Basin, which includes Turkey, Syria and Iraq, has altered the flow of the Euphrates River, and resulted in the river flow decreasing to critical levels. This hydrological crisis in Syria has adversely affected irrigated crops, particularly in Ar-Raqqa and Deir-ez-Zor Governorates. The reduced water flow in the Euphrates River from 500 cubic meters/second (m/s) to around 214 cubic m/s in June 2021, has already impacted the food and nutrition security and livelihoods of most farmers in Deir-ez-Zor and Ar-Raqqa and exposing farmers in some parts of Aleppo to potential risk.<sup>49</sup> The prevailing water scarcity, as a result of the erratic seasonal rainfall and reduced water flow in the Euphrates River has added an additional layer of complexity to an already alarming food insecurity and dire economic situation, with 12.4 million people in Syria already facing acute food insecurity at the beginning of 2021. The water assessment report conducted by The Food and Agriculture Organization of the United Nations (FAO) from June – August 2021 indicates that 438 pumping stations are now out of order due to the reduced water flow in the Euphrates River and would need urgent attention.

Livestock have also been threatened by the Euphrates River water crisis. The production of fodder crops particularly during the summer season has been adversely affected. Herders are unable to access some locations in the Badia for natural grazing of their animals (i.e. sheep in particular), as a result of the unstable security situation. Even accessible locations are not in good condition due to the erratic climatic conditions. This is expected to force many herders to sell their animals, which will impact their resilience and reducing the livestock numbers in Syria. The impact of water scarcity is already evident in the animal prices which have dropped by at least 20 - 30 per cent,<sup>50</sup> while feed prices have doubled from last season. Female-headed households are already showing higher levels of vulnerability to food insecurity, compared to male-headed households, since

they rely on livestock rearing and food processing, which have been affected by the worsening water scarcity.

The sector notes that the 2020/2021 rainfall season was significantly poor and erratic, both in terms of temporal and spatial distribution, combined with a significant delay in the onset of rainfall. This was further worsened by several successive seasonal dry spells and an early cessation of rainfall, with the last rains being received in mid-April 2021. This significantly affected critical crop growth and development stages, especially grain filling. The aforementioned seasonal constraints were also coupled with significant shortages and high cost of agriculture inputs, including diesel fuel, which resulted in limited access to water and ability to provide supplementary irrigation.

Livestock are also a vital source of food and nutrition security and livelihoods for a large number of vulnerable rural households in Syria, especially women and children. Due to the threat of drought-like conditions that has resulted in limited availability of pasture and fodder, coupled with the high cost of feed, the prevailing water scarcity and worsening economic challenges, the livestock sector is facing substantial shocks and losses. As the drought-like conditions and economic crisis persist, the capacity of vulnerable small scale livestock keepers to generate income and to access food, continues to erode. If support is not provided, the potential loss in or even death of livestock assets will significantly affect the small holders, especially women, since traditionally, they rely on small ruminants as a source of livelihoods and have less capacity to access resources for their replacement.

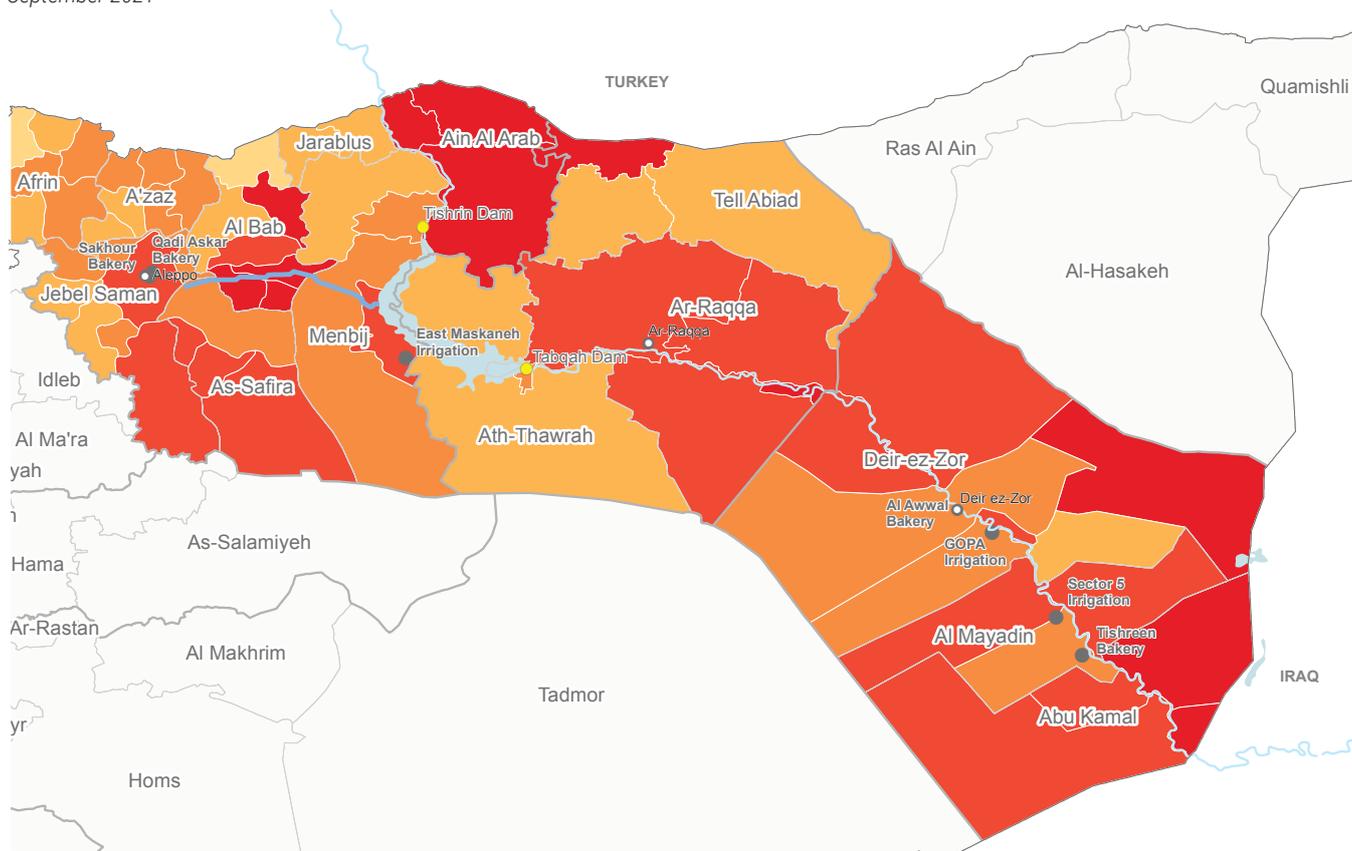
From preliminary observations and findings from the 2020/2021 Crop Production Assessment Mission being conducted by FAO, the seasonal performance, agriculture production losses and the severity of the drought-like conditions significantly affected Deir-ez-Zor, Rural Damascus, Al-Hasakeh, Homs, Ar-Raqqa, Dar'a and As-Sweida Governorates.

<sup>49</sup> Euphrates Water Crisis & Drought Outlook, OCHA: June, 2021

<sup>50</sup> Agriculture Input and Commodity Price Bulletin, FAO: June 2021.

## Food Insecure Prevalence In Euphrates Basin (Aleppo, Ar-Raqqa, Deir-Ez-Zor)

September 2021



Legend

● WFP Interventions ● Dam ○ Major Towns

Consolidated Approach to Reporting Indicators of Food Security (Moderate and Severe)

Less than 20% 21% - 40% 41% - 60% 61% - 80% 81% - 100%

\* Source: WFP

### Sector-wide Response Priorities

In total 3,357,723 (690,805 households) farmers and households' members are estimated to be affected by the water crisis in Syria, and will be assisted as follows:

- 333,674 (1,668,835 people) most vulnerable farming and food insecure households affected by the drought-like conditions across Syria will receive four months of protection food rations (PFRs) under the sector's integration strategy;
- 1,000,964 people (237,079 households) will be targeted with appropriate and adapted crop seeds through in-kind or CVA, which will include staples (i.e. wheat and barley), winter vegetables and different leguminous varieties to maintain production of nutrient-dense crops;
- at least 687,924 people (120,052 households) engaged in livestock production, who have been affected by the drought-like conditions, will be targeted with emergency livestock support.

To maintain this response, the total funding gap currently is US\$146,573,178.

### Outcome 1: To improve the food security status for most vulnerable households to meet immediate food security needs.

- Activity 1: Provide Protection Food Rations (FRs) to most vulnerable farming households, including livestock keepers and other food insecure households affected by the water crisis.

Under this activity, an estimated of 237,079 (1,000,964 people) most vulnerable farming and food insecure households affected by the drought-like conditions across Syria, including women and children, female headed households, elderly people and people living with disabilities, will receive four months of protection food rations (PFRs) under the sector's integration strategy. The PFRs will ensure that immediate food needs are met and that the affected households do not resort to adverse coping mechanisms until the next harvest period. The PFRs will seek to complement the emergency agriculture assistance highlighted below.

