

ADAPTATION FUND BOARD SECRETARIAT TECHNICAL REVIEW OF PROJECT/PROGRAMME PROPOSAL

PROJECT/PROGRAMME CATEGORY: Pre-Concept for a Regional Project

Countries/Region: Asia: Jordan, Lebanon

Project Title: Increasing the resilience of displaced persons (DPs) to climate change-related water challenges in urban host settlements

Thematic focal area: Disaster risk reduction and early warning systems

Implementing Entity: United Nations Human Settlements Programme

Executing Entities: Lebanon: Ministry of Environment; Ministry of Energy and Water; Ministry of Social affairs; Line departments in Zahle Jordan: Ministry of Environment, Ministry of Water and Irrigation; Ministry of Planning and International Cooperation; Line departments in Irbid and Mafraq

AF Project ID: AP/MIE/Urban/2018/PPC/1

IE Project ID:

Reviewer and contact person: **Saliha Dobardzic** IE Contact Person(s): Requested Financing from Adaptation Fund (US Dollars): **14,000,000** Co-reviewer(s): **Asha Bobb-Semple**

Review Criteria	Questions	Comments	UN-Habitat response
Country Eligibility	 Are all of the participating countries party to the Kyoto Protocol? 	Yes, Jordan and Lebanon are party to the Kyoto Protocol.	
	2. Are all of the participating countries developing countries particularly vulnerable to the adverse effects of climate change?	Yes, Jordan and Lebanon are developing countries. The two countries are located in arid regions and are particularly vulnerable to rising temperatures, declining rainfall, frequent and long-term droughts. As a result, the region has significant challenges with water scarcity.	
Project Eligibility	 Have the designated government authorities for the Adaptation Fund from each of the participating countries endorsed the project/programme? 	Yes, endorsement letters are enclosed.	

2.	Has the pre-concept provided necessary information on the problem the proposed project/programme is aiming to solve, including both the regional and the country perspective?	 Not fully. CAR 1: Additional details should be provided on the climate change vulnerabilities and impacts faced by the region, both countries and the target cities in particular. A summary of the trends and predictions related to the rising temperatures, declining rainfall, frequent and long-term droughts as well as details on this date in relation to the populations affected in the target cities would provide an idea of the scale of the problem. The population size of each city should also be provided. CAR 2: This section should refocus on the problems associated with vulnerabilities and adaptation challenges being faced in this particular urban setting, and how this impacts the population in general as well as the parallel challenge of a growing displaced persons population and their unique vulnerabilities to climate change. In general, the vulnerabilities and climate change adaptation challenges in general are not presented strongly. Please elaborate and develop in more depth. CR 1: The pre-concept has not presented a clear project objective. Please clarify. 	CAR 1:Data has been added on regional, country and target area specific climatic changes impacts, future projections and vulnerabilities in the "Problem" section under "Project / Programme Background and Context". Numbers about the populations affected in the target citeis has also been added CAR 2: Inputs have been made on problems associated with specific vulnerabilities and adaptation challenges to climate in the specific urban settings, which are related to water challenges facing Jordan and Lebanon and specifically the vulnerable group of DPs. In short, droughts result in water scarcity, especially in rapidly urbanizing small cities where these pressure on service delivering is extremely high due to high influx of DPs and lacking municipal financial resources and capacities. DPs are extremely vulnerable to droughts / water scarcity issues because of the high costs associated with acces to clean water (up to 25 percent of their income). Therefore, affordable access to clean water is required. The inputs are made in the "Needs" section under "Project / Programme Background and Context". The target cities were selected because of a combination of existing and projected climate change-related water challenges, high pressure on water resources due to high influx of DPs and lacking resources and capacities to address these climate change-related water issues and specific needs of DPs, which includes access to affordbale water (which is the justification
			affordbale water (which is the justification for the funding request).

 Have the project/programme 	Not fully.	CR 1: An overall objective has been inserted in the project proposal document. It entails: 'Increasing the resilience and adaptive capacities of displaced persons (DPs) to climate change-related water challenges in urban host settlements.' This will indirectly increase the resilience of hosting communities where the project interventions will take place. CR 2: Some clarifications were made in the
objectives, components and financing been clearly explained?	 CR 2: Please provide additional details on each component. In addition, specific comments are below: i) Component 2- please provide additional details on the platforms 	 project components table: i) Component 2 on citizen engagement and livelihoods support targets increased adaptive capacity and resilience and reduced urban specific vulnerabilities of especially DPs to climate change. The platform will be open to everyone and
	and the skill building that would take place. Are the platforms going to specifically focus on adaption actions related to water, or broadly on adaptation and resilience at the urban level? How will the most vulnerable populations have access to this platform? In addition, adaption, reduction of vulnerabilities and resilience are not mentioned as an objective in this component. Please explain.	mechanisms will be put in place for equall access and benefits of different groups (DPs, host community members, women, youth, etc.) and to express needs and concerns and to plan interventions. Additional to online platforms and mobile phone applications (if possible), the platform will be a physical place where both DPs and host community members are welcome and exchange ideas and concerns. The focus of the platforms will be on resilience building in an urban context with a focus on water challenges.
	 Please clarify if all activities will be carried out in both countries and what portion of the funding is estimated to be needed in each country. We note that in Lebanon 1 	ii) The 4 components of the project will target all of the Syrian DPs in Zahle and its surrounding 3 municipalities (73,168) and 25% of the total Syrian DPs in Irbid and Mafraq (73,168) as direct beneficiaries. The indirect beneficiaries

	city is targeted and in Jordan 2 cities are targeted. iii) Please provide an estimate of the target population size for each component would also be useful.	are the hosting communities in the targeted areas who will benefit indirectly from the intervention in those cities. Since the number of DPs targeted will be the same, then the amount of funding requested is equal.
	 iv) There is no mention on the status of availability of climate data. Is there sufficient data on climate impacts, drought assessments, future water availability that would inform the plans to be developed in Components 1 and 4? Are there any plans to strengthen climate information services? 	 iii) Populations of the target cities and their Syrian DPs was provided in "Target Groups" under "Project/Programme Background and Context". iv) Current climate data, drought assessments and projections are available for both countries (see CAR 1 response). The project will address city level data gaps as needed. Inputs have been made under "Project components and the regional and innovative approach".
 4. Has the project/programme been justified in terms of how: it supports concrete adaptation actions? it builds added value through the regional approach? it promotes new and innovative solutions to climate change adaptation? it is cost-effective? it is consistent with applicable strategies and plans? it incorporates learning and knowledge management? 	actions, please see comments under questions 2 & 3. The project has the potential to build added value through a regional approach which will allow for sharing of lessons among countries with similar contexts. It also provides an opportunity to inform other countries within the region who are a part of the 3RP framework.	CR 3: Under component 1, the regional emergency action plan for urban drought management is innovative in a way that it assesses adaptation needs and provides adaptation options to water scarcity both at the regional and specificially for urban areas, taking into account changes in climate change and water needs in cities due to influx of DPs. The urban land use strategies for target cities would be innovative decision-making tools for municipal governments (but also national government) to plan cities for future climate change impacts and influx of people in an integrated manner (that allows for coordinated investment in infrastructure and services. Under component 2, initiating community-level platforms for social exchange is an innovative way of establishing social