## Outcome 2: Maintain food production and protect livelihoods in times of crises.<sup>51</sup>

- **Activity 2: Distribution of quality emergency agriculture production inputs to enable affected farmers to plant for the coming season (i.e. wheat, barley and legume support), in addition to provision of trainings.**

The erratic 2020/2021 rainfall resulted in a poor harvest, both in terms of seed quantity and quality and the sector proposes to respond quickly, effectively and at scale targeting 1,000,964 people (237,079 households) with appropriate and adapted crop seeds. The emergency seed support through in-kind or CVA will include staples (i.e. wheat and barley), winter vegetables and different leguminous varieties to maintain production of nutrient-dense crops. The sector will seek to go beyond providing inputs and will incorporate training on climate-resilient agricultural practices. The emergency agriculture input distribution coupled with the above-mentioned training will also enhance resilience to future climate-induced shocks and other contextual constraints.

- **Activity 3: Asset protection through emergency animal feed distribution and support to fodder production.**

With the prevailing drought-like conditions and difficult economic environment, livestock condition and production is gradually worsening. Informed by the FAO Livestock Emergency Guidelines (LEGS), priorities under this activity will include emergency animal feed distribution, through in-kind or CVA, in conjunction with veterinary support, with an objective of protecting livestock assets. At least 687,924 people (120,052 households), including women, female headed households, elderly people, people living with disabilities engaged in livestock production, who have been affected by the drought-like conditions, will be targeted with the emergency livestock support. Where feasible, the sector will work on improving agricultural knowledge and skills on alternative and appropriate fodder production techniques as this will contribute to household resilience and potentially increase productivity.

- **Activity 4: Rehabilitating water pumping sets (i.e. for irrigation), in most severe effected locations to adapt with the water crisis, including training of affected farmers on irrigation management and water conservation techniques.**

The link between water and food and nutrition security is intrinsic. To enhance the resilience of agriculture in Syria, notably irrigated crop and livestock production systems, the sector proposes to rehabilitate 55 pumping sets in most severely affected locations across Ar-Raqqa and Deir-ez-Zor Governorates. The support will include trainings in irrigation management and water conservation.

### Advocacy on Longer-term Response

The resilience of communities in Syria has declined significantly since the conflict broke out in 2011. Conflict, displacement, severe

economic shocks and more intense and frequent extreme weather events have intensified food insecurity and impacted households' coping capacities and livelihoods. Those dependent on agriculture have seen their productive assets depleted, which in turn has limited their ability to engage in efforts to build self-reliance and reduce their reliance on external aid. There is also a risk that affected farmers will leave rural areas in search of jobs, food and water supplies. More importantly, the food security crisis in Syria cannot be reversed or addressed without adequately addressing the contextual drivers and challenges impacting food production in the long-term.

Having proposed the above-mentioned emergency interventions to address the water crisis, drought-like conditions and climatic change, the sector believes that there is need to "close-the-food gap" through focusing more on opportunities that strengthen the ability of families to become self-sufficient and more resilient as proposed below:

- Scale up the Protection Food Rations (PFRs) to the most vulnerable farming households, including livestock keepers and other food insecure households affected by the water crisis.
- Urgently increase support and funding towards agriculture since the sector plays a key role in Syria, including towards building a peace build. Serving as a social stabilizer contributes to the significant reduction of the food insecure population, at the same time (enhances) resilience and (improves) livelihoods.
- Promote relatively drought tolerant crops in the local farming systems, including access to drought resistant crops' seeds, is of paramount importance, since these can withstand reduced water availability.
- Scale-up support towards the light rehabilitation of irrigation systems, linking this with efficient systems for water delivery to crops and animals, as well as the use of non-conventional water (i.e. treated water) for irrigation. The nexus between water, food and nutrition security is intrinsic. Irrigation systems can be rehabilitated through conditional cash programming, where appropriate.
- Carefully support animal health (in relation to livestock and in the long-term), through vaccination campaigns and the scale-up of the introduction of improved fodder crops. Processing and sensitizing affected communities on the use of crop residues to feed livestock.
- Supporting affected vulnerable farmers in the long-term, with interventions that enhance access to markets, rural financial services and entrepreneurship skills, is of paramount importance.
- Promote agricultural diversification with context-specific climate smart agriculture (CSA), including with a focus and increase of production of crops and livestock for a nutritious diet.
- Support the wheat value chain with wheat cultivation/production activities and to enhance the supply wheat supply chain.

<sup>51</sup> The crises refers to the water crisis and drought-like conditions that have impacted food security, nutrition and livelihoods.

## FSA Sector Financial Requirements

SECTOR BUDGET	TOTAL REQUIREMENTS (US\$)	AVAILABLE FUNDING (US\$)	FUNDING GAP (US\$)
HCT Sector	Euphrates:	Euphrates	Euphrates
	\$33,323,600	\$370,000	\$32,935,600
	Drought:	Drought-like conditions	Drought-like conditions
	\$43,070,823	\$0	\$43,070,823
	<b>TOTAL</b>	<b>TOTAL</b>	<b>TOTAL</b>
	<b>\$76,394,423</b>	<b>\$370,000</b>	<b>\$76,024,423</b>
NES FSL Working Group	Euphrates	Euphrates	Euphrates
	\$62,684,148	\$25,685,374	\$36,998,775
	Drought-like conditions	Drought-like conditions	Drought-like conditions
	\$43,025,430	\$13,920,528	\$29,104,902
	<b>TOTAL</b>	<b>TOTAL</b>	<b>TOTAL</b>
	<b>\$105,709,578</b>	<b>\$39,605,902</b>	<b>\$66,103,677</b>
HLG Cluster	Drought-like conditions	Drought-like conditions	Drought-like conditions
	\$24,600,000	\$4,600,000	\$20,000,000
	<b>TOTAL</b>	<b>TOTAL</b>	<b>TOTAL</b>
	<b>\$24,600,000</b>	<b>\$4,600,000</b>	<b>\$20,000,000</b>
WoS FSS Total per crisis	Euphrates	Euphrates	Euphrates
	\$96,007,748	\$26,055,374	\$69,952,375
	Drought-like conditions	Drought-like conditions	Drought-like conditions
	\$110,696,252	\$18,520,528	\$92,175,725
<b>WoS - Total Water crisis</b>	<b>\$206,704,001</b>	<b>\$44,575,902</b>	<b>\$162,128,099</b>

## 2.3 Health

### CONTACTS

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### Critical Needs

Many factors continue to challenge Syria's Health sector, contributing to the low rate of functionality of health facilities across the country. According to The World Health Organization's (WHO) whole of Syria (WoS) consolidated HeRAMS Q2 2020, the capacity and functionality of the health system in NES was extremely low, compared to other areas of Syria, with only 58 per cent of hospitals and 53 per cent of primary health care (PHC) facilities being fully functional.

The Health sector in Syria has been further exacerbated by two other factors; the first is the COVID-19 pandemic which has been a burden on the already greatly weakened health system devastated by protracted complex crisis, the second is the water crisis, which has become a serious public health concern and is affecting and threatening the lives of millions of people.

Diseases related to unsafe water, poor sanitation and hygiene are among the most common causes of illnesses and deaths among the population, particularly in Syria's conflict environment. Water scarcity and lack of access to water and sanitation has substantial and significant impacts on the health of the population, especially vulnerable groups such as (pregnant and lactating) women, children and elderly, as well as IDPs in both formal and informal camps.

The laboratory results of ten water samples tested and analyzed on 19 July 2021 revealed that all of the samples were contaminated, and salmonella was detected in two samples collected from a raw river (WHO August 2021).

In addition to other water-borne infections, diarrhea is the most common direct health impact of low water accessibility and availability. Access to clean water plays an integral role in the

protection against many diseases, including sexually transmitted diseases (STDs). Women are more at risk of contracting STDs (e.g. gonorrhoea, chlamydia and syphilis), which also puts their partners at risk. Additionally, lack of water might lead to limited options to take care of women's hygiene needs during menstruation, which increases the risk of urinary tract infections (UTIs) and vaginal infections predisposing women and girls to reproductive tract infections with potential long-term effects on their reproductive health. Similarly, a shortage of water, both in terms of time and distance, is a major factor in the development of mental health related illnesses such as stress and anxiety.

Furthermore, when combined with other aggravating factors such as lack of access and food availability, the drought and the water shortage are exacerbating the prevalence of malnutrition in many of Syria's impacted areas, notably in northeast Syria. A NES NGO's latest malnutrition assessment report in Ar-Raqqa (August 2021), conducted at seven primary health care facilities in Ar-Raqqa City, has sought to determine and estimate of the proportion of children (6-59 months) with severe acute malnutrition (SAM). The assessment findings demonstrate that SAM is widespread and is a significant burden among the children under the age of five years who presented at primary health care (PHC) settings between June – July 2021. More than 13 per cent (1,142) of screened children (8,728) have either SAM or moderate acute malnutrition (MAM).

The table below of updated EWARN/S data shows the increase in the acute diarrhea caseload in the reporting period, between January and July 2021 (week 1 - 30), compared to the same period in 2020.

## Funding gap

2021

GOVERNORATE	ACUTE DIARRHEA	ACUTE DIARRHEA	DIFFERENCE
	Jan - Jun 2020	Jan - Jun 2021	
Aleppo	163,247	193,056	18%
Al-Hasakeh	99,646	132,458	33%
Ar-Raqqa	58,261	72,278	24%
As-Sweida	1,529	1,408	-8%
Damascus	19,517	12,026	-38%
Dar'a	9,158	7,230	-21%
Deir-ez-Zor	111,584	137,019	23%
Hama	9,314	8,675	-7%
Homs	6,036	4,713	-22%
Idleb	128,405	153,306	19%
Lattakia	17,137	5,020	-71%
Quneitra	3,002	2,826	-6%
Rural Damascus	11,981	13,930	16%
Tartous	7,428	7,419	0%
<b>Grand Total</b>	<b>646,245</b>	<b>751,364</b>	<b>16%</b>

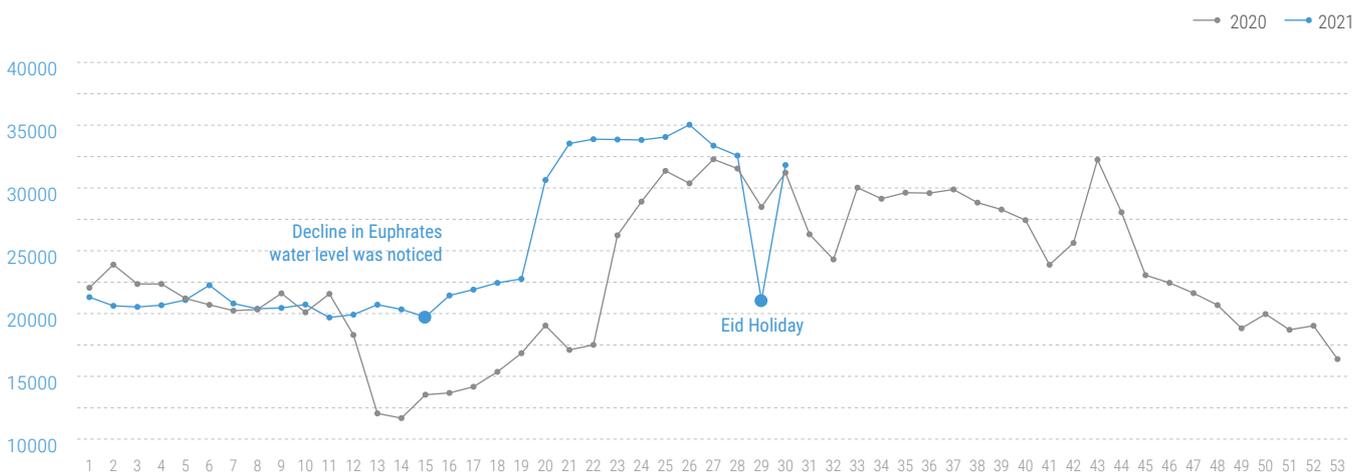
Similarly, the below graph delineates the increase in the epidemiology trend between week 1 -30 in 2021, taking into account that the decrease of Euphrates water level was first reported in week thirteen.

### Critical health needs in the current water crisis context;

- Scale-up the provision of essential health services, including reproductive health, at health facilities.
- Lack of medicines and medical supplies.
- Limited water testing capacity labs in NES.
- The rise in reported COVID-19 cases requiring more focus on protection of health care workers (HCWs).
- Infection, prevention and control (IPC) supplies and protective measures.
- The surveillance system also needs to be strengthened in all of the affected areas that include community based surveillance through trained rapid response teams (RRTs).
- Since malnutrition cases have been on the rise due to the current water crisis, there is a need to ensure provision of pediatric medicines and community-based management of acute malnutrition (CMAM) kits.
- Building the capacity of HCWs on the case management protocols and clinical management of cases including malnutrition.
- HCWs need to be trained on water-borne diseases (WBD) related case management, acute malnutrition and referrals.

## Comparison of the weekly reported cases in 2020 (week 1 -53) and 2021 (week 1 - 30)

in the three response areas: HCT, HLG and NES NGO Forum Coordinated Response



Source: WHO

## Sector-wide Response Priorities

In line with the HRP 2021 health sector objectives and priorities, the health sector will strengthen the following response priorities for the outbreak preparedness and response.

## Sector-wide Response Priorities

PARAMETER	ACTIVITIES	TARGET	COSTING (US\$)			
			HCT	NES	HLG	
1	Prepositioning of medicines and supplies to the health facilities in the affected areas especially the water-borne diseases related medicines	Provide health facilities in hotspot areas with essential medicines, consumables, diarrheal kits for WBD/ AD, particularly oral rehydration solutions, antibiotics and intravenous fluids for the immediate care of the inpatients and outpatients (including services points in camps)	6 hospitals 20 PHC HF's	\$1,431,592	\$600,000	\$300,000
		Establish additional storage capacity of health facilities in affected locations	3 warehouses in NES		\$50,000	
		Procurement and pre-positioning Rapid Diagnostic kits at hubs	100 kits		\$20,000	\$80,000
		Procure and pre-position of pediatric medicines and CMAM kits			\$200,000	
2	Strengthening Surveillance System and ensure community-based follow-up in communities emerging as hot spots	Ensure surveillance and set-up RRT units to support expanded early case detection and timely response for all affected communities	12 RRTs	\$310,000	\$250,000	\$200,000
		Train surveillance team and RRTs on WBD relevant case definitions, investigation, verification and reporting	78 RRTs and surveillance members		\$18,000	\$15,000
		Support dedicated surveillance System IMO for NES	1 IMO		\$10,000	
		Technical staff to support the surveillance system	2 staff	\$77,404		
3	Ensure people access to the life-saving health services in all affected areas through support functionality of health facilities (HF) and expand of mobile health teams	Expand the provision of basic health services, including reproductive health, to 16 HF's in both GoS and SA controlled areas	Basic Services will be expanded in 12 HF's – four months		\$1,800,000	
		Deploy mobile health teams to the affected communities to provide basic services of outbreak response - # of needed MTs	12 MTs will be supports		\$380,000	\$200,000
4	Strengthening and support of Infection Prevention and Control in HF's and community	Ensure availability of PPE for the health workers- procure PPE	# of HF's provided with PPE		\$160,000	\$80,000
		Provide health facilities with cleaning equipment / disinfectants and utensils	# of HF's provided with cleaning		\$100,000	\$50,000
		Support waste management – incinerators- at health facilities	# of HF's provided with WM		\$150,000	\$100,000
5	Community engagement for risk communication, Hygiene Promotion and behavior change	Conduct mass media health education campaigns focused on hygiene practices (hand washing, sanitation, water storage, food handling, personal hygiene and menstrual hygiene management), tailored to vulnerable groups e.g. PLW, PWD, the elderly	2 mass campaigns in four months, (videos by medical professionals and IEC materials in both Arabic and Kurdish)		\$65,000	\$50,000
		Ensure that Community Health Agents/community leaders, Volunteers, and other stakeholders have been trained on how to disseminate RCCE messages properly	300 CHWs/ community leaders		\$140,000	\$100,000
		Develop strategic framework for health related advocacy	N/A	N/A	N/A	N/A

PARAMETER	ACTIVITIES	TARGET	COSTING (US\$)		
			HCT	NES	HLG
6 Laboratory Testing (Expanding Micro-biological surveillance in NES)	Ensure sufficient testing stocks for bio-medical laboratories in particular ensure to have proper stocks of culture media available for laboratory samples transportation.	6 labs to be supported / upgraded to include microbiological investigations	\$510,000	\$162,000	\$80,000
	Personal hygiene and menstrual hygiene management				
	Incentives to cover the laboratory Staff	3 staff		\$68,000	
	Conduct water quality testing in areas with high risk of WBD	10 locations		\$70,000	\$60,000
7 Capacity building of health care workers	Training health workers on case definition, diagnosis and management protocols	120 HCWs	\$120,000	\$85,000	\$70,000
	Train HCWs on screening and clinical Management of acute malnutrition	60 HCWs			
	Training of surveillance officers at governorate and district levels	30 surveillance officers			
	Training session for health partners on assessment methods, reporting and M&E	24 health officers from 12 health partners			
	Ensure that health personnel have been trained in clinical and lab investigation, case management, and preventive measures				
8 Strengthen Coordination include inter-hub	Regular sector meetings including inter-hub meetings	Bi-weekly meetings EWARN/S and WBD data from NES partners			
	Inter-sectoral coordination meetings for coordinated environmental health interventions				
	Information sharing				
	Surveillance team and RRTs at sub-districts meetings/ consultations				
9 Ensure continuously monitoring HFs	Conduct bi-weekly or monthly field monitoring visits	4 field visits		\$25,000	\$20,000

### Advocacy on Longer-term Response

- The water crisis has become a serious public health concern that contributes to significant increase in water-borne diseases and deaths.
- Combined with lack of food accessibility and availability, water shortages put the people in Syria at risk and causes widespread severe acute malnutrition among children under five years with serious complications.
- Water and hygiene are central to the public health response and essential to preventing the spread of infectious diseases, COVID-19 in particular.

### Health Sector Financial Requirements

SECTOR BUDGET	TOTAL REQUIREMENTS (US\$)	AVAILABLE FUNDING (US\$)	FUNDING GAP (US\$)
HCT Sector	\$2,448,996	\$1,108,996*	\$1,340,000
NES Health Working Group	\$4,388,000	\$0	\$4,388,000
HLG Cluster	\$1,435,000	\$0	\$1,435,000
<b>Total</b>	<b>\$8,271,996</b>	<b>\$1,108,996</b>	<b>\$7,163,000</b>

\* \$1,108,996 initially planned to be covered under CERF allocation RE WHO / Syria Acute diarrhea response.