		Yes, the project provides a brief explanation of the role of each partner agency. There is much	countries. This will be elaborated in the concept note phase. The cost to provide water per person in a sustainable way is estimated around 50USD. Under component 4, the integration between the regional DPs and climate change management and "contiuous" monitoring approach for (type 2) cities and 3RP programming is innovative and provides synergy between climate and DPs action. CR 4: Population size and allocation of funds justification have been entered (see CR 2 (ii)). A clarification has been made in the "Sustainability of the project" regarding continuous learning and producing guidelines on maintaining water harvesting and water reuse equipments. CR 5: With support from the Regional Office for Arab States (ROAS), UN-
organ	nizations would be	less information provided on coordination of the project.	Habitat country offices in Jordan and Lebanon will facilitate the coordination

	regional project/programme at the regional and national/sub-national level, and how coordination would be arranged? Does it explain how national institutions, and when possible, national implementing entities (NIEs) would be involved as partners in the project?	CR 5: Please provide information on the coordination of the project.	between the government entities. There will be coordination between municipal authorities in both countries on technical issues (e.g. spatial planning) and communication of lessons learned during implementation. The two countries are already under a number of common frameworks by the League of Arab States such as the Arab Strategy for Water Security and the Arab Strategy for Housing and Sustainable Urban Development 2030. On DPs specifically, Jordan and Lebanon are already cooperating under the 3RP framework. This ensures that the coordination of the project will be continuous, efficient and sustainable.
Resource Availability	 Is the requested project / programme funding within the funding windows of the pilot programme for regional projects/programmes? 	Yes	
	 Are the administrative costs (Implementing Entity Management Fee and Project/ Programme Execution Costs) at or below 20 per cent of the total project/programme budget? 	Yes	
Eligibility of IE	 Is the project/programme submitted through an eligible Implementing Entity that has been accredited by the Board? 	Yes	

Technical Summary	 The proposed project will attempt to address the challenges of displacement in cities in Jordan and Lebanon, stemming from the Syrian crisis and climate change in Mashreq (and MENA) region. The project will target cities under widespread stress from displaced persons – which significantly impacted the overall absorption capacity, including urban systems and services such as water supply (exacerbated by climate change), sanitation, education, and health services. Lebanon: Zahle and surrounding 3-4 municipalities with focus on poorest / informal communities with large number of DPs Jordan: Irbid and Mafraq with focus on poorest / informal communities with large number of DPs
	While the proposed intervention and the problem it intends to address are relevant, the link to climate change is not well elaborated. The purpose of the project, as a set of concrete adaptation actions, is not clear and the justification for Adaptation Fund support is not yet provided. A number of Corrective Action Requests (CAR) and Clarification Requests (CR) have been provided.
Date:	8/25/2018



PRE-CONCEPT FOR A REGIONAL PROJECT/PROGRAMME

PART I: PROJECT/PROGRAMME INFORMATION

Title of Project/Programme:

Countries: Thematic Focal Area¹: Type of Implementing Entity: Implementing Entity: Executing Entities: Increasing the resilience of displaced persons (DPs) to climate change-related water challenges in urban host settlements Lebanon, Jordan Disaster risk reduction and early warning systems Multilateral United Nations Human Settlements Programme **Lebanon**: Ministry of Environment; Ministry of Energy and Water; Ministry of Social affairs; Line departments in Zahle **Jordan**: Ministry of Environment, Ministry of Water and Irrigation; Ministry of Planning and International Cooperation; Line departments in Irbid and Mafraq USD 14 million

Amount of Financing Requested:

Project / Programme Background and Context

Problem: Most urban settlements in the Mashreq (and MENA) region suffer from water challenges – which are compounded by a combination of rapid influx of DPs and climate change impacts.

The Mashreq region is already experiencing the impacts of climate change, with temperatures expected to continue to rise and rainfall to decline, leading to more frequent and longer droughts.² There are consistent and significant warming trends across the Arab region as a whole with clear increased frequencies of warm days and warm nights, higher extreme temperature values, fewer cold days and nights and shorter cold spells since the early 1970s.³

The general change in temperature in the Arab region for RCP 4.5 shows an increase of 1.2 °C–1.9 °C at mid-century and 1.5 °C– 2.3 °C by end-century. For RCP 8.5, temperatures increase to 1.7 °C– 2.6 °C for mid-century and 3.2 °C–4.8 °C towards end-century. Future precipitation projections show that changes vary considerably across the Arab region with some areas showing increasing trends such as as the south-eastern Arabian Peninsula and some parts of the Sahel while other areas show declining trends such as the Atlas Mountains in the west and upper Euphrates and Tigris rivers in the east.⁶ According to the World Bank,⁶ the Arab region, including Jordan and Lebanon, suffer from drougts / 'chronic water scarcity. Vulnerability to climate change impacts on water resources for both mid- and end-century projections is nearly equally divided between areas of moderate and high vulnerability.⁷

<u>Jordan and Lebanon exihibit Mediterranean climate of warm, dry summers and rainy, cool winters⁸.</u> Jordan has experienced a change in temperature. Mean annual temperatures in Amman have

¹ Thematic areas are: Food security; Disaster risk reduction and early warning systems; Transboundary water management; Innovation in adaptation finance.

- ² http://geoagro.icarda.org/en/cms/category/maps/4/regional
 ³ UN-ESCWA et al. (2017) Arab Climate Change Assessment Report (RICCAR initiative)
 ⁶ UN-ESCWA et al. (2017) Arab Climate Change Assessment Report (RICCAR initiative)
 ⁶ World Bank (2012) Adaptation to a Changing Climate in the Arab Countries
 ⁷ UN-ESCWA et al. (2017) Arab Climate Change Assessment Report (RICCAR initiative)
- 7 UN-ESCWA et al. (2017) Arab Climate Change Assessment Report (RICCAR initiative) ⁸ Idem

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increased by more than 1.5 degrees over the past half century. Precipitation has already decreased in the region and also in Jordan itself (by more than 50 mm per year over the past half century in Amman), and the number of heat extremes and days with extremely high temperatures has increased. Climate change vulnerability of Jordan and impacts climate change are expected to affect sustainable development, economic growth and society⁹.