## 2.4 Nutrition

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### Critical Needs

The ongoing water crises has aggravated the already poor nutrition status of the population in north Syria, with special concerns for the needs of children under five years of age and pregnant/lactating women. The situation is visible in the deterioration of maternal and child nutrition status. In July 2021 an NGO in Ar-Raqqa area conducted a simple malnutrition assessment based on Mid Upper Arm Circumference (MUAC) only. The current data available reveals increasing incidence of malnutrition: 13 per cent global acute malnutrition (GAM) and three per cent severe acute malnutrition (SAM). Further, malnutrition children are presenting from across Ar-Raqqa city as well as surrounding neighbourhoods, suggesting that the problem is not a localized event and needs a holistic approach. The alarming rate of severe acute malnutrition reveals a significant burden amongst children under five years old and should be considered as a priority for funding. Noting that there is poor



**6,000**

**Severely** malnourished children targeted

**25,000**

**Moderately** malnourished children targeted



**200,000**

Pregnant and lactating mothers targeted with Infant and Young Child Feeding interventions

monitoring of the Nutrition sector, which requires urgent redress. In northwest Syria, according to the WASH cluster 80 per cent of the communities will be affected, leaving 450,000 children and pregnant and lactating women (PLW) at risk. In June alone, the Nutrition cluster's 4Ws reporting reflected the highest number of malnutrition cases detected since the beginning of 2021, a total of 163 children with SAM referred to inpatient care due to health complications, 697 children with SAM received out-patient care and more than 1,800 children were found suffering from moderate acute malnutrition.

Children under the age of five and pregnant and lactating women are in dire need for nutrition-specific activities and preventive and curative nutrition interventions. Water level decrease, and the increasing use of unsafe water, is leading to increased water-borne diseases and associated rise

in severe acute malnutrition, especially among children less than 24 months and PLW. Moreover, the deterioration of hygiene practices for non-breast-fed children will lead to increased risk of malnutrition among children less than 24 months. The increase in food insecurity across the region, and the rise in household income having to be spent on water trucking, is diverting very limited household funds and will lead to lower quantity and quality of the diet consumed with significant nutritional consequences.

### Sector-wide Response Priorities

Immediate priorities include:

- All children under five years in affected areas to be screened regularly for the early detection of life-threatening acute malnutrition and are referred for accessible treatment:
  - There is a significant gap in inpatient care. A leading hospital (one per district) should serve as stabilization center for complicated SAM with appropriate medical supplies (F75, F100, ReSoMaL, RUTF) and trained staff.
  - Increased capacity for patients needing ambulatory services, ensuring active case finding in community is persistent and Sphere standards are achieved for coverage of therapeutic feeding programmes;
    - Rural settings > 50 per cent*
    - Urban settings > 70 per cent*
    - Camp settings > 90 per cent*
- Consolidated training on wasting management for HCWs based on NES Community Management of Acute Malnutrition (CMAM) context adapted guidelines integrated within the health system.
- Protect, promote and support recommended infant and young child feeding practices in emergencies (IYCF-E) including breastfeeding/complementary feeding. Treatment of acute malnutrition through mobile and fixed delivery modalities. Ensure high quality treatment and therapeutic supplies available (RUTF, RUSF). Strengthening community reach for Infant and Young Child Feeding practices (IYCF) and emphasis on breastfeeding counselling and also on optimal hygiene practices messaging.

- Target children under five years old (CU5) and PLW with blanket distribution of lipid-nutrient supplements (LNS) and high energy biscuits (HEB), taking into consideration COVID-19 mitigation measures.
- Collaboration between Nutrition, Health, WASH, Protection, and FSL sectors on implementing an integrated response that addresses the immediate and underlying causes of acute and chronic malnutrition.

### Advocacy on Longer-term Response

- Focus on nutrition in the first 1000 days of a child's life to save a child's future - preventing long-term consequences for children and communities. Supplementary food assistance for pregnant

and lactating women is a critical activity to respond to this crisis. A reliable supply chain for Supplementary Feeding Programmes (SFP) for PLW together with Infant and Young Child Feeding practices(IYCF) package to focus on the first 1000 days of a child's life cycle will serve to address undernutrition in a holistic manner. The first 1000 days, which include conception until a child's second birthday, offers a unique window of opportunity to prevent potential development and health-related complications that may affect individuals throughout their childhood and adult life.

- Investment in comprehensive upskilling and training of health workforce – keeping the health care workforce updated on good practices plays a key role affecting mortality rates, identification and treatment, and preventing relapse to SAM after discharge.

### Nutrition Sector Financial Requirements

SECTOR BUDGET	TOTAL REQUIREMENTS (US\$)	AVAILABLE FUNDING (US\$)	FUNDING GAP (US\$)
HCT Sector	\$1,900,000*	\$0	\$1,900,000
NES Forum WG	\$1,957,200*	\$0	\$1,957,200
HLG Cluster	\$1,100,000	\$0	\$1,100,000
<b>Total</b>	<b>\$4,957,200</b>	<b>\$0</b>	<b>\$4,957,200</b>

\* Joint requirements and gaps have been established between the HCT Nutrition Sector and NES Nutrition WG, with implementation continuing to be coordinated closely. Requirements/gaps are broken down here to enable approximate indication by response area.

### Malnutrition Rates and Estimated Treatment Supply Requirements in Northeast Syria\*

by District

DISTRICT	Sum of Final Est of total Pop of the district OCHA (Aug 2020)	Average of Total% (0-4)	Est population of Total% (0-4)	Est GAM (10%)	Est SAM (2%)	Expected number of SAM patients enrolled on CMAM per six months	Expected number of SAM patients enrolled on CMAM per year	SAM Treatment RUTF boxes Est per 6 months (1 RUTF box = 150 sachets = 2 patient's Tx)	SAM Treatment RUTF boxes Est per year (1 RUTF box = 150 sachets = 2 patient's Tx)	Est of MAM (8%)	Expected number of MAM patients enrolled on CMAM per 6 months	Expected number of MAM patients enrolled on CMAM per year	"MAM Treatment RUTF boxes Est per 6 months (1 RUTF box = 150 sachets = 4 patient's Tx)	"MAM Treatment RUTF boxes Est per year (1 RUTF box = 150 sachets = 4 patient's Tx)	Total Est of RUTF boxes supply needed for a CMAM running 6 months	Total Est of RUTF boxes supply needed for a CMAM running per year	Supply cost in US\$ for 6 months (according to UNICEF 1 box = 50 US\$)**	Supply cost in US\$ per year (according to UNICEF 1 box = 50 US\$)**
Abu Kamal	137,734	18%	24,714	2,471	494	642.57	1,285	321	643	1,977	2,570	5,141	643	1,285	964	1,928	48,192	96,385
Ain Al Arab	145,561	14%	20,186	2,019	404	524.84	1,050	262	525	1,615	2,099	4,199	525	1,050	787	1,575	39,363	78,725
Al Bab	7,313	18%	1,295	130	26	33.68	67	17	34	104	135	269	34	67	51	101	2,526	5,052
Al Mayadin	51,314	21%	10,820	1,082	216	281.33	563	141	281	866	1,125	2,251	281	563	422	844	21,099	42,199
Al-Hasakeh	536,472	11%	56,528	5,653	1,131	1,469.72	2,939	735	1,470	4,522	5,879	11,758	1,470	2,939	2,205	4,409	110,229	220,458
Al-Malikeyyeh	141,306	8%	11,254	1,125	225	292.61	585	146	293	900	1,170	2,341	293	585	439	878	21,946	43,892
Ar-Raqqa	411,910	17%	69,069	6,907	1,381	1,795.78	3,592	898	1,796	5,525	7,183	14,366	1,796	3,592	2,694	5,387	134,684	269,367
Ath-Thawrah	160,759	13%	20,337	2,034	407	528.75	1,057	264	529	1,627	2,115	4,230	529	1,057	793	1,586	39,656	79,312
Deir-ez-Zor	227,953	12%	27,045	2,705	541	703.17	1,406	352	703	2,164	2,813	5,625	703	1,406	1,055	2,110	52,738	105,476
Jarablus	750	19%	140	14	3	3.63	7	2	4	11	15	29	4	7	5	11	272	545
Menbij	324,906	13%	42,716	4,272	854	1,110.62	2,221	555	1,111	3,417	4,442	8,885	1,111	2,221	1,666	3,332	83,297	166,593
Quamishli	366,582	6%	22,916	2,292	458	595.82	1,192	298	596	1,833	2,383	4,767	596	1,192	894	1,787	44,686	89,372
Ras Al Ain	38,666	9%	3,362	336	67	87.40	175	44	87	269	350	699	87	175	131	262	6,555	13,110
Tell Abiad	27,223	12%	3,287	329	66	85.45	171	43	85	263	342	684	85	171	128	256	6,409	12,817
<b>Grand Total</b>	<b>2,578,448</b>	<b>11%</b>	<b>284,949</b>	<b>31,367</b>	<b>6,273</b>	<b>8,155</b>	<b>16,311</b>	<b>4,078</b>	<b>8,155</b>	<b>25,093</b>	<b>32,621</b>	<b>65,243</b>	<b>8,155</b>	<b>16,311</b>	<b>12,233</b>	<b>24,466</b>	<b>611,652</b>	<b>1,223,304</b>

\* Source: NES NUT WG, September 2021

\*\* this price does not include transportation or storage

## Breakdown of Financial Requirements

by Activity and Response Area

NES NUTRITION WG AND HCT NUTRITION SECTOR				
ACTIVITY	REQUIREMENT	RESPONSE TYPE	TOTAL FUNDING REQUIRED (US\$)	ESTIMATED FUNDING GAP (US\$)
Upskilling package	Refresher trainings for both inpatient and outpatient care every, information management training for monitoring and tools development.	Short / Mid – term (6 months)	\$13,000	\$13,000
Monitoring system	Roving weekly supervision and guidance (Three staff)	Short / Mid – term (6 months)	\$40,000	\$40,000
CMAM supplies for all NES coverage	RUTF treatment for children under five years old	Short / Mid – term (6 months)	\$611,000	\$611,000
15 per cent of SAM will require inpatient care treatment	Complicated SAM treatment supplies	Short / Mid – term (6 months)	Medical items/ hospital: 60,000 \$ Non-medical items/ hospital: 70,000 \$ Total 130,000 \$ x 10 Hospitals: \$1,300,000	\$1,300,000
Supplementary Feeding Program (SFP) for Pregnant and Lactating Women (PLW)	Blanket supercereal supplies for PLW (estimates of PLW around 10%)	Short / Mid – term (6 months)	\$1,470,000	\$1,470,000
Logistics of supplies	Cost of transport, storage and distribution	Short / Mid – term (6 months)	\$700,000	\$700,000
Other supplies Per 60 health facilities covering NES	MUAC tapes, scales height boars	Short / Mid – term (6 months)	\$7,000 60 x 150 = \$9,000 60 x 120 = \$7,200 \$23,200	\$7,000 60 x 150 = \$9,000 60 x 120 = \$7,200 \$23,200
SMART surveys for 2022	Across NES	Short / Mid – term (6 months)	\$80,000	\$80,000
<b>TOTAL</b>			<b>\$3,857,200</b>	<b>\$3,857,200</b>

HLG NUTRITION CLUSTER FINANCIAL REQUIREMENTS				
ACTIVITY	REQUIREMENT	RESPONSE TYPE	TOTAL FUNDING REQUIRED (US\$)	ESTIMATED FUNDING GAP (US\$)
Nutrition supply chain management	Nutrition programme supply chain is effectively managed to sustain "zero stock out" status at all levels of the health/nutrition service.	Short / Mid – term (6 months)	\$88,000	\$88,000
CMAM supplies for all NWS coverage	RUTF treatment for children under 5 years of age	Short / Mid – term (6 months)	\$600,000	\$600,000
Nutrition cluster Information Management	coordination and information management for nutrition cluster	Short / Mid – term (6 months)	6000 X6 = \$36,000	\$36,000
Counselling & awareness on IYCM	Supporting caregivers, including pregnant and lactating women (PLWs) on counselling & awareness on appropriate infant and young child feeding (IYCF) with the help of RRTs	Short / Mid – term (6 months)	12,666 X 6 months = \$76,000	\$76,000
Surveillance			300,000\$	300,000\$
<b>TOTAL</b>			<b>\$1,100,000</b>	<b>\$1,100,000</b>

## 2.5 Protection

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### Critical Needs

As a result of the water crisis, more and more people across northeast Syria are expected to reach critical food insecurity levels, either due to reduced availability of staple food (such as bread), loss of livelihoods or increased expenses (e.g. paying for water trucking and generator fuel). This, in turn, is expected to lead to displacements and an increase in negative coping mechanisms specifically affecting the most vulnerable members of communities.

Women and children are likely to bear the brunt of the crisis, with an increase in forced and early marriage, intimate partner and family violence, sexual exploitation and abuse including to access water, emotional abuse and denial of access to services. The water crisis is expected to strain the capacities of families and communities to protect children, particularly adolescent girls and boys. Children are expected to be at a heightened risk of abuse, exploitation, violence and neglect, child labour including its worst forms, separation from caregivers and the absence of alternative care options. High psychosocial distress among children will reflect the cumulative toll on mental well-being with immediate and if not addressed, lifelong consequences. Therefore, increased support to protection services is required to address growing needs.<sup>52</sup>

The water crisis is also exacerbating already dire hygiene conditions, with a heightened impact on women and girls, especially for what concerns menstrual hygiene management (MHM) and access to clean and safe latrines and bathing sites. In areas that have witnessed hostilities, water and riverbeds may also be contaminated with explosive ordnance, which may lie dormant under water, and resurface as the water level lowers due to the ongoing water crisis. According to the 2021 Humanitarian Needs Overview, 360 communities along the Euphrates River across Aleppo, Deir-ez-Zor and Ar-Raqqa Governorates have reported potential explosive ordnance contamination. Sanitation infrastructure such as water treatment stations, water boosting stations, water towers, wastewater treatment plants etc. may also be contaminated with explosive ordnance. If survey, marking and clearance activities do not take place, contaminated water infrastructure represent a direct protection threat

to those approaching facilities in search of water, unaware of the risks.

The water crisis will likely be linked to a rise in the spread of COVID-19, which will reduce access of people in need to in-person protection services. Restrictions in movement and increased pressure risk triggering an increase in violence against women and children, especially within the household, as well as additional barriers to access GBV services, child protection and other humanitarian services (such as Sexual and Reproductive Health). Addressing the water, sanitation and hygiene needs of populations in vulnerable situations, including those with unequal and inadequate access to water, particularly women and girls, is essential to ensuring success in the struggle against COVID-19.

Women and girls will also be at a heightened risk of Sexual Exploitation and Abuse while accessing humanitarian services during a crisis situation.

Finally, displacement of people will increase pressure on overstretched last resort sites, potentially requiring expansions and establishment of new ones. Such expansions bring additional risks of infringing on housing, land and property rights, as well as settling in sites that have high explosive remnants of war contamination. Services in last resort sites are often limited and expanding services to those sites is needed.

### Sector-wide Response Priorities

The Protection sector and AoRs will focus their efforts on protection mainstreaming in the response to the water crisis. The sector will increase efforts in identifying groups at risks of being left behind. Leave No One Behind entails not only reaching the most excluded populations in the crisis but also addressing violence, rising inequalities, discrimination and factors limiting access to water. This will include support to protection and non-protection partners in streamlining and harmonizing vulnerability criteria and protection mainstreaming standards, as well as training of humanitarian workers and first line responders on protection mainstreaming and GBV risk mitigation, safe and confidential referral and support for Child Protection (CP) and GBV cases and explosive ordnance risk

<sup>52</sup> For instance, a total of 101 communities have been identified by the NES WASH WG as the most at risk in the Triple Water Crisis Response in NES, out of these only 22 communities (21.5 per cent) are currently covered (as per the WoS January to June 4Ws) by any GBV service.

education. The sector will further seek to strengthen referral capacity (including inter-sectoral referrals) through training and access to service mapping. Protection monitoring will continue to be provided to detect increased reliance on negative coping mechanisms and will be expanded into new areas that report displacement (if not already covered). The sector will also support the establishment and provision of prevention of sexual exploitation and abuse (PSEA) support services across the response (PSEA hotlines, complaint mechanisms, PSEA awareness and training).

The Protection sector will also seek to increase its general protection response capacity in response to the increased needs. This will include adding mobile teams providing individual protection assistance, providing civil documents and housing, land and property rights services and psychosocial support for the affected population. Community-led initiatives which focus on social cohesion and stress the inclusion of the most vulnerable, focusing on people with disabilities, vulnerable groups, women, children and the elderly, will be implemented. The reach of awareness-raising sessions will be increased and cover various protection issues, including on prevention of family separation, violence against children, GBV, explosive ordnance risk education, and information on available basic and specialized services, to enhance knowledge and prevent and mitigate protection risks. Housing, land and property due diligence will also be provided for new sites/camps that may be established due to displacement.

The GBV AoR will 1) provide quality and lifesaving GBV response services, including case management and psychosocial support, enhance vulnerable groups' access to these services and reinforce multi-sector referral pathways especially with the Health sector; 2) contribute to increased safe access to hygiene practices by women and girls as well as to menstruation hygiene management (MHM), promote and coordinate distributions of dignity kits and safety items (e.g. COVID-19 kits, flashlight, risk reduction kits, etc), informed by assessments and feedback from beneficiaries (consulting GBV and WASH sectors), disseminate critical messages on MHM and safe access to water and WASH facilities and 3) increase awareness and information-sharing to enhance systems for the prevention of GBV, including sexual exploitation and abuse, through strengthening community protection strategies (safety audits, mainstream GBV in early-warning systems and contingency plans). Finally, the GBV AoR plans to promote GBV risk mitigation into all aspects of the water crisis response with a focus on intersectional linkages (e.g. displacement or disability) and promote a contextualized gender sensitive vulnerability analysis, as well as safe access to humanitarian services for women and girls at risk of GBV.

The Mine Action (MA) AoR will ensure mainstreaming of explosive ordnance awareness messages across all sectors of the response is paramount to ensure adoption of safe behaviors. In parallel, the Mine Action AoR will also strive to include a non-technical survey along with explosive ordnance risk education efforts, in order to gather information on potential contamination. Collection of information is key to prioritize technical survey of suspected contaminated water sources, and ultimately clearance of explosive items to ensure safe access to water.

The Child Protection (CP) AoR will continue to support preventative and response activities targeting most vulnerable children. The proposed activities revolve around four key programmatic areas: (1) strengthening the capacity of frontline workers to address the risk of abuse, exploitation and violence; (2) early identification of children with psychosocial support (PSS) needs and provision of PSS services; (3) specialized child protection services including case management and alternative care arrangement, (4) Strengthen collaboration with other sectors to address child protection concerns including child labour of which are aligned with the Child Protection AoR's plan under the 2021 HRP.