Based on outcomes from Jordan's Third National Communication Report to UNFCCC (2014), serious vulnerability and impacts results are expected based on modeling and projections analyses. The climate models give a more consistent trend towards a drier climate. Predicted trends indicated that the annual precipitation tends to decrease significantly with time. The report shows that the mean and maximum temperatures over the full country of Jordan will be 2-4 degrees higher, precipitation will be 15-20 percent lower and potential evapotranspiration about 150 mm higher by the end of the century. According to the report, in 2070-2100 the cumulated precipitation could decrease by 15 percent. The decrease would be more marked in the western part of the country. Simultaneously, the mean, maximum and minimum air temperature tends to increase significantly by 0.02, 0.01, and 0.03 °C/year, respectively. On the other hand, the relative humidity tends to increase significantly by an average of 0.08 percent/year. In addition, the dynamic projections predicted more extremely likely heat waves and likely drought events, dry days, and potential evaporation among other potential impacts.

In Jordan, water demand distinctly exceeds supply as water availability per capita has declined significantly, from 3,600 m³ per capita in 1946 to only 145 m³ in 2008.¹⁰ This will make some areas unliveable, reduce agriculture lands and put more pressure on already scarce water resources, potentially increasing displacement, the continuous risk of social unrest and conflicts and migration to host settlements already struggling to provide basic services. Water resources in Jordan are vulnerable to climate change. Previous studies, strategic documents (i.e. Jordan's SNC (2009) and National Climate Change Policy (2013)) have identified scarcity of water resources as one of the major barrier facing sustainable development in Jordan; a situation that will be magnified by climate change.11 The sector will be most heavily affected by climate change impacts will impose further stress on national water resources. Water-related impacts include reduced total water availability, less reliable seasonal patterns, increasing intensity of droughts during which reservoirs are not refilled, groundwater is not recharged and rain fed agriculture suffers damages, increasing intensity of flood events during which water and other infrastructure experiences overflow and damages. High rainfall events also increase erosion which causes losses of soil water storage and siltation of reservoirs. Higher temperatures cause higher evaporative demand and hence higher irrigation water demand. Higher temperatures also affect the efficiency of wastewater treatment plants.¹² Jordan has been subjected to additional water stress due to the influx of displaced peoples from neighbouring States. Since 2011, Jordan has received approximately 657,000 Syrian DPs who are situated in urban settlements and placing additional pressures on Jordan's scarce water resources. There have also been indications of risks of pollution of the main aquifer lying beneath the Zaatari camp due to wastewater leakages. Another risk is the overpumping of the Amman-Zarga aquifer.

In Lebanon, climatic changes are expected to have diverse implications for Lebanon's environment and socio-economic structure. Extreme weather events can have adverse impacts on public heath, human settlements, transport infrastructure, agriculture production and power supply. The fragile biodiversity, ecosystems, and natural habitats will be threatened by increased forest fires, pest outbreaks and sea level rise. The country's vulnerability assessment identifies the agriculture, forestry, water resources, human health, coastal zone, and tourism sectors as most vulnerable with distinctive social, economic and environmental implications¹⁵. **Deleted:** In Jordan, water demand distinctly exceeds supply as water availability per capita has declined significantly, from 3,600 m³ per capita in 1946 to only 145 m³ in 2008.¹⁴ This will make some areas unliveable, reduce agriculture lands and put more pressure on already scarce water resources, potentially increasing displacement, the continuous risk of social unrest and conflicts and migration to host settlements already struggling to provide basic services.

⁹ Jordan Third National Communication on Climate Change
¹⁰ MWI (Ministry of Water and Irrigation, Jordan) (2009); Water for Life. Jordan's Water Strategy.

¹¹ Jordan Third National Communication on Climate Change

¹² Jordan Ministry of Water and Irrigation: Climate Change Policy for a Resilient Water Sector, 2016, page 3 ¹³ UN-ESCWA et al. (2017) Arab Climate Change Assessment Report (RICCAR initiative) ¹⁵ Lebanon Third National Communication on Climate Change

Projections results show an increase of 1.2°C and 1.7°C by mid-century and a decrease in precipitation by 4 to 11 percent by the end of the century. For Zahle, projections show a 6-15 percent decrease in the annual total rainfall (mm)/number of days by 2098 under the SRES A1B scenario 16. Droughts will occur 15 days to 1 month earlier, and countrywide drought periods will extend 9 days longer by 2040 and 18 days longer by 2090. The already dry regions, such as the Bekaa, Hermel, and the South, will experience the sharpest effects. Climate change will cause a decline in water availability in Lebanon as snow will melt earlier in spring affecting spring recharging and decreasing water availability for irrigation in summer. The decline in precipitation will also negatively affect the recharge of rivers and groundwater. Anticipated changes in climate would reduce the nation's exploitable supplies of water by about 1 percent in 2020, 8 percent in 2040, and 29 percent in 2080¹⁷. (This is even aggravated by the fact that water demand in Lebanon increased 28 percent between 2011 and 2017, which is directly linked to the Syrian crisis.¹⁸

There are adaptation challenges for the water sector in Lebanon, ranging from institutional to political and technical obstacles. The lack of coordination between ministries on water issues and flat rates tariffs policies coupled with weak technical knowledge of Integrated Water Resources Management, lack of awareness and financial constraints represent barriers towards adaptation to climate change for the water sector that have been aggravated by border conflicts and DPs crisis¹⁹. Based on available national level data focused on target areas, the target cities were selected because of a combination of existing and projected climate change-related water challenges, high pressure on water resources due to high influx of DPs and lacking resources and capacities to address these climate change-related water issues and specific needs of DPs (which is the justification for the funding request).

In recent years, millions of people have been displaced and migrated from Syria.²⁰ Lebanon and Jordan are among the top DP host countries: Lebanon is the third largest hosting country in the world (and first if compared to the size of its national population) and Jordan the seventh.²¹ Although some moved to camps, most (85 percent in Lebanon²² and 83.3 percent²³ Jordan) settle in cities, often in informal communities. This movement is impossible to stop as people search for security, livelihood opportunities and a decent life. Unfortunately, due to lack of planning and resources, many find themselves in communities that lack basic infrastructure and services, of which water challenges are seen as a major problem.²⁴ often leading to health and livelihood issues, social unrest and further migration.²⁵ Moreover, the majority of DPs from Syria live under the poverty line²⁶ and lack legal residency making it difficult for them to find a job. In Lebanon, 33 percent of households have no working members and this directly affects affordability of water as 34 percent of households rely on bottled water27. There is a decline in funding for support to countries like Jordan and Lebanon that face DPs crisis²⁸. For example, US\$ 2.035 billion is needed to support Syrian DPs in Lebanon of which 30 percent only is funded²⁹. This will make adaptation to climate change in areas where DPs reside even more difficult.