### Advocacy on Longer-term Response

- Advocate with authorities for policies that will progressively realize the right to sufficient, safe, acceptable and physically accessible and affordable water for personal and domestic uses.
- Increased funding for GBV activities in NES to ensure that GBV service provision, including specialized services are kept functional at all times. In particular, increased funding to enable Clinical Management of Rape services for survivors of sexual violence as access to these is very limited and sometimes not available at all in NES, due to the lack of post rape treatment kits and adequate capacity of health workers to provide the service.
- All sectors must ensure GBV risk mitigation across their response. In the absence of adequate GBV risk mitigation the response continues to increase barriers for women and girls to safely access water, latrines and bathing areas.
- Advocate with local authorities to promote safe access for women and girls to information and services relevant to their MHM, as women and girls still face several restrictions in ensuring regular access to menstrual hygiene items. All sectors to promote this information and seek to promote this access through their activities in consultation with GBV AoR. The lack of GBV risk mitigation across the multi-sector response continues to increase barriers for women and girls to safely access water, latrines and bathing areas.
- Promote and coordinate distributions of dignity kits and safety items (COVID-19 kits, soap, flashlight, risk reduction kits, etc.), informed by assessments and feedback from beneficiaries (consulting GBV and WASH sectors).
- Donors to invest in community-based CP interventions to build and strengthen the capacity of individuals and communities. Community-based child protection mechanisms are instrumental in the prevention of, and response to, exploitation, abuse, neglect, harmful practices and violence against children.
- CP AoR will also continue to advocate and improve collaboration with other sectors to address key child protection concerns e.g. child labour with the Education sector.
- Advocate for funding, access, and necessary approvals the support for mine action survey and clearance operations which is key to ensure water sources are safely accessible and to enable safe rehabilitation of damaged water facilities.

## Sector Financial Requirements

\* Note: Syria Hub numbers in gray and NES Hub in white

ACTIVITY	TARGET	REQUIRED FUNDING (US\$)
1. Train humanitarian workers and first line responders on protection and GBV mainstreaming, identification and support for CP and GBV cases, mine risk education and PSEA, including Training of Trainers (ToT)	<b>Syria Hub:</b> General Protection: 200 humanitarian workers trained CP AoR: 120 humanitarian workers trained GBV AoR: 100 humanitarian workers trained MA AoR: 60	General Protection: \$6,000 CP AoR: \$10,000 GBV AoR: \$2,500 MA AoR: \$4,100 Total: \$22,600
	<b>NES Hub:</b> General Protection: 100 humanitarian workers trained	General Protection: \$2,500
2. Organize awareness sessions on different protection issues, including on prevention of family separation, violence against children, GBV, MHM, safe access to water and WASH facilities, explosive ordnance risk education and share information on available basic and specialized services, to enhance knowledge and prevent and mitigate protection risks	<b>Syria Hub:</b> General Protection: 50,000 beneficiaries CP AoR: 12,000 beneficiaries GBV AoR: 3,600 interventions MA AoR: 43,800 beneficiaries	Syria Hub: General Protection: \$100,000 CP AoR: \$150,000 GBV AoR: \$20,000 MA AoR: \$277,000 Total: \$547,000
	<b>NES Hub:</b> GBV AoR: 2,320 interventions MA AoR: 9,000 people	NES Hub: GBV AoR: \$6,380 MA AoR: \$40,000 Total: \$46,380
3. Implement community-led initiatives. The initiatives will stress the inclusion of the most vulnerable, focusing on people with disabilities, vulnerable groups, women, children and the elderly.	General Protection: 45 initiatives	General Protection: \$200,000 USD
4. Provision of Protection, GBV and CP services (case management, coordination and referrals, legal services, supporting community-based structures, PSS, parental care, legal counselling)	CP AoR: 5,200 beneficiaries GBV AoR: 5,750 specialized services provided	CP AoR: \$225,000 USD GBV AoR: \$15,000 USD Total: \$290,000 USD
	<b>NES Hub:</b> GP: 4,840 beneficiaries CP: 9,235 beneficiaries GBV AoR: 9,525 GBV specialized services provided	NES Hub: GP: \$50,800 USD CP: \$56,000 USD GBV AoR: \$24,590 USD Total: \$131,390 USD
5. Distribution of items/material assistance (such as, but not limited to, dignity kits (DK), PLW kits, COVID-19 kits, risk reduction kits, sanitary napkins, material assistance in-kind or cash/ vouchers) based on assessments and feedback from beneficiaries	GBV AoR: 8,000 DKs	GBV AoR: \$180,000 USD
	<b>NES Hub:</b> GBV AoR: 2,200 DK	NES Hub: GBV AoR: \$33,000 USD
6. Conduct regular monitoring of protection and vulnerability risks to identify needs, gaps and negative coping mechanisms	General Protection: 5,000 people	General Protection: \$80,000 USD
	<b>NES Hub:</b> General Protection: 2,500	General Protection: \$40,000 USD
7. Promote safe and inclusive access of women and girls to WGSS or Protection Mobile Units (e.g transportation services)	<b>NES Hub:</b> GBV AoR: 10 per cent of the population in the most affected communities (88,000 individuals)	GBV AoR: \$6,560 USD
8. Strengthen community-based referral pathways and capacity of community focal points to promote access of women and girls to life-saving services	<b>NES Hub:</b> GBV AoR: 10 per cent of the population in the most affected communities (88,000 individuals)	GBV AoR: \$990 USD
9. Increase outreach and services information in the most vulnerable areas (informal settlements, returns areas, camp settings)	GBV AoR 10 per cent of the population in the most affected communities (88,000 individuals)	GBV AoR: \$2,300 USD
<b>Total Syria Hub</b>		General Protection: \$386,000 USD CP AoR: \$385,000 GBV AoR: \$217,500 MA AoR: \$281,100 Total: \$1,269,600
<b>Total NES Hub</b>		GP: \$93,300 CP AoR: \$56,000 GBV AoR: \$73,820 MA AoR: \$40,000 Total: \$263,120

## Protection Sector Financial Requirements

	TOTAL REQUIREMENTS (US\$)	AVAILABLE FUNDING (US\$)	FUNDING GAP (US\$)
<b>HCT Sector</b>	Total: \$1,269,600 General Protection: \$386,000 CP AoR: \$385,000 GBV AoR: \$217,500 MA AoR: \$281,100	Total: \$53,500 General Protection: \$23,005 Child Protection AoR: \$9,630 wGender-Based Violence AoR: \$10,700 Mine Action AoR: \$10,165	Total: \$1,216,100 General Protection: \$362,995 Child Protection AoR: \$375,370 Gender-Based Violence AoR: 206,800 Mine Action AoR: \$270,935
<b>NES Protection Working Group</b>	Total: \$263,120 GP: \$93,300 CP AoR: \$56,000 GBV AoR: \$73,820 MA AoR: \$40,000	Total: \$45,200 GP: \$19,436 CP AoR: \$8,136 GBV AoR: \$9,040 MA AoR: \$8,588	Total: \$217,920 GP: \$73,864 CP AoR: \$47,864 GBV AoR: \$64,780 MA AoR: \$31,412
<b>HLG Cluster</b>	\$0	\$0	\$0
<b>Total</b>	Total: \$1,532,720 GP: \$479,300 CP AoR: \$441,000 GBV AoR: \$291,320 MA AoR: \$321,100	Total: \$98,700 GP: \$42,441 CP AoR: \$17,766 GBV AoR: \$19,740 MA AoR: \$18,753	Total: \$1,434,020 GP: \$436,859 CP AoR: \$423,234 GBV AoR: \$271,580 MA AoR: \$302,347

## 2.6 Water, Sanitation and Hygiene

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### Low Euphrates River water flow

#### Background and Critical needs

The unprecedented low level of the Euphrates River, and its dams, has significantly affected at least a third of over 200 water stations that rely solely on the river water to deliver drinking water to most of the population in Aleppo, Ar-Raqqa and Deir-ez-Zor Governorates. Many pumping stations were not designed for such low water levels and the related poor raw river water quality (with increased turbidity and related microbiological contamination, growing of algae). This has resulted in the decreased capacity of water station production, if not their shut down, and hindered the treatment of water, especially in Deir-ez-Zor. Decreased production of electricity from Tishreen and Tabqa dams, the two main sources of electricity in northeast Syria, has led to restricted pumping hours, further reducing the production of drinkable water. The current crisis has led to increased unregulated private water trucking to cope with the reduced or ceased piped water, which is often distributed to populations untreated and as potentially contaminated. This is diverting household incomes from other expenditures so as to purchase water. Poor water quality supplied either by water stations or tankers is probably one root cause of the high caseload and outbreaks of waterborne diseases and malnutrition that is being recorded in NES since the beginning of 2021.

#### Sector-wide Response Priorities

The WASH sector focuses on increasing and/or restoring the capacity of drinking water systems affected by the low level of the Euphrates River (retrofitting and supporting water stations and water networks,

cleaning canals, improving power supply to water stations, with the provision and maintenance of backup generators, connection to service lines or the promotion of renewable energy use for drinking water systems in collaboration with Early Recovery Sector). Simultaneously, the safety of water being delivered by water stations and private tankers must be ensured. The sector will achieve this by the additional provision of chlorine and aluminium sulphate (for flocculation and settling processes) to the various Water Departments for the water stations, and through support to water trucking filling stations with the chlorination and water quality control.

The sector will also work on the development of a water quality surveillance system that will be extended to health care and education facilities, and ideally as a part of broader water safety planning. The sector does not plan to engage in direct water trucking assistance to local communities. Nevertheless, regular water trucking for informal IDP settlements and camps in Menbij, Ar-Raqqa and Deir-ez-Zor will continue and water will be trucked to schools administered by the Government of Syria. The WASH Sector, in collaboration with the Health Sector, will also work on increasing the availability of safe water for all usage in Health Care Facilities (HCFs), in particular in areas such as Deir-ez-Zor Governorate and Menbij district. Similarly, in collaboration with the Education sector, the WASH sector will work on increasing the availability of safe water for all usage in operational education facilities and promotion of good health and hygiene habits. Finally, the sector will raise the awareness on safe hygiene practices to reduce risk of waterborne diseases, related undernutrition and the spread of COVID-19. The scope of work planned by the WASH sector is presented in the table hereunder:

ACTIVITIES	HCT SECTOR	NES WASH WORKING GROUP	HLG CLUSTER	TOTAL
Water Stations targeted for retrofitting/rehabilitation	98	86	1	185
Rehabilitation and maintenance of water tanker filling stations	6	59	0	65
Provision of chlorine to water stations and/or to tanking filling stations	78	69	0	147
Health Centers (HC) and Education Facilities (EF) where safe water provision will be improved	60 HC & 484 EF (see details in education section)	50 HC & 50 EF	0	110 HC & 534 HF
Emergency water trucking	227,000 beneficiaries	200,000 beneficiaries	0	427,000 beneficiaries

Notes:

(a) To ensure quality of drinking water, the WASH sector has prioritized support for drinking water quality surveillance and monitoring activities, targeting affected communities, schools and healthcare facilities.

(b) In close synergy with the Health Sector (see under Health Sector Priority activity # 5), the WASH Sector will support hygiene awareness activities and campaigns (communities, schools, education centres and healthcare facilities).

### Advocacy on Longer-term Response

Some of the critical WASH infrastructure, in particular the dams and main water systems or non-existing wastewater treatment plants (e.g. in major cities like Ar-Raqqa or Deir-ez-Zor) require technical expertise to intervene, that goes beyond the humanitarian mandate framed by the HRP and beyond the capacity of the WASH Sector partners. Stabilization/development actors are required to intervene. The current crisis underlines the critical need to develop a longer-term development approach to WASH infrastructure including water systems extension to underserved/new neighbourhoods, mainstreaming better water resource management, developing masterplans, etc. Reliable river water flow monitoring system shall be implemented along the Euphrates River and series of surface water studies conducted for the Euphrates River basin. The WASH Sector will continue supporting advocacy efforts to increase and maintain adequate water flow in the Euphrates River, equitable and efficient water resources use, and enhanced management.

#### *Drought-like conditions*

### Background and Critical needs

The drought has an adverse impact on the replenishment of groundwater resources, which is particularly concerning in the northwest of Al-Hasakeh Governorate and in Al-Bab area. Groundwater is the main source of fresh water in the area, which has undergone uncontrolled usage through over extraction for domestic and irrigation purposes for years. Monitoring of groundwater resources is not taking place in northeast Syria and local authorities lack capacity to develop sound management of depleting water resources. The absence of rainfall in the winter months 2020/21 has a concrete impact on the availability of alternative/complementary water sources to the Alouk water supply system (see below). The Khabour River project and Himme boreholes remaining non-operational due to absence of surface water in the river and insufficient replenishment of groundwater resources.

### Sector-wide Response Priorities

One sector partner is starting the implementation of a hydrogeological study in part of Al-Hasakeh Governorate that will seek to put in place a monitoring system for groundwater management. This will ideally support decision making of the Water and Agricultural Department, and humanitarian and stabilization actors in terms of groundwater supply potential. A similar approach should be extended in other

governorates affected by the drought. The WASH sector will also work on deepening the synergies with ERL, FSA, Protection, Health and Education sectors.

### Advocacy on Longer-term Response

The WASH sector, in collaboration with other actors, will support authorities in the development of integrated water resources management, a cross-sectoral policy approach. The WASH sector shall support investments in innovative data collection and information exchange platforms.

#### *Alouk water station and impact on people*

### Background and Critical needs

Since late 2019, the Alouk water station has experienced significant drops in output due to operational/technical and access challenges, and has often been totally shut down for weeks in a row, most recently in June, July and August 2021, at the peak of the hot season. To date, this station is the only sustainable source of drinking water for around 500,000 people in Al-Hasakeh city and surrounding areas, including almost 100,000 IDPs in Al Hol, Washokani, Serekaniye and Areesha camps. No alternative to water trucking in time of crisis is available to ensure those people have access to water. Unregulated private water trucking and private boreholes used by population pose high public health risks and has a huge impact on households' budget. Some of alternative technical solutions implemented to supplement the Alouk water station (i.e. Himme boreholes and dam, Khabour River project) have failed due to the drought conditions experienced this year.

### Sector-wide Response Priorities

Until a regular and uninterrupted operation of the Alouk water station is ensured, the WASH sector must remain prepared to undertake emergency water trucking operations in the event of the station shut down. Nonetheless, water trucking has an impact on very limited ground water resources within the Al-Hasakeh area and increases health risks to the population, as households are increasing their reliance on unregulated private water trucking and private boreholes for domestic use (brackish water). Therefore, the WASH Sector will support water trucking filling stations with the chlorination and water quality control, and in the longer term, as well as in collaboration with the Water Departments, aims to better regulate the water trucking market. In addition, the WASH Sector will equip a further 17 boreholes with reverse osmosis, in and around Al-Hasakeh city, to cover a small fraction of drinking water needs. When safe access is granted, the WASH Sector will continue to support Alouk water station, as it requires constant maintenance/rehabilitation by qualified and well-trained staff.

### Advocacy on Longer-term Response

The Sur canal rehabilitation project including Azaziyeh water station in Al-Hasakeh city is carried out by a stabilization actor and should be completed in a few months. This project only has the potential to cover 20 per cent of the needs of the city and surroundings in

a best-case scenario. Even with all alternative technical solutions implemented, there will still be a deficit of 60 per cent to secure a minimum of 50 liters/person/day for populations of Alouk. Therefore, parties must agree to grant sustainable access for the technical personnel in the Department of Water Resources and for technical elements of the humanitarian and stabilization community to support Alouk's functionality. The WASH Sector is supporting the ongoing Humanitarian Advocacy efforts on establishing a safe, unhindered humanitarian corridor to the Alouk water station, covering both drinking water supply and electricity infrastructure. Water is at the centre of the COVID-19 response and preventing civilians from having safe access to water during these times of pandemic will lead to serious humanitarian consequences, and endanger the lives of citizens of neighbouring countries. The provision of basic services in one location shall be de-linked from such provision in another location. All people have a right to access basic services, regardless of issues in other locations.

### Al-Bab water stations and impact on people

#### Background and Critical needs

The access to water in Al Bab sub-district and its surrounding areas has been disrupted several times in the last five years due to damage sustained from conflict, technical failures, and changes in territorial control. The area used to be supplied with water from the Al-Khafsa water station, located on the Euphrates River, and through the Ein El-Bayda water pumping station, nevertheless since early 2017 the entire population in the area including IDPs rely on purchasing water extracted from wells in surrounding villages, private or public cisterns, and water trucking services. Water supply for agricultural purposes is extremely challenging, greatly impacting the main source of income and livelihood in the area. The water accessed has been found to be insufficient and unsafe for drinking, resulting in high levels of water-borne disease and making the area a potential COVID-19 hotspot.

#### Sector-wide Response Priorities

For the Al-Bab water system, so far, 20 wells and 18 water pumping stations have been connected to the network with a capacity to supply 40 liters of water per capita daily, nevertheless due to low rainfall in 2020/21 season, and excessive extracting of water for agriculture purposes, the aquifer level has dropped, and has affected the yield of

potable water wells and expanding water extraction times. The cost of maintaining the system in operation and the associated maintenance, requires continued support. Efforts are made to connect the existing water stations to the Turkish electrical grid while also introducing solar energy (hybrid approach) to reduce the high operating costs. A tariff system has been introduced, nevertheless the revenue is limited, which is narrowing the ability of local authorities to fully support the system's operation.

#### Advocacy on Longer-term Response

It is necessary to depoliticize the provision of basic services across Syria, because politicisation can lead to severe violations of International Humanitarian Law and trigger additional human suffering. Parties must work to restore water supply from GoS-controlled Al-Khafsa and Ein El-Bayda water pumping stations to Al-Bab area. Alternatively, a major project to bring water from the Euphrates River to Al-Bab area is likely to cost up to US\$25 million and would take around two years to complete. Humanitarian donors indicate a lack of willingness to support such initiative. In the Al-Bab area, as similarly found in other locations where ground water recharge has been greatly affected, should be prioritized for comprehensive hydrogeological studies.

#### WASH Sector Financial Requirements

(including WASH in Education facilities)

	TOTAL REQUIREMENTS (US\$)	AVAILABLE FUNDING (US\$)	FUNDING GAP (US\$)	TARGET (ESTIMATION)
HCT Sector	\$13,977,000	\$2,875,000	\$11,102,000	\$2,300,000
NES WASH Working Group	\$6,630,000	\$1,201,000	\$5,429,000	\$960,000
HLG Cluster	\$2,190,000	\$0	\$2,190,000	\$180,000
<b>Total</b>	<b>\$22,797,000</b>	<b>\$4,076,000</b>	<b>\$18,721,000</b>	<b>\$3,440,000</b>

# Education: Water, Sanitation and Hygiene interventions in Education facilities

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## Critical Needs

It is estimated that there are nearly 1.5 million school aged children in northeast Syria.<sup>53</sup> The vast majority of students in NES are educated in formal schools that were closed for summer holidays when the water crisis emerged.<sup>54</sup> Due to long-standing difficulties obtaining water, water trucking has been used by schools to enable students to access water. This can be costly for schools. The available data indicates that the 2021-2022 school year will start in September with many schools without water and without WASH facilities. The Education Sector continues to collect information on the crisis’s impact on education centres in camps, and is in discussions with education authorities on how the water crisis related needs can be incorporated into school reopening plans.<sup>55</sup> Once schools resume in September the Education Sector will be able to gain a better sense of the scope of the crisis’s impact on schools.