Need: The scale and nature of the Syrian crisis and climate change challenges in Mashreq (and MENA) region requires a shift in development approach - a need for better and more effective regional, national and local programming focused on addressing resource scarcity issues in cities exacerbated

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¹⁶ Ministry of Environment and UNDP (2011) Lebanon Second National Communication on Climate Change – Public Health tion on Climate Change

Lebanon Third National Comr ¹⁸ Lebanon crisis response plan 2017-2020

¹⁹ Lebanon Third National Communication on Climate Change
²⁰ The Syrian Arab Republic is the biggest sending country of refugees registered by UNHCR in the world (5.5 million out of a total of 18.5 million - UN-Habitat 2018. Migration and inclusive cities: A guide for Arab city leaders ²¹ UN-Habitat 2018. Migration and inclusive cities: A guide for Arab city leaders

²² Lebanon crisis response plan 2017-2020

 ²³ UNHCR fact sheet, August 2018.
 ²⁴ See Jordan and Lebanon INDCs and Lebanon crisis response plan 2017-2020 25 https://video.ecc-platform.org/videos/links-between-migration-and-climate-change

²⁶ UN 3RP: Regional Refugee & Resilience Plan 2018-2019.

UNHCR, UNICEF and WFP (2017): Vulnerability Assessment of Syrian Refugees in Lebanon UN 3RP: Regional Refugee & Resilience Plan 2018-2019.

²⁹ UNHCR, UNICEF and WFP (2017): Vulnerability Assessment of Syrian Refugees in Lebanon

by both the influx of DPs and climate change impacts.³⁰ For an overview of needs, see annex 1. There is enough evidence that water challenges will likely grow for Irbid, Mafraq and Zahle in the future due to climate change impacts. There is also a clear link between influx of Syrian DPs and increasing pressure on water resources in these areas. Both challenges are coupled with adaptation challenges in both countries. Common adaptation challenges for the two countries are financial constraints to implement climate action. For example, the financial deficit in the municipality budget for Greater Mafraq has reached 107 percent due to the impact of the influx of Syrian DPs³¹. Also, the lack of awareness at the community level, weak coordination between relevant authorities and need to spend more on research and capacity building to apply low-cost innovative soultions³². It can also be observed that there is a city-level knowledge gap needed for sound adaptation interventions at the local and municipal levels.

As most DPs live in cities, solutions focused on their needs and negative climate change impacts must target host cities and towns.³³ The shift from a focus on camps to cities and towns means changing the paradigm for how humanitarian and development agencies work with DPs. Instead of providing stand-alone solutions to DPs in camps or rural areas, the challenge is to support host communities to adapt / scale up existing services, shelter and jobs to meet the needs of both the original residents and DPs,³⁴ considering the impacts of climate change, especially increasing water challenges, on these services.

Syrian DPs in Jordan and Lebanon are specifically vulnerable to climate-induced water challenges. Many of the DPs have now been in the host country for four or more years. While the vast majority of Syrian DPs continue to be geographically integrated with host communities in urban, peri-urban and rural areas, they are increasingly vulnerable. Currently, over 85 percent of Syrian DPs, living outside of camps in Jordan,³⁵ are below the poverty line and more than 76 percent of Syrian DPs are below the poverty line in Lebanon³⁶. In Jordan, many DPs in non-camp settings are Shelter, Education and Health vulnerable not because these services are not available but because they are not able to afford them or because of the associated costs (e.g. Transportation costs). The Jordan Refugee Response Plan identifies 64 percent of cases in the Northern region as highly vulnerable (including Irbid) while the East (Mafraq) is the second highest region in the percentage of DPs rated highly vulnerable or above³⁷. Poor Syrian families remain vulnerable to losing access to WASH services. The Jordan Refugee Response Plan survey shows that 32 percent of cases are identified as severely vulnerable due to spending over 25 percent of their expenditure on WASH items³⁸. In Zahle, more than 50 percent of male refugees were not working. Most Syrian refugee women (93 percent) were not working. Zahle had the highest share among Lebanese cities (42 percent) of households relying on cash from humanitarian organizations as a source of income and 80 percent of households depended on informal loans as a source of income³⁹. This leaves most of the DPs susceptible to impacts of climate change and with weak adaptive capacity.

In addition, there are a number of specific challenges across the region, including limited job access and livelihoods opportunities, exhaustion of savings, and the adoption of negative coping mechanisms, which further exacerbate the residual protection risks they face. Broader political and social pressures can also affect stability between displaced populations and host communities in both countries. There are over 10,000 Syrian displaced children recorded in the Arab region as either separated, Deleted: 0
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³⁰ World Bank et all (2017, policy note September 14): Refugees in the middle east. Bringing an urban lens to the forced displacement challenge

³¹ ILO (2016) Local Economic Development Strategy For Mafrag Governorate (2016-2018)
³² Jordan Third National Communication on Climate Change and Lebanon Third National Communication on Climate Change

³³ Idem page 21

³⁴ Idem

 ³⁵ UNHCR fact sheet, August 2018.
 ³⁶ UN 3RP: Regional Refugee & Resilience Plan 2018-2019.

³⁷ UNHCR (2015) Jordan Refugee Response Plan

³⁸ l<u>dem</u>

³⁹ UNHCR, UNICEF and WFP (2017): Vulnerability Assessment of Syrian Refugees in Lebanon

unaccompanied or in institutional care.⁴⁰ The loss of social networks further decreases the adaptive capacities and make DPs more vulnerable to climate change. The project addresses adaptation challeges to the climate-induced increase in droughts, and pressure on water services due to influx of DPs. The project identifies DPs as the most vulnerable due to socio-economic challenges that could affect affordability to access water in the target areas.

Target area:

□ Type 2 DPs host cities: cities under widespread stress from displaced persons – which significantly impacted the overall absorption capacity, including urban systems and services such as water supply (exacerbated by climate change), sanitation, education, and health services.41

Lebanon: Zahle and surrounding 3 municipalities with focus on poorest / informal communities with large number of DPs. The total population of Zahle (including 25,409 Syrian DPs⁴²) is 80,282. The population of targeted surrounding municipalities: Qobb Elias: 33,680 (21,391 Syrian DPs⁴³), Taalbaya: 22,436 (9,102 Syrian DPs⁴⁴) and Saadnayel: 24,374 (17,266 Syrian DPs45).

Jordan: Irbid and Mafraq with focus on poorest / informal communities with large number of DPs. The population of Irbid is estimated at 950,000 and the population of Mafraq is estimated at 206,920 in 2017⁴⁶. Number of Syrian DPs in Iribd is 135,132 and in Mafrag is 157,446.47

Figure 1: typology of settlements⁴⁸



TYPE 1

Cities with localized

displacement impact

Example

Amman, Beirut



stress from displacement

Example

Zarga, Irbid, Mafrag, Tripoli





TYPE 3 **Cities and towns heavily** affected by conflict damage

Example:

Aleppo, part of Homs, Raqqa



Example: Syrian camps near Zarga and Mafrag

TYPE 4

Urbanizing camps

40 UN 3RP: Regional Refugee & Resilience Plan 2018-2019

⁴¹ World Bank et all (2017, policy note September 14): Refugees in the middle east. Bringing an urban lens to the forced displacement

- challenge, 42 UNHCR 2018 43 Idem
- 44 Idem

Idem ⁴⁶ Department of Statistics (DoS) - Jordan

UNHCR

48 World Bank et all (2017, policy note September 14): Refugees in the middle east. Bringing an urban lens to the forced displacement challenge,

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Target groups:

- DPs as main vulnerable group within host cities⁴⁹ with consideration of gender (women, girls, boys and men), youth and people with specific needs (e.g. disabled).
- □ The 4 components of the project will target all of the Syrian DPs in Zahle and its surrounding 3 municipalities (73,168) and 25 percent of the total Syrian DPs in Irbid and Mafraq (73,168) as direct beneficiaries. The indirect beneficiaries are the hosting communities in the targeted areas who will benefit indirectly from the intervention in those cities. Since the number of DPs targeted will be the same, then the amount of funding requested is equal.

Project / Programme Objectives

Challeng	es / objectives	Development approach applicable to DP change context	s crisis and climate	(Deleted: refugee
to climate increase 1. Increase resilie region Mana vulne mana urban	e change-related wate	change context he resilience and adaptive capacities of d r challenges in urban host settlements. T ing communities where the project interv Collecting evidence and developing an i approach to regional migration / DPs cri challenges: regional and sectoral studies, Forward-looking / pro-active urban and planning for future influx of people and clim integrated manner (that allows for coordina infrastructure and services).	his will indirectly entions will take place. ntegrated development sis and climate change monitoring and planning land use planning: late change impacts in an		
2. Enhai citizer and li Bridgi and c	nce ownership of ns, inclusion of DPs velihood support: ing the divide city reating jobs and orting livelihoods <u>of</u>	Citizen engagement: minimizing risks to s citizen engagement and enhancing opportu between host-city inhabitants and DPs Livelihood support: providing livelihood s building, training, and access to finance to	unities for social exchange	-(Deleted: and fostering inclusion
3. Increative resilient scarc adapt impromande and e cover	ase community-level ince to water ity: Addressing ation challenges, ving living conditions xpanding the age and quality of infrastructure ses	Settlement upgrading: Area-based approx services that also provides opportunity to ta area for complementary social, economic a Infrastructure and services projects: Exp water infrastructure and services that are so with an aim to expand coverage improve qu increase adaptive capacity to climate-induct	arget people living in the and other interventions banding and strengthening trained and/ or damaged uality of services and		Deleted: I Deleted: mproving Deleted: and
4. Impro to inc	we policies and plans rease urban ence (in the region)	Improvement of policies and plans by de and climate change management and mo model for type 2 cities and by considering change in (regional) migration policies and way around.	onitoring approach and gender and climate		

⁴⁹ In line with Jordan NAP

Project/Progra mme Components	Expected Outcomes	Expected Outputs	Countrie s	Amount (US\$) (very rough estimation s)	
1. Managing urban risks and vulnerabilities and managing rapid urbanization and city's physical form	City-level and regional Institutional capacity to manage both urban climate change risks / vulnerabilities and influx of DPs	 Regional emergency action plan for urban drought management Urban land use <u>strategies for</u> target cities (considering DPs influx and climate change impacts Trainings provided at city and national level. 	Lebanon, Jordan	2 million	Deleted: plans
2. Citizen engagement and livelihood support	Increased adaptive capacity and resilience and reduced vulnerability of DPs to climate change. Community-level ownership and livelihood skill building enhanced	 Providing community-level platforms for social exchange and research-based discussions focusing on urban adaptation to climate change Community level skill building, trainings and plans developed for constructing and maintaining resilient water systems 	Lebanon, Jordan	1,5 million	
3. Resilient water service sub-projects at community level	Expanded coverage and quality of innovative, cost- effective water supply techniques and services in <u>most vulnerable</u> target communities to increase resilience to climate change.	 X number of water collection / harvesting systems X number of waste water reuse facilities X number of water saving technologies introduced 	Lebanon, Jordan	7,1 million	
4. Improvement of policies and plans and knowledge management	Improved policies and plans to increase urban resilience (in the region) with specific focus on water challenges.	 'Regional' DPs and climate change management and monitoring approach and model for (type 2) cities, to feed into 3RP programming Mainstreaming of gender and climate change considerations in DPs-related policies and strategies Mainstreaming of gender considerations and the interest of vulnerable group (migrants) in climate change policies and strategies 	Lebanon, Jordan (and other countries in the region)	1 million	

Project / Programme Components and Financing

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	 Lessons learned collected and shared regionally 	
5. Total components	11,677.420	
6. Project/Programme Execution cost		1,225.806
7. Total Project/Programme Cost		
8. Project/Programme Cycle Management Fee charged by the Implementing Entity		
Amount of Financing Requested	14,000,000	