The water crisis comes on top of systemically poor WASH conditions in NES schools. The table below highlights that before the water crisis many children attended schools that did not have toilets and/or handwashing facilities and that many of the existing facilities did

not have water. Interviewed caregivers reported high rates of child complaints about WASH conditions in NES schools.<sup>56</sup>

Areas of Aleppo that fall under NES stand out with more than four out of five households with children in school reporting problems with their schools WASH facilities, the vast majority citing no toilets in their schools and four out of six household reporting no hand washing facilities in the schools that children attend. In over half of the households’ children cited that the existing facilities do not have water. In Al-Hasakeh there are less complaints about the absence of toilets but, nearly a third of households cited complaints about no handwashing facilities. Despite the slightly higher availability of toilets, access to water remains a key issue with more than half citing an absence of water for existing facilities. Around one in five households’ children in Ar-Raqqa reported complaints about WASH in their schools citing no toilets and/or no handwashing facilities as a complaint. Although only 15 per cent of households cited a lack of water in facilities, this may be due to the general lack of availability of facilities. In Deir-ez-Zor over one out of five households had children citing no toilets in their schools and nearly two in five citing no handwashing facilities. The children in two out of six households reported that

AREA	% Households reporting school wash facility complaints by household children	Proportion of complaints reporting no functioning toilets	Proportion of complaints reporting no functioning handwashing facilities	Approx. % Of households with children reporting no water to flush toilets or/and no water to wash hands
Al-Hasakeh	78%	11%	33%	56%
Ar-Raqqa	64%	27%	20%	15%
Deir-ez-Zor	67%	22%	36%	30%
Aleppo (NES areas only)	89%	83%	67%	53%
<b>TOTAL</b>	<b>77%</b>	<b>34%</b>	<b>44%</b>	<b>42%</b>

<sup>53</sup> UN-OCHA July 2021 population data

<sup>54</sup> 2021 HNO; The sector considers school formal if the local education authority identifies it as formal

<sup>55</sup> Education services in NES fall under three defacto education authorities, the Autonomous Administration of North East Syria, the Government of Syria and the Government of Turkey.

<sup>56</sup> HNAP WASH in Schools data 2021; rates may be under reported in Deir-ez-Zor and are being looked into.

the existing facilities do not have water. Given the limited abilities of education authorities and aid actors to address these needs before the water crisis, it is reasonable to assume that without support the water crisis will make these complaints even more prevalent.

### Sector-wide Response Priorities

The response falls under the WASH sector through a collaborative approach with the Education Sector, which will ensure that the response benefits from WASH and Education expertise.<sup>57</sup> It is important to note that the water crisis's effect on the availability of water in education facilities is compounded by insufficient or no WASH facilities and poor hygiene practices that increase the threat of coronavirus and other communicable diseases.<sup>58</sup> Multi-pronged WASH support will focus on reducing the threat of diseases by improving the availability of safe water in education facilities for drinking and hygiene purposes, improving the functionality of WASH facilities, enabling a hygienic learning environment and promoting and enabling improved student health and hygiene practices. Together this will contribute to making education facilities safer and more conducive for learning.

The response addresses needs in education facilities that fall under different de facto education authorities. The specific intervention that an education facility benefits from will be determined by data that captures the WASH related needs and capacities of education facilities.

The HCT coordinated response centred in Damascus Syria will provide a package of support that may include minor maintenance including cleaning water tanks and replacing water taps, water trucking and age appropriate hygiene promotion. The quality of tankered water will be assured by the WASH Sector at the source. Depending on what is most appropriate for any given areas the quality of water used in the schools will be assured by the Education Sector, SARC and/or Municipality Department. There are nearly 200,000 school aged children in Government of Syria (GoS) areas of NES.<sup>59</sup> The first phase of the response targets 485 schools.

The NES-Forum coordinated response centred in Derek, Syria will provide a package of support that may include repair of water supply infrastructure, connection to functional water sources, water treatment, cleaning and disinfection of school compound, latrines repair and rehabilitation, age-appropriate hygiene promotion complemented with the provision of hygiene kits and supervision and monitoring of water quality and WASH facilities. The quality of piped and tankered water and the quality of the water used in education facilities will be assured by the WASH Working Group. There are over 1.2 million school aged children in Autonomous Administration of North and East Syria (AANES) area of NES.<sup>60</sup> The first phase of the response targets 50 schools and education centres in communities and in camps.

The HLG coordinated response centred in Gaziantep, Turkey will

<sup>57</sup> The intervention may be lead of WASH and or Education sector members depending on the activities carried out, location targeted and other factors.

<sup>58</sup> This is of particular importance in the colder months when windows closed (or plastic sheeting sealed) in an effort to keep classrooms warm. Additionally, there is increasing information on the transmission pathways from schools into the communities that schools are located in accelerating the spread of coronavirus and other communicable diseases.

<sup>59</sup> OCHA population data, 2021

<sup>60</sup> Ibid

<sup>61</sup> Ibid

provide a package of support that may include repair of water supply infrastructure, connection to functional water source, water treatment and disinfection of school compound, latrine repair and rehabilitation, waste management, age appropriate hygiene promotion complemented by the provision of hygiene kits and supervision and monitoring of water quality and WASH conditions. Based on the outcome of ongoing processes the WASH and education sectors will agree on that most appropriate way to ensure that the water used in education facilities is safe. There are nearly 77,000 school aged children in Ras Al-Ain-Tell Abiad area.<sup>61</sup> The first phase of this response targets 25 schools.

Across the response, prioritization will be based on the severity of needs, framed by access and be done in discussion with local education authorities. Efforts will be made to coordinate the NES Forum coordinated response with stabilization actors. The WASH and Education sectors will work collaboratively throughout planning, response and monitoring processes.

### Advocacy on Longer-term Response

Investment in school infrastructure enables the education system to be more resilient to shocks such as drought-like conditions. Investments in WASH in schools reduces the threat of coronavirus and other communicable diseases. In parallel to this immediate response broader investment in school facilities is needed so that children who are able to access available schools are able to do so in a safe and conducive learning environment. Children should learn in facilities with intact roofs, walls, floors, windows and doors, toilets and sinks. School infrastructure and WASH facilities should be established, expanded, repaired and maintained; and hygiene related consumables made available and school-based promotion of good health and hygiene habits carried out.

Stabilization actors play a critical role in improving school infrastructure in AANES areas of NES. The sector encourages these actors to continue and expand this important work so that more children are able to learn in safer learning environments.

The humanitarian situation in Ras Al-Ain and Tell Abiad needs to be better understood by the international community. Efforts need to be expanded to see how, through a Whole of Syria (WOS) approach, these areas can be better served and advocacy should be done with donors to increase their support to people in these areas. Increased efforts are needed to improve the ability of the humanitarian response to meet education and other needs in NES areas of Aleppo Governorate.

The water crisis has exacerbated already acute economic stress. This stress makes it increasingly difficult for families to prioritize education. The sector encourages donors to consider education in livelihoods related cash and voucher programming and expand investments in cash and vouchers for education in emergencies.

The first phase of the NES-Forum and HLG coordinated responses

aims to reach a small fraction of the needs. This is based on a historical trend of insufficient funding to adequately invest (scope and coverage) in improving education infrastructure in AANES areas and in Rais al Khan and Tell Abiad. The first phase of the response is planned with the expectation is that additional funding will enable a subsequent phase with increased targets.

### Financial Requirements for WASH interventions in Education Facilities

The response targets 219,500 school children in 559 schools and education centers for four months. The costing is through to December 2021 with the expectation that 2022 costs will be included in the 2022 HRP and that if donors provide water-crisis related support it will run through the academic year that ends in May 2022. Water treatment conducted at water sources is not captured in the budget below.<sup>62</sup>

HUB	ACTIVITY	DURATION	UNIT	# UNITS	TOTAL COST	FUNDING AVAILABLE	FUNDING GAP
HCT Sector	Increase school level water storage capacity of potable quality through improvements to school water infrastructure and school level water treatment	4-months	School	484	\$452,825	\$-	\$452,825
NES Forum Working Group				50	\$622,500	\$-	\$622,500
HLG Cluster				25	\$62,500	\$-	\$62,500
HCT Sector	Provision of potable water to schools (5lt/p/d, water trucking)	4-months	Students & school personnel	197,000	\$204,500	\$-	\$204,500
HCT Sector	Age appropriate health and hygiene promotion in schools	4-months	School	484	\$45,000	\$-	\$45,000
NES Forum Working Group	Health and hygiene kits complemented by age appropriate health and hygiene promotion in schools and/or education centers	4-months	School	50	\$150,000	\$-	\$150,000
HLG Cluster				25	\$127,500	\$-	\$127,500
			<b>TOTAL</b>			<b>\$0</b>	<b>\$1,664,825</b>

62 The cost of school based monitoring by members of the Education Working Group is integrated into the cost of the NES Forum coordinated response. The cost of monitoring the quality of water in 413 schools is integrated into the cost of the HCT Sector's response.

**WATER CRISIS IN NORTHERN  
AND NORTHEAST SYRIA**

Immediate Response and  
Funding Requirements