Project Duration: 4 years

PART II: PROJECT / PROGRAMME JUSTIFICATION

Project components and the regional and innovative approach

As mentioned above, there is a need for better and more effective regional, national and local programming focused on addressing water challenges in 'host' cities exacerbated by both the influx of DPs and climate change impacts. There is an opportunity to do this in the region (i.e. Lebanon and Jordan, but also Turkey, Iraq and Egypt) through an existing single planning and resource framework called 3RP (i.e. Regional, Refugee and Resilience Plan 2018-2019). This project will work with ministries in Lebanon and Jordan responsible for 3RP coordination, other 3RP partners and ministries responsible for climate change and water resources, to develop an integrated development approach focused on addressing water challenges in cities, exacerbated by both the influx of DPs and climate change impacts. Apart from the WASH sector, the project will also foster cooperation between Jordan and Lebanon in other sectors of the 3RP through enhancing coordination between the relevant ministries. This will be done through the development of a 'regional' DPs and climate change management and monitoring approach and model for (type 2) cities (by understanding drivers, pressures, impacts and responses) (component 1) and by sharing good and innovative practices (component 4), including the use of innovative techniques for water harvesting and waste water reuse (component 3) through community and vulnerable groups involvement (component 2), which are priorities in both Jordan and Lebanon (and in the region). Component 2 on citizen engagement and livelihoods support targets increased adaptive capacity and resilience and reduced vulnerability of DPs to climate change. The platform will be open to everyone and mechanisms will be put in place for equall access and benefits of different groups (DPs, host community members, women, youth, etc.) and to express needs and concerns and to plan interventions. Additional to online platforms and mobile phone applications (if possible), the platform will be a physical place where both DPs and host community members are welcome and exchange ideas and concerns. The focus of the platforms will be on resilience building in an urban context with a focus on water challenges. Moreover, an emergency action plan for urban drought management will be developed and linked to a regional drought early warning system (component 1). Climatic data in Jordan and Lebanon is available, sufficient and provided on a regular basis. Jordan's and Lebanon's Third National Communications on Climate Change Report submitted to The United Nations Framework Convention on Climate Change (UNFCCC), include climatic trends and climate change projections. The addressed climate variables include temperature, precipitation, drought, humidity and GHG emissions. This data was used to support the project concept and the project rationale is evidence-based. The project has consulted regional and national plans and strategies as shown in the section below to ensure that the activities are well aligned with regional and national priorities. The project will also address data gaps wherever needed- especially at the city level- through stakeholder consultations with the national authorities involved.

All the project activities will be carried out in both countries and the funding will be equal as the project targets the same number of direct beneficiaries in both countries. Efforts of the different regional and national committees working on these issues will be consolidated and integrated into one emergency plan.⁵⁰ The project will monitor the trends of influx of Syrian DPs into the target areas and the patterns

⁵⁰ Lebanon Environmental Assessment of the Syrian Conflict & Priority Interventions, page 67

of them returning home to continue adapting the approach and interventions of the project accordingly within the framework of the approved project document.

The regional approach will support cost-effectiveness through the development of a regional approach (versus smaller, not connected plans) and through the development and sharing of cost-effective and innovative techniques, which will benefit communities and vulnerable groups in the region Under component 1, the regional emergency action plan for urban drought management is innovative in a way that it assesses adaptation needs and provides adaptation options to water scarcity both at the regional and national levels specificially for urban areas, taking into account changes in climate change and water needs in cities due to influx of DPs. The urban land use strategies for target cities would be innovative decision-making tools for municipal governments (but also national government) to plan cities for future climate change impacts and influx of people in an integrated manner (that allows for coordinated investment in infrastructure and services. Under component 2, initiating community-level platforms for social exchange is an innovative way of exchanging views between DPs and hosting community members to express and discuss needs and concerns and to avoid potential tension related to resilience building of communities, especially if it comes to scarce resources such as water. Especially women and youth groups will be encouraged to participate in this exchange and planning process. Moreover, it will give DPs and host community members a sense of ownership for the project. Under component 3, the project will use internationally proven state of the art technologies that are innovative yet cost-efficient for water harvesting and waste water reuse at community / household level that have not been used properly in both countries. This will be elaborated in the concept note phase. The cost to provide water per person in a sustainable way is estimated around 50 USD. Under component 4, the integration between the regional DPs and climate change management and "contiuous" monitoring approach for (type 2) cities and 3RP programming is innovative and provides synergy between climate and DPs action.

Consistency with (inter)national strategies

Internationally, the project aligns with international development agenda 2030 (especially SDGs: 5, 6, 9, 11, 13), the Paris Agreement (COP21) and COPs after; the New Urban Agenda and the 3RP (regionally). In Jordan, the project aligns with 1) national climate change strategies (Jordan INDC especially residential water supply measures;⁵¹ Jordan 3rd national communication on climate change (2014) - especially adaptation in water sector (rainwater harvesting and wastewater treatment)⁵² and in urban areas (land use planning);⁵³ Jordan NAP – especially reduced total water availability; Jordan National climate change policy (2013-2020), 2) national development strategies (Jordan 2025 economic blue print - extreme poverty rate and Jordan economic growth plan 2018-2022 - electricity and water - alignment with focus on investments that can reduce the external vulnerability of the country such as renewable energy and water capture/efficiency programs) and 3) sectoral strategies (Jordan National Water Strategy 2016-2025 - especially Water Management for Climate Change Adaptation.⁵⁴ And Jordan land use project (2007). In Lebanon the project also aligns with 1) national climate change strategies (Lebanon INDC – especially improving water security.⁵⁵ The INDC states that climate change is one of many challenges to national development, besides population growth, rapid urbanization and geopolitical location and addressing these should be pursued simultaneously;⁵⁶ Lebanon 3rd national communication on climate change (2016) – especially adaptation in water sector (rainwater harvesting, wastewater reuse, water monitoring and refugees' crisis);57 Lebanon NAP with territorial/city level perspective (forthcoming) - with focus on water, 2) national development strategies National Physical master Plan (2005) and 3) sectoral strategies (Lebanon National water sector strategy (2012) - especially water supply / conservation and wastewater treatment; Lebanon crisis response 2017-2020 - especially safe water for drinking and domestic use with reduced health and

⁵¹ Jordan INDC page 12

⁵² Jordan 3rd National communication on climate change page 147

 ⁵³ Idem page 183
 ⁵⁴ Jordan national water strategy 2016-2025 page 47

⁵⁵ Lebanon INDC page 4

⁵⁶ Idem page 3

⁵⁷ Lebanon 3rd National communication on climate change page 149

environmental impact from unsafe wastewater management for refugees.⁵⁸ During the concept note development phase, consistency with sub-national strategies will be elaborated upon.

Learning and knowledge management

The project will capture and disseminate lessons related to use and implementation of innovative lowcost city- and community-level water harvesting and water reuse techniques and management of cities considering high influx of DPs and climate change impacts. Where possible, lessons will be integrated in 3RP programme plans, UN-ESCWA's SDGs platform, RICCAR, ACWUA, Arab Centre on Climate Change Studies, the State of the Environment Reports in Lebanon and Jordan in addition to reporting to UNFCCC (National Communications, NDCs, etc.). Lessons would also be very relevant to include in regional assessments (e.g. UN Environment's Global Environment Outlook). Moreover, project outcomes can be showcased by Jordan and Lebanon governments at major climate change events (such as the COP and Climate Change conferences). During the concept note development phase, information on specific knowledge products will be provided.

Consultative process

For the pre-concept note, meetings were held with AF focal points and different ministries focal points to align with national priorities. For the concept note stage, consultations in both Lebanon and Jordan will be held with National and local governments, UN agencies, NGO's, local communities and vulnerable groups and other relevant stakeholders to identify vulnerabilities, needs and priorities. For the full proposal, consultations will focus on identifying and selecting the specific interventions needed with communities and vulnerable groups based on adaptation benefits, cost effectiveness, feasibility and environmental and social impacts and risks, especially for the most vulnerable groups (DPs, women, youth, elderly, disabled people, indigenous groups, etc.).

Sustainability of the project

The project will be sustained by the strong linkage to national priorities (i.e. national buy-in), by mainstreaming outcomes into (inter)national and city-level strategies and their monitoring framework and through the engagement of local affected communities in planning, maintenance, monitoring and training activities. Alignment with regional plans and strategies, such as the 3RP and the Arab Strategy for Water Security, continued cooperation on the issues addressed through this project after it comes to an end is guaranteed. It is also sustained through the involvement and capacity building of national and municipal governments, local communities and vulnerable groups (e.g. skills development) and other stakeholders during the processes and through development of knowledge products and sharing of lessons. The process of monitoring the trends of influx of Syrian DPs into the target areas and the patterns of them returning home will continue to identify if the pressure on water resources is growing or declining. This is part of the continuous learning principle that will be established throughout the project in order to ensure that the objectives are achieved and to feed itno future projects at the local and national levels in both countries. The learning products will be shared as mentioned in the "Learning and Knowledge Management Section" on the global, regional and national levels. As for the concrete interventions, management and maintenance arrangements will be identified at the concept note development phase including guidelines to maintain water harvesting and waste water treatment equipments.

Economic, social and environmental benefits

The project will address water challenges at the local level for the groups most in need, which in turn will reduce health risks and enhance food security and livelihood opportunities (through skill building). The urban management and planning approach and community involvement will contribute to reducing city- and community-level climate change risks and potential social unrest between DPs and host communities. At the (inter)national level, lessons can be used to apply low-cost innovative water harvesting and water reuse techniques and city management and planning approaches considering high influx of DPs and climate change impacts, which will contribute to reducing country-level vulnerabilities. During the concept note phase, benefits per activity will be elaborated upon.

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⁵⁸ Lebanon crisis response plan 2017-2020, 2017, page 163

Compliance to national technical standards

The project will fully align with national technical standards, including standards for environmental and social impacts, land use planning, drought early warning systems, water supply / harvesting / reuse, etc. If environmental and social impacts are required for proposed interventions, this will be done during the full project development phase. During the concept note development phase, compliance procedures and information about authorizing offices will be elaborated upon.

Duplication with other funding sources

The project will avoid overlap with other projects and use lessons learned where possible. During the concept note development phase, all projects and their lessons learned, complimentary potential and non-duplication will be mapped. At this stage, government officials at the ministry and municipality level confirmed there is no overlap, such as with a rehabilitation of Jordan Badia project in Mafraq.

Justification for funding requested

The project will support implementation of national priorities as well as responding to local needs, especially of the most vulnerable, and will provide added value to national plans and approaches through implementation of innovative and low-cost technical interventions. There is a need for concrete adaptation interventions for the water sector in the targeted cities in Jordan and Lebanon focusing on the most vulnerable groups. The interventions are crucial for the cities to cope with current and future climate change impacts exacerbated by influx of Syrian DPs. The Third National Communications to the UNFCCC of Jordan and Lebanon stated clearly that financial constraints are among the barriers to adaptation and that there is a clear need for funding to support national and municipal climate action. As mentioned earlier, the target cities were selected because of a combination of existing and projected climate change-related water challenges, high pressure on water resources due to high influx of DPs and lacking resources and capacities to address these climate change-related water issues and specific needs of DPs, which includes access to affordbale water.

From a regional perspective, the programme will support the 3RP regional and national programming, for which budget gaps exist for the development of an integrated regional approach focused on addressing especially WASH and social cohesion and livelihoods issues,⁵⁹ in 'host' cities exacerbated by both the influx of DPs and climate change impacts.

The environmental and social impacts and risks identified

The proposed project seeks to fully align with the Adaptation Fund's Environmental and Social Policy (ESP) and Gender Policy (GP). For the concept note, the entire project and all project components and activities will be screened to identify potential environmental and social risks and impacts using the 15 Adaptation Fund Principles. A gender approach / baseline will also be developed, with a focus on DPs, women and youth. For the potential risks and impacts identified, mitigation measures will be proposed to reduce risks to manageable levels. For the full proposal, an ESMP will be developed, which will include management and monitoring arrangements for dealing with potential risks. With the information available at this stage, the project is expected to fall into medium risk category B because interventions (water harvesting and water reuse interventions will be implemented at the community level – thus will be small and localised. Information required to further assess this classification, also for each intervention / activity, will be provided at the concept stage. This information will include detailed information per intervention / activity so that these can be regarded as Identified sub-projects.

⁵⁹ 3RP Regional Quarterly Dashboards March 2018. Online: <u>https://data2.unhcr.org/fr/documents/download/63820</u>

PART III: IMPLEMENTATION ARRANGEMENTS

UN Habitat will be the implementing entity for the project providing specific technical support in urban development and resilience related areas. With support from the Regional Office for Arab States (ROAS), UN-Habitat country offices in Jordan and Lebanon will facilitate the coordination between the government entities. In Jordan and Lebanon, national executing entities will be the ministries responsible for climate change, water resources and DPs:

Lebanon: Ministry of Environment; Ministry of Energy and Water; Ministry of Social affairs; Jordan: Ministry of Environment, Ministry of Water and Irrigation; Ministry of Planning and International Cooperation, of which the last is a National Implementing Entity.

At the city level, partners will be municipal line departments in target cities. For the execution of community-level concrete interventions and community involvement, local partners will be identified during the concept note phase. There will be coordination between municipal authorities in both countries on technical issues (e.g. spatial planning) and communication of lessons learned during implementation.

The two countries are already under a number of common frameworks by the League of Arab States such as the Arab Strategy for Water Security and the Arab Strategy for Housing and Sustainable Urban Development 2030. On DPs specifically, Jordan and Lebanon are already cooperating under the 3RP framework. This ensures that the coordination of the project will be continuous, efficient and sustainable.

PART IV: ENDORSEMENT BY GOVERNMENTS AND CERTIFICATION BY THE IMPLEMENTING ENTITY

A. Record of endorsement on behalf of the government⁶⁰ Provide the name and position of the government official and indicate date of endorsement for each country participating in the proposed project/programme. Add more lines as necessary. The endorsement letters should be attached as annexes to the project/programme proposal.

Nayef Hmeidi Al-Fayez, Secretary general, Ministry of Environment, Jordan	Date: August 5, 2018
Tarek El Khatib, Ministry of Environment, Lebanon	Date: August 6, 2018

Each Party shall designate and communicate to the secretariat the authority that will endorse on behalf of the national government the projects and programmes proposed by the implementing entities.



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REPUBLIC OF LEBANON MINISTRY OF ENVIRONMENT

Beirut, 6 /08 /2018 Our Ref: 4206 /B

The Adaptation Fund Board c/o Adaptation Fund Board Secretariat Email: Secretariat@Adaptation-Fund.org Fax: 202 522 3240/5

Subject: Endorsement for project: Increasing the resilience of displaced persons to climate change related water challenges in urban host settlements

In my capacity as designated authority for the Adaptation Fund in Lebanon, I confirm that the above national project/programme proposal is in accordance with the government's national and regional priorities in implementing adaptation activities to reduce adverse impacts of, and risks, posed by climate change in Lebanon.

Accordingly, I am pleased to endorse the above project/programme proposal with support from the Adaptation Fund. If approved, the project/programme proposal will be implemented by the UN Habitat and executed by the Ministry of Environment.



AA-F-16-V.1-1/1

<u>CC</u>: - Mrs. Nancy Khoury, Acting Head, Department of Public Relations & External Affairs, MoE - Mrs. Samar Malek, UNFCCC Focal Point, Service of Environmental Technology

Ministry of Environment, Lazarieh Center, 7th Floor, Block A-4 Old P.O.Box: 11/2727; Beirut-Lebanon. Tel: +(961)-1-976555 or 4-Digit Number: 1789; Fax: +(961)-1-97653 Home Page: www.moe.gov.lb

A. Implementing Entity certification

by the Adaptation Fund Board, Plans, including Jordan INDC, 1 economic blue print, Lebanon II 3RP, subject to the approval by the project/programme in comp Adaptation Fund and on the unit	een prepared in accordance with guidelines provided and prevailing National Development and Adaptation NAP, National climate change policy, Jordan 2025 NDC, NAP, TNC, Lebanon 2025 and the regional the Adaptation Fund Board, <u>commit to implementing</u> <u>liance with the Environmental and Social Policy of the</u> derstanding that the Implementing Entity will be fully tible for the implementation of this project/programme.
Dire	Signature
Date: 06-August-2018	Tel. and email: +25420762-3726
Project Contact Person: Tarek / Tel. And Email: +20237618812	

Annex 1: Overview of needs / approach:61

- □ Moving from emergency approaches to more development-oriented, medium-to-long term approaches is pivotal. Emergency approaches to displacement and natural disasters and climate change are necessary but insufficient. The protracted nature of displacement and climate change, and the fact that host areas and communities often face similar challenges in terms of living conditions and opportunities, require medium-term solutions that target both the displaced and the host communities.
- □ Urban displacement and climate change and their associated trends and impacts need to be integrated into urban planning and policies. Forced displacement and climate change are increasingly important factor driving urban growth trends. Taking into account the scale, scope and impacts of displacement and climate change in the existing urban planning and policies will help local governments respond to the challenge effectively.
- □ Managing urban growth is beneficial in the long run. Large influxes of refugees often lead to sub-optimal patterns of urban growth that will determine long-term urban resilience and sustainability of cities, since housing, street, and public spaces are not easily changed once established.
- □ Urban service provision is extremely critical for improved living conditions and building trust with local authorities. Local governments should invest in urban services, considering most cities in Mashreq are already suffering from inadequate service provision. Displacement and climate change exacerbate the situation by adding extra pressure on services, often becoming a source of tension with discontent and competition around services.
- □ Promoting social cohesion is crucial for sustaining positive development outcomes. Rising social tensions between host communities and refugees, and among the displaced, pose risks and threats to development gains. Therefore, inclusive approaches that promote social cohesion should be integral part of displacement responses.
- □ Urban resilience provides a comprehensive response framework. Although there is little exploration of how urban systems respond to a rapid influx of new and often long-term residents by conflict and climate change, it is manifest and critical to build resilient communities and institutions that are equipped to respond to shocks and stresses arising from displacement.

⁶¹ World Bank et all (2017, p21, policy note September 14): Refugees in the middle east. Bringing an urban lens to the forced displacement challenge.

Annex 2: Climate change adaptation interventions to be considered (and a selection to be made):

Residential water supply:

- □ Introduction of water saving technologies such as low-flow toilets and showers and efficient appliances.62
- Collection of rainwater for gardens, toilets, and other applications⁶³ and storage dams and hill lakes.64

(Urban) agriculture:

- □ Irrigation efficiency, e.g. through water saving technologies⁶⁵
- □ Using groundwater more efficiently⁶⁶
- □ Reuse of treated wastewater⁶⁷
- □ Rainwater harvesting⁶⁸

Possible institutional / planning adaptation activities:

- □ Increased water metering⁶⁹
- □ Reform of water pricing
- □ Promotion of water saving through awareness campaigns⁷⁰
- Developing river protection and sanitation zones⁷¹
- Urban ecosystem management / protection to increase water supply.
- □ Introducing policy measures to ensure the equity in access to water⁷²
- \Box Integrating gender considerations and the interest of vulnerable group in climate change policies and strategies.73

Possible concrete interventions when in border areas:

- Activities concerning water quality, e.g. groundwater protection (technical innovation)
- Reuse of treated wastewater (for green spaces) (technical innovation)
- □ Improvement of water quality, e.g. water treatment (technical innovation)

⁶² In line with Jordan INDC, page 12 and in line with Lebanon INDC, page 4 and Jordan economic growth plan 2018-2022, page 14 and 52-55

⁶³ In line with Jordan INDC, page 12

⁶⁴ In line with Lebanon INDC, page 4 and Jordan economic growth plan 2018-2022, page 14 and 52-55 65 In line with Jordan INDC, page 12 and Jordan economic growth plan 2018-2022, page 14 and 52-55

⁶⁶ In line with Jordan INDC, page 12 and in line with Lebanon INDC, page 4 and Jordan economic growth plan 2018-2022, page 14 and 52-55 ⁶⁷ In line with Jordan INDC, page 12 and in line with Lebanon INDC, page 4 and Jordan economic growth plan 2018-2022, page 14 and 52-55

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 ⁶⁸ In line with Jordan INDC, page 12 and Jordan economic growth plan 2018-2022, page 14 and 52-55
 ⁶⁹ In line with Jordan INDC, page 12 in line with Lebanon INDC, page 4
 ⁷⁰ In line with Jordan INDC, page 12
 ⁷¹ In line with Jordan INDC, page 12
 ⁷² In line with Jordan INDC, page 12
 ⁷³ In line with Jordan INDC, page 12

⁷³ In line with Jordan INDC, page 17